MARINE TURTLES

OF THE INDIAN SUBCONTINENT

Edited by
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International Instruments and Marine Turtle Conservation

Sali J Bache and John G Frazier

A suite of human activities impacts marine turtle survival at the individual, population and species levels. These impacts can be grouped into two broad categories—direct take and indirect take. Direct take includes the culling of turtles and egg collection; it can be for either personal use or commercial trade in marine turtles and their products. Indirect take includes a wide variety of activities, which although not intentionally meant to harm turtles, can have diverse negative impacts on either the animals or on the habitats on which they depend. A clear example of indirect take that has a significant impact upon these reptiles is incidental capture (or bycatch) in fishing operations. Other examples include habitat destruction and egg predation by predators introduced into a particular area by human activities.

The life cycle of marine turtles includes stages with dependence on both marine and terrestrial environments, delayed maturity, and the potential for long life. This complex life cycle presents numerous major challenges to conservation activities, but one life history characteristic is especially challenging—marine turtles are migratory, crossing national boundaries and the high seas. As a result, there is a need for cooperation between countries to provide adequate protection for both the animals and their habitats. In response, international instruments have been developed to foster collaborative actions to conserve and manage the future of these shared resources. Indeed a veritable host of international accords have been developed to deal with issues involving both direct and indirect take of marine turtles. Direct take is, by and large, considered in conservation accords specifically intended to protect marine turtles. These instruments have been predominantly regional in nature. One exception to this is a global treaty established in 1973 to regulate international trade in endangered species. By comparison, indirect

take (though also considered in dedicated marine turtle agreements) is dealt with primarily in accords that are intended to regulate the industry or activity in question. The protection of marine turtles is very much secondary to the core purpose of such instruments. For example, in accords constructed to manage regional fisheries, marine turtles are included under provisions for associated and dependent species. In addition to agreements regulating the impacts of industries, bycatch issues have also received considerable attention under international trade regimes.

There have been several recent listings (Frazier 2000a, Young 2001) and also evaluations of international instruments that are important to marine turtle conservation (e.g. Bache 2002, Wold 2002, see also Frazier 2002 for a compilation), as well as a study specific to the legal regime in India (Upadhyay and Upadhyay 2002). The present review draws upon these earlier studies, summarising the range of international instruments that are relevant to the conservation of marine turtles and their habitats; the summary is intended to support conservationists, protected area managers, and decision-makers in the Indian subcontinent as they develop and implement conservation activities for marine turtles and their habitats, with particular reference to challenges presented by the migratory nature of these animals. It considers firstly those instruments that are focussed specifically on marine turtle conservation. These operate on a regional basis covering three different geographic areas—the Inter-American region, the Indian Ocean and Southeast Asia, and the Atlantic coast of Africa. The latter two fall under a framework accord, the Convention on the Conservation of Migratory Species of Wild Animal (CMS),[1] the general functioning of which is also outlined here. In addition, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)[2] is summarised, as are two recent initiatives under this treaty specific to marine turtles—the so-called 'Cuban Hawksbill proposal' and the 'Cayman Island Turtle Farm proposal'. Although these two CITES issues are based in the Caribbean, they have implications on an international scale and are thus relevant to conservation activities globally.

This review also outlines those instruments that consider incidental or indirect impacts on marine turtles. Within this heading fall instruments for the governance of fisheries, including global agreements as well as those that establish Regional Fisheries Management Organisations (RFMOs). In addition, the impact of trade accords on fisheries regulation and environmental conservation—with particular reference to marine turtle conservation—is considered. More specifically, attention is paid to regional arrangements, and once again, though outside the geographic range of the Indian subcontinent, the bilateral Turtle Islands Heritage Protected Area (TIHPA)[3] agreement

[1] Convention on the Conservation of Migratory Species of Wild Animals, adopted 3 June 1979, reprinted in 19 I.L.M. 15 (Bonn, 1979, in force 1983) [hereinafter CMS].

[2] Convention on International Trade in Endangered Species of Wild Flora and Fauna, adopted 3 March 1973, 27 U.S.T 1087, 993 U.N.T.S. 243 [hereinafter CITES].

[3] Memorandum of Agreement between the Government of the Republic of the Philippines and the Government of Malaysia on the Establishment of the Turtle Island Heritage Protected Area (reprinted in Frazier 2002: 156–161).

and the Cooperative Agreement for the Conservation of Sea Turtles of the Caribbean Coast of Costa Rica, Nicaragua and Panama, are considered as models that could be used in other areas, such as the Indian subcontinent.

Instruments Dealing Specifically with Direct Impacts on Marine Turtles

INTER-AMERICAN CONVENTION FOR THE PROTECTION AND CONSERVATION OF SEA TURTLES (IAC)

The Inter-American Convention for the Protection and Conservation of Sea Turtles (IAC) entered into force on 2 May 2001, with nine Parties—Brazil, Costa Rica, Ecuador, Honduras, Mexico, Netherlands, Peru, USA, and Venezuela (the Depositary). During the early phase of its development, this Convention was criticised as having a limited focus on the problems of trawl bycatch and the mandatory use of turtle excluder devices (TEDs). In the event, with the active participation of a network of conservationists throughout the region, the IAC evolved to become a much more comprehensive arrangement (Bache 2000, Frazier 2000b). The IAC's objective is to 'promote the protection, conservation and recovery of sea turtle populations and the habitats on which they depend, based on the best available scientific evidence, taking into account the environmental, socioeconomic and cultural characteristics of the Parties.' (Article II).

The Convention considers a broad range of issues concerning the conservation of marine turtles, including:

- acknowledgement—in both the preamble and text (Article II) of the convention—of the environmental, cultural and socio-political characteristics of the contracting Parties;
- measures to promote bi- and multi-lateral cooperative activities and the establishment of regional management arrangements such as sub-regional accords and management plans (Article XII);
- express consideration of the role of science, providing for the creation of a scientific committee (Article VIII) and the promotion of scientific research (Article IV, 2, e);
- establishment of monitoring programmes (Article IX) and a requirement for annual reports from each Party (Article XI);
- promotion of environmental education and dissemination of information (Article IV, 2, g);
- express promotion of multi-sectoral participation and community participation (Article IV, 2, g), mandating the creation of a multi-sectoral Consultative Committee (Article VII);
- provision of exceptions to strict protective measures with respect to subsistence takes (Article IV, 3, a);
- reduction of incidental capture (Article IV, 2, h); and
- habitat conservation and restoration (Article IV, 2, d; Annex II).

There is also a provision requiring all Parties to act in accordance with the 1994 Marakkesh Agreement, which established the World Trade Organisation (WTO).[4] Given that significant enforcement measures and dispute settlement proceedings are provided under the WTO itself, the inclusion of a WTO subservience clause in the IAC is likely to have little, if any, impact on the actions of IAC Parties. It was most likely included as little more than a censure motion in regard to the US's use of unilateral embargo action to pursue its environmental agenda abroad (Bache 2000).[5]

The IAC is composed of 27 Articles and four Annexes. This configuration was intended to allow for procedurally easier amendment of the treaty by facilitating the creation of additional annexes in which issues not afforded adequate attention, could be provided detailed consideration and regulation—for example, explicit controls on fishing methods, such as long lining, that are not presently contemplated in detail. However it is not clear what procedures would be used to create new annexes, amendments to the treaty (Article XXXIV) or amendments of annexes (Article XXVI).

The IAC applies to the land territory each Party holds in the Americas, maritime areas in the Atlantic Ocean, Caribbean Sea, and Pacific Ocean where each Party exercises jurisdiction over living marine resources—in other words to the limit of their Exclusive Economic Zone (EEZ) as much as 200 nautical miles (nm) seaward (Article III)—and their flag vessels on the high seas (Article IV, 1, b). Hence, the only situations not covered, are those of activities on the land and in the waters of non-signatory States or by vessels flying a non-signatory flag on the high seas. In this regard, it is worthwhile noting that geographic restrictions limit membership to the IAC to 'States in the Americas', these being countries located in North, Central and South America and the Caribbean Sea, as well as other States that have continental or insular territories in this region,[6] thus, France, the Netherlands, and the UK are included. In regard to implementation, although plans and reporting mechanisms are included in the Convention, there are no enforcement measures beyond those left up to signatory nations (Article X). Each Party is responsible for policing the Convention within its borders and on vessels flying its flag.

The First Conference of the Parties (COP 1), which finished on 21 August 2003, resulted in the adoption of Rules of Procedure, Terms of Reference for the Consultative Committee, draft Terms of Reference for the Scientific Committee, and four resolutions for the establishment of an interim Secretariat, a special financial fund, a proposal for synergy with CITES, and the conservation of the leatherback turtle. The IAC is still in

[4] Article XV of the IAC—directing Parties to comply with the rules of the WTO, particularly in reaction to technical barriers to trade—was included in the 1995 draft of the IAC, before the shrimp–turtle case was raised at the WTO (see section on WTO, pp 344–349).

[5] The US has used several laws to implement unilateral embargoes in relation to fisheries and marine policies, not only Section 609 which was the issue of concern in the IAC (see section on WTO). Witness the tuna–dolphin issue and Driftnet Prohibition Act, and the Pelly Amendment and whaling dispute.

[6] IAC Article I, 4; the significance of this is the inability of distant water fishing nations (DWFNs) to join.

its infancy, so it is too early to be able to assess its effectiveness. An evaluation of the Mexican legal regime in regard to marine turtle conservation concluded that the IAC provided unique legal support for several fundamental aspects critical to the conservation of marine turtles (Namnum 2002). However, it has also been argued that the design of the IAC has certain limitations, particularly in regard to specifically including greater involvement of the social sciences, greater involvement of local communities and NGOs, and making use of the flexibility of the IAC text to incorporate contemporary conservation policies (Campbell et al 2002). Given the way the IAC has developed, with intense and continuing involvement by diverse actors from throughout the region (Frazier 2000b), and the direction that it is presently heading, it seems that this treaty will need to rely heavily on not only the Parties, but also on many other stakeholders in the region. Yet, there are serious concerns for the future of this treaty given recent developments during the second round of the First COP—the suspicion that certain Parties have for the participation of people and organisations from outside of official delegations, as shown by the restrictive language adopted in Rule 11 (observers) in the Rules of Procedure, the intensity of the negotiations to reach agreement on the language in this Rule; and the blatant politicisation of the Scientific Committee.

THE CONVENTION ON THE CONSERVATION OF MIGRATORY SPECIES OF WILD ANIMALS (CMS)

The Convention on the Conservation of Migratory Species of Wild Animals is designed to provide cooperative mechanisms for States to regulate activities that impact upon migratory (shared) species, populations, or 'lower taxa' (Article I, 1, a). Over the last decade the CMS has expanded its membership, and seen the creation of a number of subsidiary agreements with broadened geographic and taxonomic ranges beyond the initial European focus (Bache and Rajkumar 2003). It has also provided considerable attention to marine wildlife species (Hykle 2000). With regard to marine species, provisions for action beyond the sovereign jurisdiction of any one State have always existed in the CMS. The definition of 'Range State' under CMS not only includes those countries in whose land or waters a species occurs, but also extends to flag vessels engaged in activities that result in the taking of listed migratory species, even if this occurs outside national jurisdictional limits (Articles I,1,h and VI,2). This provision has particular significance in terms of the incidental capture of migratory species in fishing operations, as a large portion of some countries' fishing activities occurs on the high seas or in the waters of other States.

The CMS parent agreement has binding obligations, but also functions to a large degree as a framework convention codifying general principles to be applied under subsidiary taxon-specific agreements. Migratory species may be listed under either of two appendices, occasionally under both (Article VI, 2). Appendix I lists those species with an endangered status, and the taking of these species is strictly prohibited. Range States are directed to take action to encourage the recovery of such species and where appropriate, their habitats, and also to mitigate threats and remove obstacles to the migration of the said species (Article III).

Appendix II species are those with an unfavourable conservation status, and Parties are encouraged to develop subsidiary agreements that will benefit these species, as mandated in Article IV. Guidelines for subsidiary agreements are provided in Article V. This stipulates that the objective of each agreement shall be 'to restore the migratory species concerned to a favourable conservation status or to maintain it in such a status.'

Although Article V, 2 states that each agreement should cover the entire geographic range of the species concerned, in practice some agreements are regional, only covering part of the range of a species.[7] Recent examples of regional agreements for marine species include both small cetaceans and marine turtles (Bache and Rajkumar 2003).

An important provision of the parent Convention in relation to CMS subsidiary agreements is that these are open to membership by all Range States, whether party to the CMS or not (Article V, 2). This contrasts to the provisions of Article IV on endangered migratory species which apply only to States that are Party to CMS. Currently the CMS parent agreement has 86 Parties,[8] three other States that are Signatories but not Parties, and an additional 23 States which are members of subsidiary agreements but not the Convention itself.[9] This is of particular importance to the future adoption and utility of CMS agreements in North, Central and South America and also Southeast Asia, where large numbers of States are not Party to the treaty (Bache and Rajkumar 2003). This is not quite as serious in the Indian subregion, India herself being one of the original Parties to CMS. In addition, two neighbouring States, Sri Lanka and Pakistan, are CMS Parties, but other States that are known, or likely, to share turtle populations with India are not, such as Bangladesh, the Maldives, Malaysia, Myanmar and Thailand.

The CMS interpretation of the term 'agreement' is such that any subsidiary instruments generated under Article IV may be either binding or non-binding in nature. As a general rule, binding agreements require both signature and ratification, and they provide a similar framework to that of a stand-alone convention. Ratification of a convention is a time consuming and administratively intensive process but this offers a more formalised endorsement and commitment to the particular agreement by a State's government. Binding agreements also commonly contain a funding formula and as such are able to provide a separate secretariat to administer and further implement the agreement. Though not strictly adhering to a particular nomenclature, under the CMS framework binding arrangements are commonly referred to as 'Agreements' [upper case] and non-binding arrangements as 'Memoranda of Understanding (MoU)' (CMS 2002). Appended to both Agreements and MoUs are Action Plans or Conservation and Management Plans (CMPs). These plans contain the more specific management activities and are used to prioritise, monitor and further develop the conservation efforts of Parties

[7] In the early 1990s, in response to the formation of the Agreement on the Conservation of Seals in the Wadden Sea—an arrangement that only covers a portion of the geographic range of common or harbour seals—a resolution was passed by the CMS Conference of Parties (COP) acknowledging that there may be instances where an Article IV agreement need not cover the entire range of a species. See Resolution 3.5 of COP 3, Geneva 1991.

[8] Data as of 28 May 2004, see <http://www.wcmc.org.uk/cms/pdf/en/party%20list/Partylist_eng.pdf>

[9] Data as of 28 May 2004, see <http://www.wcmc.org.uk/cms/pdf/participants_ofCMSagreements.pdf>

or Signatory States, as the case may be. Appended Plans are intended as 'living documents', that is they are to be reviewed and refined over time to reflect best practice management and to guide conservation measures in regard to the listed species. There presently exist two explicit marine turtle accords under CMS, one covering the Indian Ocean and Southeast Asia and the other the west coast of Africa.[10]

At both the 1999 and 2002 Conference of Parties, explicit attention was paid to the problem posed to migratory marine wildlife by incidental capture in fisheries. Resolution 6.2 (1999) on bycatch made particular reference to marine turtles, and reaffirmed the Parties' obligation to reduce the incidental capture of migratory species, calling for strengthened bycatch mitigation measures.[11] At the 2002 COP, Recommendation 7.2 was essentially critical of the lack of implementation of the previous 1999 resolution.[12] It referred to bycatch as 'one of the major causes of mortality to marine migratory species' and made specific recommendations to Parties for actions.[13] Also passed at the 2002 COP was Recommendation 7.6 on Improving the Conservation Status of the Leatherback Turtle.[14] The impact of incidental take in longline fisheries is considered, and the action component of the Recommendation focuses on nesting beach activities and general population enhancement together with biodiveristy conservation.

Indian Ocean and Southeast Asia (IOSEA)

On 14 July 2000, the Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and Southeast Asia (IOSEA)[15] was adopted in Cherating, Malaysia. On 23 June 2001, the Conservation and Management Plan of the IOSEA was concluded, and eight States then signed the agreement—Australia, Comores, Iran, Myanmar, Philippines, Tanzania, Sri Lanka and USA. The IOSEA came into effect on 1 September 2001, and at the time of writing, eleven additional States have signed the MoU—Bangladesh, Cambodia, Kenya, Madagascar, Mauritius, Oman, Pakistan, Seychelles, Thailand, the United Kingdom and Vietnam—bringing the total to 19, out of a potential membership of more than 40 States, including India. As an MoU, the IOSEA is a non-binding agreement, though it

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[10] At the most recent CMS Conference of Parties in 2002, it was also noted that a third marine turtle agreement, in relation to the Pacific Region, was under consideration.

[11] 'Resolution 6.2: on by-catch' adopted by the Sixth Meeting of the Conference of Parties to CMS, Cape Town, South Africa, 10–16 November 1999. Available at url: http://www.wcmc.org.uk/cms

[12] See 'Recommendation 7.2: Implementation of Resolution 6.2 on By-catch' adopted by the Seventh Meeting of the Conference of Parties to CMS, Bonn, Germany, 18–24 September 2002.

[13] Actions included: the description of threats, their impacts and the development and implementation of mitigation measures; the possible use of bycatch observers in national waters out to 200 nm; the encouragement of research proposals on areas not covered by CMS; and ways to reduce loss and discarding of nets.

[14] See 'Recommendation 7.6: Improving the Conservation Status of the Leatherback Turtle (*Dermochelys coriacea*)' adopted by the Seventh Meeting of the Conference of Parties to CMS, Bonn, Germany, 18–24 September 2002.

[15] See http://www.ioseaturtles.org

does contain a commitment to consider amending the instrument to make it a legally binding accord 'when appropriate' (Basic Principle 4). The MoU lists six of the seven species of marine turtles—only Kemp's ridley (*Lepidochelys kempii*) is not known from the region.

The Conservation and Management Plan (CMP) was developed with input from representatives from countries and organisations around the region. It is an ambitious document, composed of 24 programmes and 105 specific actions that are grouped into broad objectives including reducing threats; conserving and rehabilitating habitats; collecting and exchanging scientific data; increasing public awareness and participation and developing alternative livelihood opportunities; promoting regional cooperation and capacity building; and obtaining resources and developing coordination for implementation. Responding to ever-increasing evidence of the risks caused by modern fishing activities, bycatch is specifically addressed in both the MoU itself and in the CMP. Activities listed in the CMP that relate specifically to fisheries bycatch include:

- the identification and documentation of threats, including determination of those marine turtle populations affected by incidental capture;
- reduction, to the greatest extent practicable, of incidental capture and mortality of marine turtles in the course of fishing activities;
- the development and use of devices and techniques to minimise incidental capture of marine turtles in fisheries, such as gear modification and seasonal and spatial closures;
- the development of monitoring, control and surveillance procedures and training programs to promote the implementation of bycatch mitigation measures;
- information exchange and technical assistance;
- liaison and coordination with fisheries industries and management bodies with responsibilities in national waters and on the high seas; and
- the development and implementation of net retention and recycling schemes to minimise marine debris and ghost fishing.

In this respect, it is important to point out that the MoU specifically calls on each Signatory State to implement the agreement not only in the land and marine areas in the Region under its jurisdiction, but also on vessels under its flag (Basic Principle 2, c). Also, the Preamble states that it is desirable to involve not only all States in the Region, but other States whose nationals or vessels conduct activities that may affect marine turtles in the Region. Hence, there is a clear recognition of the importance of activities on the high seas, by States from both inside and outside the Region, including distant water fishing nations (DWFN).

The IOSEA covers a major and significant region with the potential to involve an impressive diversity of nations, cultures, languages, religions, and traditions, not to mention the variety of marine and coastal environments and activities. Hence, it is envisaged that groupings of Signatory States, as 'subregional' units, will be more effective in implementing the MoU and CMP. The composition and functioning of these subregional units is still to be determined. Because marine turtle biologists are conscious of the fact that the reptiles migrate and disperse widely throughout the Indian Ocean

and Southeast Asian region, often transiting between political subregions, there has also been a call for 'flexibility' in the establishment of administrative subregions.

At the first Meeting of the Signatory States, 22–23 January 2003 in Bangkok, terms of reference for an Advisory Committee, as stipulated by the MoU (Action 6) were adopted, and a committee of six members, out of a possible total of 10, was appointed (since then, one has died and one has resigned). A Secretariat (as stipulated by the MoU, Action 8) has now been established in the UNEP/Regional Office for Asia and the Pacific in Bangkok. Voluntary funding from Australia, France, the UK, US, UNEP, and CMS has essentially guaranteed operational costs through 2005. However, there is as yet limited funding for specialised projects and none for supporting the Advisory Committee, other than to attend the Meeting of the Signatory States.

Atlantic Coast of Africa

The Memorandum of Understanding Concerning Conservation Measures for Marine Turtles of the Atlantic Coast of Africa was developed to improve the conservation status of marine turtles and the habitats on which they depend. It was adopted at the first inter-governmental meeting in May 1999 and became effective on 1 July 1999 (Hykle 2002), and as of the time of writing it has been signed by 19 countries—Angola, Benin, Cameroon, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Equatorial Guinea, Gabon, Gambia, Ghana, Guinea, Guinea Bissau, Mauritania, Morocco, Nigeria, Sao Tome and Principe, Senegal, Sierra Leone and Togo—with a potential membership of 25 African States, extending from the Straits of Gibraltar to the Cape of Good Hope. Although not clearly stated when the MoU was adopted in May 1999 (and indeed, the governments listed at the beginning of the MoU includes only African nations), the Signatory States agreed in their second inter-governmental meeting (and the First Meeting of the Signatory States) two years later, in May 2002, that other nations with jurisdiction over land (islands) and waters in the region (e.g. Portugal, Spain, and the UK), as well as others (e.g. France) should also be eligible to sign the agreement. Representatives from France and Portugal at the second meeting indicated that their governments might sign within the year, although this has yet to happen.

The MoU is concerned with six species of marine turtles, excluding the flatback (*Natator depressus*) marine turtle which is known only in Australia and Papua New Guinea. The West African MoU, more so than other CMS Agreements, is a framework document, with the actual measures to conserve marine turtles and their habits contained in the Conservation Plan. The MoU does stipulate a range of actions to be attended to in the Conservation Plan, including:

- the establishment of strict conservation measures that protect turtles at all stages of their life cycle;
- review and revision of national legislation;
- ratification or accession to international conventions relevant to marine turtle conservation; and
- facilitation of the expeditious exchange of relevant information.

The Conservation Plan, considered as part of the MoU, was approved in May 2002 at the First Meeting of Signatory States held at UNEP headquarters in Nairobi, Kenya. The Nairobi Declaration issued from this meeting expressed concern about the largely undocumented impact of industrial fishing operations, in particular those of third countries operating in West African waters used by marine turtles for reproduction, feeding, development and migration.

The Conservation Plan has five broad objectives, each of which is composed of specific programmes and under which there are even more detailed activities, with a total of 22 programmes and 65 activities, making this an ambitious plan. For example, the second objective, to reduce direct and indirect causes of marine turtle mortality, includes a programme to 'reduce and minimise the effects of fisheries bycatch in coastal waters', with four corresponding activities including the placement of observers on fishing vessels to gather data; the establishment and enforcement of protocols for ship-owners relating to the incidental take, onboard consumption, and trafficking of turtles as well as the maintenance of records; development in cooperation with the fishing industry of bycatch mitigation measures; and development in collaboration with trawl fisher folk of a protocol for marine turtle treatment and release. The remaining four objectives are:

- ✻ improve basic knowledge of species, threats, and migration routes;
- ✻ integrate local communities and others into conservation efforts;
- ✻ enhance cooperation and coordination within and among Range States; and
- ✻ secure funding to initiate and continue marine turtle conservation programmes.

While the Plan puts significant emphasis on improving basic knowledge, it also gives considerable importance to integrating various stakeholders in conservation activities, including inhabitants of coastal communities, fisher folk, boat-owners and others. The Plan is, at least in theory, well conceived. The question remains as to whether governments and societies not only with very limited fiscal resources, but also enmeshed in a history of civil unrest and intense political and economic instability, will be able to adequately implement this Plan. In the end, the question boils down to the relative value that the respective society will place on marine turtle conservation (Frazer 2003).

CONVENTION FOR INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA (CITES)

The Convention for International Trade in Endangered Species of Wild Fauna and Flora (CITES) was adopted in 1973, and it entered into force in 1975. Until recently, it has had limited direct relevance to most marine species,[16] concentrating instead on terrestrial plants and animals. Nonetheless, several marine turtle issues have been considered under this global treaty.

[16] Although all cetaceans, and certain other marine species, have been listed for years, CITES has actively avoided the consideration of numerous marine species, including large cetaceans which fall under the jurisdiction of the International Whaling Commission, and to date has had a very limited role in the regulation of trade in fish species.

A species can be listed under CITES in one of three appendices, which vary in the degree to which they regulate international trade (for more details see Wold 2002, <http://www.cites.org>). Appendix I lists taxa that are, or may be, threatened with extinction by international trade, and commercial trade in these species is prohibited, with the exemption of specimens that comply with certain CITES criteria. Relevant to marine turtles, is the exception provided for captive-bred or artificially propagated individuals (Wold 2002). Appendix II includes those species not necessarily threatened with extinction but that may become so in the absence of trade restrictions. These species may be traded subject to certain conditions being met, including an export permit, scientific approval that the trade will not be detrimental to the species, and certification that the individuals were legally obtained. Species listed on Appendix I may be legally traded when the population in question is downlisted to Appendix II, and the animals are raised in a CITES-approved ranching programme.

Appendix III functions somewhat differently as it applies to situations where individual Parties need assistance in monitoring and controlling international trade in species taken from within their own jurisdiction; hence, listing triggers requirements for documentation of imports and exports of the species in question by Parties involved in the trade. Unlike Appendices I and II, where at least two-thirds of the Parties must agree to adding or removing a species, an Appendix III listing can be established by a single Party, without any vote by the COP. It should be noted that the three CITES appendices, either separately or collectively, are not a comprehensive list of threatened and endangered species. Issues of controversy in CITES include split listings, where certain populations of the same species are listed on different appendices. Species identification and enforcement of CITES regulations are complex enough to start with, but when extra challenges to determine the origin of individuals of the same species are put before customs agents—often working with a minimum of support and training to process enormous volumes of international trade and paper work—there is a good chance that a significant amount of illegal trade will occur (Jenkins 2000).

All seven species of marine turtle are listed on CITES Appendix I, and there are no CITES-approved captive-rearing or ranching programmes that would allow for exceptions to the total ban on international trade. The only other exception would involve a Party to CITES taking a 'reservation' on a certain Appendix I species, so that it could conduct international trade with non-Parties to CITES or other Parties with similar reservations. For example, when Japan acceded to CITES in 1980 they took a reservation on hawksbill turtles and imported tortoiseshell from Cuba (not a Party to CITES at the time), until 1994 when the reservation was removed by the Government of Japan. Hence, recent proposals to allow for legal international trade in hawksbill products have resulted in intense discussion and debate. At CITES' Tenth COP in Zimbabwe, in 1997, the Government of Cuba, supported by the Government of Japan, submitted a proposal to 'downlist' hawksbill turtles taken in Cuban waters. The purposal was to reopen legal commercial trade in tortoiseshell (known also as *bekko* in Japan) between Cuba and Japan by exporting a stockpile as well as the annual products from a controlled take. The justifications for proposing a split listing included arguments that the hawksbills in

Cuban waters are a separate population (in order to justify a split listing in CITES it is necessary to show that the downlisted population is 'geographically separate'). Other arguments put forward to support the proposal included—the rate of exploitation would be reduced to about a tenth of what it had been several years earlier, the legally obtained product would be easily identified, and the fishery was required by traditional communities (the last three points are not specifically required by CITES, but can be used to gain political support for a proposal). In response, it was argued that multiple sources of evidence showed that hawksbills dispersed and migrated widely throughout the Caribbean, and that the turtles were a shared resource—not the exclusive property of any one State. There were also many questions and doubts about the ability to distinguish tortoiseshell captured in Cuba from black market products taken in scores of other countries. Although all States are susceptible to illegal trade, Japan's relative wealth and its high demand for *bekko*, makes its market of particular concern in this case. To be sure, recent information indicates that other black market wildlife products have entered Japan, including reptile skins, tiger parts, and elephant ivory. Although the Government of Japan has made efforts to remedy illegal imports, there are a number of reported weaknesses that still need to be fixed, and it is these that cause concerns in regard to reopening the legal marine turtle and *bekko* trade (Nowell 2000, Kiyono 2002, Hutton and Webb 2003).

As an alternative to the proposal for supporting legal international trade with an annual take, the Cuban government also submitted a proposal at COP 10 that focussed on the export of ranched hawksbills. Discussions, debates, and lobbying on these two proposals were extremely intense, and although the ranching proposal received a majority of votes, it did not have the two-thirds required for approval. Once again at the Eleventh COP in Nairobi, in 2000, Cuba presented a proposal to downlist hawksbills. This time they also used a two-pronged approach—the governments of Cuba and Dominica proposed the sale of a stockpile as well as an annual export quota from a legal fishery; in a separate proposal the Government of Cuba alone proposed just the sale of its stockpile. Again, these proposals were the centre of intense debate, and although there were a majority of votes in favour of the sale of the stockpile, the necessary two-thirds majority was not obtained. Prior to the Twelfth COP, in 2002, Cuba had submitted a downlisting proposal once again, but shortly before the meeting, this was withdrawn. (It is said that several Third World countries, including Kenya, requested Cuba to withdraw the proposal.)

At the Twelfth COP, the Government of the United Kingdom submitted a proposal on behalf of the Cayman Islands (a British Overseas Territory) to have the Cayman Turtle Farm approved, so that farm-reared turtles and their products could legally enter the international market. After intense debate it was admitted by the UK authorities that there were legal anomalies, as well as a number of objections from other Caribbean States on conservation grounds, and the proposal was withdrawn.

In both these cases the issue at hand is not simply the merits or otherwise of resuming legal trade in marine turtles and their products from the Caribbean islands. Also at issue are several policy and management tenets that have much wider and deeper implications. For the proponents of 'free trade' and 'sustainable use' it is essential that the commerce

be both legal and profitable. There are also arguments about promoting economic incentives through exploitation and commerce in species as a way to encourage stakeholders to conserve them (e.g. Campbell et al 2002). On the other side, there are complex questions about the effects of opening the global market to legal commerce in products that have a long history of overexploitation and illegal dealings, often founded on exploitation and commercial ventures driven by maximising profits, despite environmental and social problems. To be responsible, and not just consistent with CITES regulations, international commerce in a species needs to occur such that social and environmental concerns do not pay the costs of maximising trade profits. Where the Parties to CITES feel that international trade cannot be conducted without endangering the species involved, based on biological and trade criteria (be it due to socio-economic, political, biological or ecological imperatives), the mandate is to prohibit trade in the item under consideration. There are no simple answers to the questions poised by these complex issues, and in the end the decisions will depend on the system of values being used (Frazer 2003). To a great extent the issue depends on whether or not the economics of a society can be evaluated adequately in terms of only monetary value. Because CITES is concerned primarily with the regulation of trade, the primary role of financial dealings—not biological criteria—should not be underestimated. It must also be remembered however, that the CITES accord itself sits within the UNEP family, so the treaty does have a mandate to deal with environmental issues; furthermore, because it is concerned with trade in endangered wild species, many Parties give environment/conservation departments the role of lead agency in their respective CITES delegation.

As mentioned above, CITES has to date paid little direct attention to most marine species (whales are a notable exception). Attempts to list marine fishes during the last few COPs have met with intense opposition, particularly by distant water fishing nations, notably Japan. They have argued that CITES is inappropriate for regulating trade in marine fishes. At the 2002 UN Food and Agriculture Organisation (FAO) Committee on Fisheries trade subcommittee (COFI:FT) meeting in Bremen, Germany, the issue of CITES and marine species was a primary agenda item. One outcome of this meeting, at which the CITES secretariat was represented, is that a Memorandum of Understanding between CITES and COFI is being negotiated; there is a general agreement that there needs to be consultation between CITES and FAO with regard to the listing of marine fishes. Under consideration is a mechanism proposed by Japan whereby deference would be given to the FAO in situations where marine species are nominated for listing on a CITES appendix. The effect of this proposed arrangement, particularly on species that are caught as bycatch (for example marine turtles), is yet to be seen. Would species listed as endangered on CITES appendices, but affected by incidental capture, be the concern of CITES or of FAO? Moreover, it is unclear how the arrangement proposed by Japan would relate to the bycatch of a target species that is itself listed, or proposed for listing, on a CITES appendix. For example, should a proposal for listing swordfish receive greater support because listed marine turtles are also caught in longline fishing operations, or is this secondary impact irrelevant to the primary nomination?

For biological reasons one might hope that it would; however, CITES has no clear role in relation to exploitation techniques except as they may relate to the conservation status of the species being subjected to trade. To date attempts to have CITES consider issues such as mortality during capture have been rejected as issues that are relevant only to the process of listing. Also uncertain in regard to the Japanese proposal, is the process for listing a species that is caught as bycatch rather than as a primary target species, but nonetheless is commercially traded. To date, CITES has not addressed the problems of bycatch—its central concern is whether or not trade itself is a threat to the traded species. It is important to note that CITES only has a mandate to regulate international trade, and this includes only situations where the item in question crosses international borders, or it is introduced from the high seas, and rules for this last condition have yet to be worked out and accepted by CITES Parties. FAO, in contrast, has no jurisdiction to regulate cross-border trade, so in effect the two instruments could compliment one and other. The arrangement between CITES and COFI is expected to take several years to develop. To date, several countries (led by Japan) have maintained an uncompromising position, and the process has advanced very little.

Other general issues of uncertainty and/or conflict in this arrangement include the implications to species listed on a CITES appendix when a trade exemption is allowed for a certain population or subset of specimens that have been captive-bred, artificially propagated, or ranched, and the subsequent complications of correctly identifying those specimens that are subject to legal trade and those that are not—even though they are the same species. Also of concern is the uncertainty of the meaning and application of 'introduction from the sea', which in theory gives CITES a mandate to regulate trade in specimens of species listed on Appendices I or II that have been captured outside of a State's waters. Marine species taken from beyond the jurisdiction of States are deemed to be in international trade and invoke restrictions similar to those involving the more common forms of international trade, as described above. The actual limit of national jurisdiction remains, however, somewhat controversial, with some countries seeming to argue that this begins 200 nautical miles from shore, at the edge of the EEZ, and others defining the limit at the expiration of the 12 nm territorial sea.[17] Another CITES requirement further complicates the listing of species from the high seas, whether they are bycatch or target species. Before nominating a species to be listed, CITES Parties must consult with all other Range States. The concept of Range, as it applies under CITES to date, includes only those States in whose territory a species ventures. Thus, a species could be nominated for a CITES listing without consultation with States that operate in a fishery on the high seas or in the EEZ of another State, but that do not have the species within their respective jurisdiction. This explains one of the key reasons for recent FAO (COFI) involvement in the CITES listing process in relation to marine fishes—to ensure that fishing or flag States, as well as any relevant RFMOs, are consulted as well as traditional Range States. The implications of such an arrangement for bycaught species remains to even be considered.

[17] For details on the concepts of territorial sea and EEZ, see the Law of the Sea Convention Part II and Part V respectively. For a detailed analysis of the evolution of these concepts see Oda 1989.

While CITES is a global treaty, with tremendous political importance and power, it is fundamental to understand that this convention has limited application to conservation. The mandate of CITES is to regulate international trade in wild caught endangered species—it has no legal provisions on domestic take or trade, habitat protection, monitoring programmes, or many other activities which are widely recognised as fundamental to conservation. The recognition and importance of CITES derives from the fact that it deals with commerce. Nonetheless, in contrast to dedicated environmental accords, CITES has a means of being enforced, as the activities it deals with extend beyond any single State's jurisdiction. In many situations, trade has the potential to generate considerable income, and as it may provide commercial opportunities it is attractive to be a Party thereto; hence, CITES has a greater chance than most other environmental treaties of receiving sufficient appropriations for administration. Furthermore, CITES can influence basic conservation issues; for example, the trade review process has led to changes in domestic laws and management practices in some Parties as they strive to comply with CITES requirements and avoid claims that trade is not being conducted in a sustainable manner, with the consequent threat of having a species transferred from Appendix II to Appendix I. Quota systems approved by CITES may also affect domestic conservation programmes.

Conventions Dealing with Indirect Impacts on Marine Turtles

THE LAW OF THE SEA CONVENTION (LOSC)

The Law of the Sea Convention (LOSC) concluded negotiation in 1982, and entered into force in 1994. Given that this single treaty regulates human activities over about two-thirds of the surface of the planet, much of which is utilised by marine turtles at one stage or another in their life cycle, the LOSC has considerable relevance to the conservation of marine turtles and their habitats. Part XII of the LOSC concerns the Protection and Preservation of the Marine Environment. Comprised of Articles 192 through 237, it includes sections on Global and Regional Cooperation; Technical Assistance; Monitoring and Environmental Assessment; International Rules and National Legislation to Prevent, Reduce and Control Pollution of the Marine Environment; Enforcement; Safeguards; Responsibility and Liability; Sovereign Immunity; and Obligations under other Conventions on the Protection and Preservation of the Marine Environment (see Edeson et al 2001).

The LOSC also refers specifically to the impact of fishing on associated and dependent species. Part V of the LOSC relates to the EEZ and grants sovereign rights to coastal States for the purpose of exploration, exploitation, conservation and management of natural resources within this zone. Articles 61–68 relate to living marine resources in the EEZ. Article 61 empowers States to determine the level of take of living resources in their respective EEZs, and to ensure proper conservation and management measures in relation thereto. In terms of bycatch, sub-paragraph four of Article 61 specifically requires that:

'... the coastal State shall take into consideration the effects on species associated with,

or dependent upon, harvested species with a view to maintaining or restoring populations of such associated or dependent species above levels at which their reproduction may become seriously threatened.'

The LOSC then requires foreign States to ensure that their flag vessels fishing within another country's EEZ comply with any conservation measures, terms and conditions that are the laws and regulations of that coastal State (Article 62, 4). In this regard the coastal State is empowered to take measures so as to achieve bycatch reduction in fisheries as well as require fishing activities to be monitored for bycatch. Such laws and regulations include, *inter alia*:

- the determination of species that may be caught (either as target or bycatch) and the establishment of catch quotas (for example, quotas on a stock or species basis, or vessel quotas, or seasonal or temporal catch limits) (Article 62, 4, b);
- regulating seasons and areas open for fishing, and the size, types and amount of gear, or size, types and number of vessels (Article 62, 4, c);
- emplacement of restrictions on the age and size of species taken (Article 62, 4, d)
- requirements for and the use of observers or trainees on board fishing vessels (Article 62, 4, g); and
- the landing of all or part of the catch by foreign vessels in ports of the coastal State (Article 62, 4, h).

Part VII of the LOSC deals with the High Seas, and the second section of this Part is on Conservation and Management of Living Resources on the High Seas. It imposes a duty to take measures, or cooperate as may be necessary, for the conservation of living resources on the high seas (Articles 117 and 118). Although the emphasis is again on fisheries, the impact of such activities on associated and dependent species must once again be taken into account, 'with a view to maintaining or restoring populations of such associated or dependent species above levels at which their reproduction may become seriously threatened' (Article 119, 1, b). This injunction requires nations to assess effects of fishing on such species using the best scientific evidence available, and where data suggests that fishing operations may impact upon a species such that its level of reproductive abundance would become severely threatened or depleted, the dependent or associated species and impact should be considered in management decisions (Article 119, 1 and 2).

Special status is provided to marine mammals in EEZs (Article 65) and on the high seas (Article 120). A coastal State or appropriate international organisation is authorised to prohibit, limit or regulate the exploitation of marine mammals (with an emphasis on cetaceans).[18] This provision allows Parties to the LOSC to give deference to other accords, such as the International Whaling Commission, and apply stricter measures than those detailed in the LOSC. Although these provisions relate specifically to marine mammals,

[18] This refers in particular to Article 65 in Part V on EEZs and Article 120 in Part VII on the high seas, such that measures may be more strict than is generally provided by the LOSC.

they could well have extended to other forms of marine wildlife—such as marine turtles—had the LOSC been written in the last decade.

The LOSC stipulates that coastal States and relevant DWFNs shall seek to agree on conservation measures applicable beyond the EEZ through either direct negotiations or via a regional authority (Articles 63, 2; 117–119). Importantly however, nothing in the LOSC authorises one State to take action on the high seas to enforce a conservation obligation of another fishing State (Panel on the Law of Ocean Uses 1990).

Nonetheless, there are clear 'obligations' under international law for States to regulate bycatch and ecosystem disturbance, factors that are increasingly being recognised as major threats to marine turtles. In 1995 the United Nations General Assembly (UNGA) passed the Resolution on Fisheries By-catch and Discards and Their Impact on the Sustainable Use of the World's Living Marine Resources.[19] This invites the FAO to formulate provisions for bycatch in its international Code of Conduct for Responsible Fisheries, and invites the UN Conference on Straddling and Highly Migratory Fish Stocks to elaborate measures on fisheries bycatch and discard provisions.

AGREEMENT ON STRADDLING FISH STOCKS AND HIGHLY MIGRATORY FISH STOCKS

A series of meetings between 1993 and 1994 concluded with a report to the 48th UNGA, which resulted in the September 1995 Agreement Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (Fish Stocks Agreement or FSA).[20] As in the LOSC, included in this new agreement was explicit recognition of the need to minimise the bycatch of fish and non-fish species (Article 5(f)). Clearly, although marine turtles are not specifically mentioned, they are included under the concept of 'non-fish species,' so bycatch mitigation measures in the FSA are directly relevant to reducing marine turtle mortality.

The objective of the FSA is to ensure the long-term conservation and sustainable use of straddling fish stocks and highly migratory fish stocks through effective implementation of the relevant provisions of the LOSC. Article 5, General principles, requires States to, *inter alia*:

'...(d) assess the impacts of fishing, other human activities and environmental factors on target stocks and species belonging to the same ecosystem or associated with or dependent upon the target stocks;

(e) adopt, where necessary, conservation and management measures for species belonging to the same ecosystem or associated with or dependent upon the target

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[19] A/RES/49/118, February 1995.

[20] Agreement [for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982] Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, 34 I.L.M. 1542 (1995) (hereinafter The Implementing Agreement or UNIA). For discussion see D Anderson, 'The Straddling Stocks Agreement of 1995: An Initial Assessment,' (1996). *International and Comparative Law Quarterly* 45: 463.

stocks, with a view to maintaining or restoring populations of such species above levels at which their reproduction may become seriously threatened;

(f) minimise pollution, waste, discards, catch by lost or abandoned gear, catch of non-target species, both fish and non-fish species, (hereinafter referred to as non-target species) and impacts on associated or dependent species, in particular endangered species, through measures including, to the extent practicable, the development and use of selective, environmentally safe and cost-effective fishing gear and techniques;

(g) protect biodiversity in the marine environment…'

Beyond these general objectives, the FSA imposes certain obligations on Parties in regard to bycatch. State Parties must:

* take into account the precautionary principle and uncertainties relating to data used in the development of conservation and management measures (Article 6);
* establish/develop data collection and research programmes for assessing impacts of fishing on non-target (fish and non-fish) species (Article 6,3,d);
* establish conservation and management measures for habitats of special concern (Article 6,3,d); and
* enhance monitoring of populations of target and non-target species that are of concern and review their management and conservation status, and revise these measures regularly in the light of new information (Article 6,5).

There also exists a requirement for coastal States and DWFNs to seek cooperation and compatibility in measures for the conservation and utilisation of highly migratory and straddling fish stocks (Articles 7, 8 and 20). In addition, Parties are obliged to collect and share all relevant and up-to-date fisheries data (Article 14). Annex I of the FSA provides standard requirements for the collection and sharing of data. Data that can be collected includes information on vessel position, catch and yield statistics, composition of catch, and fishing gear description.

Flagged vessels of Parties to the FSA are obliged to have their catch of target and non-target species verified through measures such as observer programmes or inspection schemes (Article 18). The fishing activities of flagged vessels must be regulated to ensure compliance with subregional, regional or global measures. Specific reference is made to those measures concerning the minimisation of bycatch or non-target species.

CODE OF CONDUCT FOR RESPONSIBLE FISHERIES

In addition to the Fish Stocks Agreement, and in part recognising the time that may be taken for this to come into force, a Code of Conduct for Responsible Fisheries was negotiated under the auspices of the FAO. This accord has what are perhaps the most specific bycatch provisions of all international agreements. It is, however, non-binding in nature, working on strict reporting mechanisms to pursue compliance goals. The strength in this is the relatively specific measures contained therein and the fact that it applies not only to State actors, but also to RFMOs and the fishing industry.

The FAO Code of Conduct for Responsible Fisheries was finalised and adopted by consensus at the Twenty-eighth Session of the FAO Conference on 31 October 1995. The Code considers the impacts of fisheries on marine and aquatic environments, as well as on a variety of stakeholders; and several of its articles relate specifically to bycatch issues.

The general principles of the Code (Article 6) suggest that fisheries management measures should ensure the protection of not only target species but also of non-target, associated or dependent species. States should ensure the use of selective fishing gear and minimise waste, discards and catch of non-target species (fish and non-fish), and to reduce the impacts of fisheries on species associated with, or dependent upon, the target species. The first paragraph (6.1) in this section clearly states: 'The right to fish carries with it the obligation to do so in a responsible manner so as to ensure effective conservation and management of the living aquatic resources.'

More specifically, paragraphs 6.2 and 6.6 read:

Paragraph 6.2: '...Management measures should not only ensure the conservation of target species but also of species belonging to the same ecosystem or associated ecosystems dependent upon the target species.'

Paragraph 6.6: 'Selective and environmentally safe fishing gear and practices should be further developed and applied, to the extent practicable, in order to maintain biodiversity and to conserve the population structure and aquatic ecosystems and protect fish quality. Where proper selective and environmentally safe fishing gear and practices exist, they should be recognised and accorded a priority in establishing conservation and management measures for fisheries. States and users of aquatic ecosystems should minimise waste, catch of non-target species, both fish and non-fish species, and impacts on associated or dependent species.'

Article 7, on fisheries management, requires States to implement appropriate measures to minimise various forms of bycatch, including 'ghost-fishing' (Paragraph 7.2.2(g)). This mandates minimisation of 'pollution, waste, discards, catch by lost or abandoned gear, catch of non-target species, both fish and non-fish species, and impacts on associated or dependent species...through measures including, to the extent practicable, the development and use of selective, environmentally safe and cost-effective fishing gear and techniques.' States are urged to implement a precautionary approach in conserving, managing and exploiting fisheries resources (Paragraph 7.5). Precaution is defined as taking 'into account, *inter alia*, uncertainties relating to the size and productivity of the stocks, reference points, stock condition in relation to such reference points, levels and distribution of fishing mortality and the impact of fishing activities, ... on non-target and associated or dependent species, as well as environmental and socio-economic conditions' (Paragraph 7.5.2).

Paragraph 7.6.9 is the most explicit with regard to managers' responsibilities in relation to associated and dependent species. It begins establishing that:

'States should take appropriate measures to minimise waste, discards, catch by lost or

abandoned gear, catch of non-target species, both fish and non-fish species, and negative impacts on associated or dependent species, in particular endangered species.'

Where appropriate, such provisions may include technical measures related to fish size, mesh size or gear, discards, closed seasons and areas and zones reserved for selected fisheries, particularly artisanal fisheries. Such measures should be applied, where appropriate, to protect juveniles and spawners. States and subregional or regional fisheries management organisations and arrangements should promote, to the extent practicable, the development and use of selective, environmentally safe and cost effective gear and techniques. Paragraph 7.6.9 then requires States and fisheries management authorities to promote the development and use of selective, environmentally safe gear, as well as other technical measures of bycatch reduction, including the establishment of exclusion zones or closed seasons and gear modifications to prevent smaller species or individuals being caught. Both States and RFMOs are encouraged to promote and research gear selectivity (Paragraph 7.4). States are also required to improve their understanding of the status of fisheries by collecting appropriate data and exchanging information with all relevant groups.

Article 8 concerns fishing operations themselves. In Paragraph 8.5.1 it holds that, to the extent practicable, States should require that fishing gear, methods and practices 'are sufficiently selective so as to minimise waste, discards, catch of non-target species, both fish and non-fish species, and impacts on associated or dependent species.' To give effect, it mandates that 'fishers should cooperate in the development of selective fishing gear and methods. States should ensure that information on new developments and requirements is made available to all fishers.'

It is important to emphasise that the Code of Conduct refers not only to fishing activities and data, but also to socio-economic information, embracing a wide variety of stakeholders; it is relevant to both artisanal and industrialised fisheries, as well as to fisher folk and many other people and organisations involved in fishing activities. Clearly, although it is only a voluntary code, the measures it promotes are highly relevant to the conservation of marine turtles and their habitats. In this respect it is important to mention that the 17th Annual Symposium on Sea Turtle Biology and Conservation passed a resolution to support the FAO Code of Conduct (Anon 1997).

By and large the Code of Conduct has been implemented in regard to specific issues through the creation of individual subsidiary International Plans of Action (IPOA). Two IPOAs have been created specifically for marine wildlife: shark management and conservation, and seabird longline bycatch. Though initially considered to be useful options, a variety of shortfalls have been recognised in the IPOAs (Bache 2003). Consequently, the creation of additional plans has not been a high priority for FAO member States. However, at the most recent COFI meeting held in February 2003, a proposal was accepted for an Expert Consultation on marine turtles to be held, prompted by concern over the incidental capture of several species of marine turtles in longline fishing operations. Though not necessarily leading to the creation of an IPOA, the hosting of a consultation is often the first stage in such a process.

THE WORLD TRADE ORGANISATION (WTO)

The World Trade Organisation (WTO) was established in 1994, following agreement to the Final Act of the Uruguay Round of multilateral trade negotiations. These negotiations consolidated a number of elements of the multilateral trade system. The new regime incorporated the accords previously established under the General Agreement on Tariffs and Trade (GATT) of 1947, as well as creating some new elements. In regard to the WTO itself, a new preamble was added to the 1994 Marrakesh Agreement establishing the WTO, and making special reference to the environment. It mandated:

'That their relations in the field of trade and economic endeavour shall be conducted ... while allowing for the optimal use of the world's resources in accordance with the objective of sustainable development, seeking both, to protect and preserve the environment, and enhance the means for doing so in a manner consistent with their respective needs and concerns at different levels of economic development ...'

Trade-related conservation measures relevant to marine turtles and their habitats include:

- the regulation of fisheries products to promote sustainable harvesting;
- the regulation of foreign access to fisheries so as to implement sustainable fisheries requirements;
- the implementation of multilateral agreements that authorise the use of trade sanctions designed to promote sustainable fishing practices; and
- the use of labelling and certification to inform consumers about point of origin of the product and the environmental impacts of the relevant fishery, and thereby promote trade in 'eco-friendly' products.

To give an appreciation of the numerous and diverse political and legal steps that have been involved in the development, interpretation, and implementation of these measures, the following description of the WTO and associated trade measures, provides a certain amount of detail.

The international community's position on the use of multilateral and unilateral sanctions is complex and varied, as can be seen by a brief examination of trade measures in other international agreements.[21] Hence, the interaction of WTO agreements and other multilateral environmental agreements (MEAs) remains by and large unresolved.

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[21] The Fish Stocks Agreement, the FAO Code of Conduct and the Compliance Agreement all direct States to cooperate to ensure that non-Parties do not engage in activities that will undermine international or regional conservation and management measures. No specific examples are provided or limitations placed upon these provisions, however. The FAO International Plan of Action on Illegal, Unreported and Unregulated Fishing (IPOA-IUU) provides more explicit direction in regard to trade and fisheries interactions in a section devoted to market-related measures. Paragraphs 65–76 provide that all States are to take measures necessary to prevent IUU-caught fish from being imported into their territories and to ensure that IUU does not undermine regional or international conservation and management measures. These measures are suggested to include catch documentation schemes (CDSs) and import or export prohibitions. The IPOA-IUU specifically notes however that such measures are only to be used when all alternatives have been unsuccessful, and moreover, that unilateral market measures are to be avoided. Similarly in the environmental arena, Principle 12 of the UNCED Rio Declaration as well as 'mirror statements' elsewhere hold that 'unilateral actions to deal with environmental challenges outside the jurisdiction of the importing country should be avoided.'

This issue was raised for further consideration in the recently initiated Millennium, or Doha, round of trade negotiations. Progress has, however, been made in that the WTO subsidiary Committee on Trade and Environment has stated that for the purpose of its deliberations RFMOs fall within the category of MEAs.

Article XX of the GATT deals with those conditions that may be potentially acceptable for commercial discrimination on environmental grounds. Of relevance to fisheries are Article XX subsections (b) and (g), which read:

'Subject to the requirements that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting Party of measures: ...

(b) necessary to protect human, animal or plant life or health: ...

(g) relating to the conservation of exhaustible resources if such measures are made effective in conjunction with restrictions on domestic production or consumption.'

Two disputes that specifically consider the issue of marine wildlife bycatch have been heard under the multilateral trade regime. The first of these is the tuna–dolphin controversy, which preceded the creation of the WTO and was heard under the GATT.[22] Though raising a number of important issues, the structure of dispute settlement has since been altered, and the reasoning of the Dispute Settlement Body of the WTO has advanced significantly since this case.

The second case is the turtle–shrimp dispute. Although not explicitly authorising the use of trade embargoes, this case did in effect hold that so long as certain conditions were met, then in certain situations unilateral trade bans to further environmental goals would not be considered to be in contravention of the GATT.

The turtle–shrimp dispute began as a domestic issue in USA in the early 1980s, when the government introduced a requirement that domestic shrimpers use gear modifications (turtle excluder devices or TEDs) to reduce the mortality of marine turtles incidentally caught in shrimp trawls. In November 1989, the US Congress expanded

[22] The tuna–dolphin controversy began in January 1991 when Mexico lodged a suit with the GATT dispute resolution panel, protesting the US's embargo upon its tuna products. The embargo had been triggered by a US law banning tuna that had been caught by setting purse seines around dolphins, an activity that had been proven to result in a high bycatch of small cetaceans. Mexican purse seiners, among others, used this technique to find and catch large schoals of tuna, and Mexico claimed that the US embargoes were protectionist tariffs, and hence, violated the GATT.

In addition to holding that the US action was inconsistent with GATT obligations regarding quantitative trade restrictions, the panel also made a critical and significant distinction between the regulation of a product per se, and the regulation of the process by which the product emerged. The panel took a literal reading of the GATT and held that trade restrictions could be made only on the basis of a product qua product, and not in regard to the process by which the product was made. As such, tuna was tuna, regardless of the catch method, and the US ban on the Mexican product was in relation to the process rather than the product itself. The panel ruling meant that a product could be produced in any way, and the importing nation would not be permitted to regulate the product's importation unless the regulation focussed on some characteristic of the final product.

this policy to apply to all shrimp sold in the US market through the enactment of Section 609 Conservation of Sea Turtles: Importation of Shrimp. Section 609 placed two general requirements upon the US government. The first (subsection a) directed the Secretary of State, in consultation with the Secretary of Commerce, to negotiate with foreign nations, the development of agreements to promote marine turtle protection and conservation. The second, subsection b, notably paragraph (2), created a process, whereunder, nations desiring to import shrimp into the US must be certified by the US government. Following the passage of Section 609, a series of federal government regulations were passed, further defining which conditions are needed for certification, and consequent import of shrimp into the USA. Certification is available to:

- countries with a fishing environment that does not pose a threat of incidental takings of marine turtles because of:

  a) an absence of the species within its jurisdiction,

  b) exclusive use of shrimp catching methods which do not pose a threat to marine turtles, or

  c) whose commercial take occurs exclusively in areas where marine turtles do not occur; or

- nations that provide documentary evidence of the adoption of a regulatory program governing the bycatch of turtles in their shrimp trawling operations to the effect that:

  a) requirements to use turtle excluder devices (TEDs) are comparable in effectiveness to those in the US, that is at least a 97 per cent exclusion rate for turtles, and

  b) credible enforcement including monitoring, compliance and appropriate sanctions.[23]

Certification is carried out by the President (acting through the Secretary of State), and must be supported by credible evidence. Without certification of a comparable marine turtle conservation program in the shrimp exporting country, the Secretary of State is required to embargo the importation of shrimp and shrimp products from the relevant State(s).

With regard to the placement of embargoes on countries that did not meet US standards, the Department of State decided in 1991 to limit this provision to nations in the wider Caribbean region. Furthermore, these nations were granted three years to bring their regulations and TED programs up to US standards. Due to a domestic US legal decision in April 1996, the geographical limit to the US comparability requirement was removed, and Section 609 requirements became applicable to all States wishing to export shrimp to the United States.

The Association of Southeast Asian Nations (ASEAN), as well as India, Pakistan, Hong Kong, Korea, Australia, Mexico and Venezuela, protested to the WTO that the US' implementation of Section 609 contradicted the rules of the Organisation. Subsequently,

[23] 56 Fed. Reg. 1051 (1991); 58 Fed. Reg. 9015 (1993); and 61 Fed. Reg. 17342 (1996).

four States (India, Malaysia, Pakistan, and Thailand) requested consultations and, unsatisfied with the outcome of these, requested the establishment of a dispute settlement panel (DSP) under the WTO to consider the legality of Section 609 embargoes.

Findings were handed down by the DSP in mid-1998 wherein the US measures were found to be inconsistent with Article XI of the GATT, which maintains that member States shall not impose import restrictions. The US had claimed that the measures fell within Article XX, subsections (b) and (g), those that allow exceptions for environmental reasons. The Panel, however, dismissed these claims and insisted that the US measures were unjustifiable discrimination between nations, and hence, did not comply with the necessary conditions of the introductory sentence (chapeau) of Article XX.

The US lodged an appeal, the outcome of which was a report that largely rejected the Panel's original decision. Although the case again rested on the applicability of Article XX exceptions, the Appellate Body (AB) did not strike out the US unilateral embargo action on the same non-product related grounds as had been used in the tuna–dolphin decision.

In considering the appeal of the shrimp–turtle case, a two stage pre-established test was applied.[24] First, the AB evaluated a provisional justification for using Article XX by showing that subparagraph (b) or (g) applies. Second, it required a final justification by showing that the measure in question does not contravene the chapeau. In terms of the first, it required the State claiming an exception under XX(g) to demonstrate that:

- the resource it is aiming to protect is an 'exhaustible natural resource'. The Appellate Body concurred with expert evidence presented that marine turtles were endangered worldwide, and that shrimping was a major source of mortality. It found that marine turtles were exhaustible natural resources, thus acknowledging that exhaustible resources could be either living or non-living, and could be either renewable or non-renewable resources. (Prior to this, normal usage of Article XX(g) had led to the assumption that 'exhaustible resource' referred to non-living, non-renewable resources, an argument that the four countries disputing the US embargo had used repeatedly.)
- the relevant measure is 'related to' the conservation of an exhaustible natural resource. In this regard, the measure must not be incidentally or inadvertently aimed at such conservation. The law must be 'aimed primarily' at the conservation objectives and show 'a close relationship between means and ends'. This was interpreted as being satisfied if 'sufficient nexus' between the law and the environment of the enacting State could be demonstrated, a condition the Appellate Body held was being met in the case of Section 609.

Finally, in considering the applicability of a measure to Article XX subsections, the requirements of the chapeau to Article XX must also be met. To recall, the chapeau requires that measures not be applied in a manner which constitutes either:

- arbitrary or unjustifiable discrimination between countries; or
- a disguised restriction to trade.

[24] *United States – Gasoline* adopted 20 May 1996, TW/DS2/AB/R.

The report from the Appellate Body in the shrimp–turtle dispute offers the clearest analysis of this Article yet, and it defined a number of criteria for meeting these tests. It held that:

- a nation may not require another State to adopt a particular technology or measure, if other technologies or measures that have the same effect can be accepted;
- when applying measures to other countries, the regulating State(s) must take into account differences in the prevailing conditions in those countries;
- before enacting trade measures, nations should attempt to enter negotiations with the exporting State;
- foreign countries affected by trade measures should be allowed time (and all should be afforded the same length of time) to make adjustments; and
- due process, transparency, appeals procedures and other appropriate procedural safeguards must be available to foreign States or producers to review the application of the measure.

Although the Appellate Body upheld the validity of Section 609 as a conservation measure permissible under Article XX of the GATT, it found that the US's *application* of the law resulted in arbitrary and unjustified discrimination against the four complainant nations. The criticisms took issue with several aspects of the US law, including:

- the four complainant nations had received a significantly shorter time to reach compliance than had other (Caribbean) nations;
- insufficient account had been taken of the conditions in the different nations from which the shrimp export originated; and
- the US had made inadequate efforts to secure international agreements with the complainant nations.

Subsequent to the decision by the Appellate Body, the 132 member States of the WTO adopted the decision by consensus on 6 November 1998. The US was then provided 30 days to report back to the WTO as to what measures it would take to implement this decision. That is, although Section 609 did not have to be altered, the application of it had to be amended in order to meet the above conditions within an agreed 13-month implementation period.

The US submitted five status reports on its implementation of the Appellate Body decision. Its implementation scheme consisted of:

- confirmation, refinement and implementation of the allowance of shipment-by-shipment certification, hence permitting the import of shrimp caught by vessels employing bycatch reduction gear called turtle excluder devices or TEDs, even if the flag/coastal State was not certified;
- increased efforts in technology transfer to any government that so requests for the design, construction, installation and operation of TEDs; and
- active participation in negotiations for an Indian Ocean and Southeast Asian Memorandum of Understanding on the Conservation of Marine Turtles and their Habitats (IOSEA).

A submission lodged by Malaysia on 12 October 2000 under Dispute Settlement Understanding (DSU) Article 21.5 challenged the adequacy of the US's implementation of the Appellate Body findings. Malaysia claimed that the US's refusal to remove all import prohibitions from non-certified nations amounted to a failure to implement the WTO decision. A compliance panel was established, consisting of the original panel members. They found against Malaysia, which then appealed. Both the Panel and subsequent Appellate Body compliance reports found that Malaysia had failed to provide sufficient evidence to rebut a *prima facie* case that the US had complied with the original Appellate Body findings. They held broadly that the US had made serious efforts in good faith to reach a consensual multilateral arrangement for conserving marine turtles in the Southeast Asian and Indian Ocean regions, and as such would be provisionally permitted to keep embargoes in place so long as such efforts continued.

In sum, the relevance of this concise history of the WTO shrimp–turtle case shows that within the intricacies of international politics and law, and despite the overall priority that virtually all governments have on promoting commerce and trade, there are nonetheless mechanisms that can be used to support measures to reduce human impacts on marine turtles. While there still needs to be a thorough evaluation of how effective the implementation of Section 609 has been in conserving marine turtles, there is little doubt that the promotion of bycatch reduction in what was at the time labelled the most destructive from of modern fishing, the bottom trawl (Alverson et al 1994) is of tremendous importance to marine environments.

Bi- and Tri-lateral Memoranda

At the other extreme from an all-powerful multilateral trade organisation are non-binding agreements that involve two or three countries. An example of particular relevance to India resulted from The First ASEAN Symposium-Workshop on Marine Turtle Conservation, held in Manila, Philippines from 6–10 December, 1993. The participants at this regional meeting specifically recommended that mechanisms needed to be developed for promoting international cooperation in the conservation of marine turtles that are shared by different nations (Nacu et al 1994). As a follow up, on 31 May 1996, the Memorandum of Agreement between the Republic of Philippines and the Government of Malaysia on the Establishment of the Turtle Island Heritage Protected Area (TIHPA) was signed in Manila (see text in Frazier 2002: 157–161). Although this memorandum has little legal force, the spirit of the agreement is taken seriously by representatives of both countries. There have been several Joint Technical Working Group meetings, at which technical specialists from both countries have worked toward collaborative monitoring programmes and other common goals. Even when diplomatic relations between the two governments have been strained at the highest levels, the joint meetings have been conducted in a refreshing spirit of cooperation, which is also seen in joint field projects and training programmes. The TIHPA Memorandum established an important precedent by creating the world's first trans-frontier protected area for migratory marine turtles, and this was acknowledged with a J P Getty Conservation Prize.

Because the turtles (especially green turtles) that occur in the waters of TIHPA migrate and disperse outside the jurisdiction of both Malaysia and Philippines, there has been a recent effort to expand the Memorandum to include Indonesia, known to share important numbers of the same turtles that occur in TIHPA. Much of the background preparations for the signing of TIHPA, as well as the follow-up implementation, has been undertaken by non government organisations (NGOs). Likewise, the ongoing work to include Indonesia in the agreement is being spearheaded by local NGOs, showing that participation from outside of government can have tremendous importance in promoting and nurturing inter-governmental accords.

A similar venture was conducted in Central America, where an NGO that has been active for years spearheaded the Cooperative Agreement for the Conservation of Sea Turtles of the Caribbean Coast of Costa Rica, Nicaragua and Panama (Tri-Partite Agreement; see Frazier 2002: 179–188). This was signed by the Presidents of Costa Rica and Panama on 8 May 1998, but has still not been signed by Nicaragua.

Clearly, there are several opportunities for trans-frontier protected areas for marine turtles, in which India could play a leading role. Obvious examples centre on: Palk Bay and the Gulf of Mannar (India and Sri Lanka); the Gulf of Kachch (India and Pakistan); the Bay of Bengal (India and Bangladesh); the western atolls (India-Lakshadweep and Maldives); the Bay Islands (India-Andaman and Nicobar and Myanmar/Thailand/Malaysia/Indonesia). Just as with TIHPA and the Tri-Partite Agreement, government agencies as well as environmental groups, academic institutions, and other NGOs could make major contributions to these initiatives.

Conclusion

As can be seen from the above discussion, international instruments relevant to marine turtle conservation are much more varied than may be initially assumed. They range in a host of characteristics, from non-binding to legally enforceable treaties, and from subregional to global in scale. They also have an enormous scope in regard to subject matter and intention. Some are meant to regulate the international trade in endangered species to prevent these from becoming more threatened, but provide no explicit requirements for *in-* or *ex situ* conservation actions. Others regulate not turtles themselves, but rather fishing activities, and the inclusion of marine turtle provisions is in terms of associated and dependant or ecologically related species. In addition, over the last decade, specific marine turtle accords have emerged—in the western hemisphere, the Indian Ocean and Southeast Asia, and the west coast of Africa.

A host of other agreements not discussed in this chapter may have further impact on marine turtles and their habitats. These include prominent accords such as:

- the Jakarta Mandate to the Convention on Biological Diversity, which relates to the marine environment;
- the Convention on Wetlands of International Importance Especially as Waterfowl Habitat, (The Ramsar Convention);
- the Convention Concerning the Protection of the World Cultural and Natural

Heritage (World Heritage Convention) wherein the presence of particular species may be used to justify the world heritage value of an area; and

* The Cartagena Convention's[25] Protocol Concerning Specially Protected Areas and Wildlife (SPAW),[26]

In addition, less well-known or not obviously marine turtle-related conventions may have secondary or tertiary impacts on marine turtles and their habitats. These include:

* Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter;
* International Convention for the Prevention of Pollution from Ships (MARPOL);
* Convention on Nature Protection and Wild Life Preservation in the Western Hemisphere;
* Convention on the Physical Protection of Nuclear Material;
* Vienna Convention for the Protection of the Ozone Layer (Vienna Convention); and the as yet inactive
* United Nations Framework Convention on Climate Change and the Kyoto Protocol.

It is hoped that in the future, with the full implementation of these agreements, and the further construction of species specific agreements to cover the remaining areas of the globe that turtles frequent, a holistic and coordinated approach to marine turtle conservation and natural resource management will be achieved. As such, whether such aspirations can be truly met and the future of marine turtles remains uncertain.

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