

*Conservation Focus: Priorities for Policy-Relevant Conservation Research: a View from SCB Regional Sections*

## Gaining Traction: Retreading the Wheels of Marine Conservation

PHAEDRA DOUKAKIS,\* E. C. M. PARSONS,†‡ WILLIAM C. G. BURNS,§ ANNE K. SALOMON,\*\*†† ELLEN HINES,‡‡ AND JOHN A. CIGLIANO§§

\*Institute for Ocean Conservation Science, School of Marine and Atmospheric Sciences, Stony Brook University, Stony Brook, NY 11794, U.S.A., email pdoukakis@gmail.com

†Department of Environmental Science and Policy, George Mason University, 4400 University Drive, Fairfax, VA 22030, U.S.A.

‡University Marine Biological Station Millport, Isle of Cumbrae, KA28 0EG, Scotland, United Kingdom

§Santa Clara University School of Law, 500 El Camino Real, Santa Clara, CA 95053, U.S.A.

\*\*Marine Science Institute, University of California, Santa Barbara, CA 93106, U.S.A.

††School of Resource and Environmental Management, Simon Fraser University, 8888 University Drive, Burnaby, British Columbia, Canada V5A 1S6

‡‡Department of Geography and Human Environmental Studies, San Francisco State University, 1600 Holloway Avenue, San Francisco, CA 94132, U.S.A.

§§Department of Biological Sciences, Cedar Crest College, 100 College Drive, Allentown, PA 18104, U.S.A.

**Abstract:** *A number of international treaties address the conservation of marine resources. The declining state of the world's oceans suggests that these treaties are not succeeding and could use improvement. The Convention on International Trade in Endangered Species (CITES) is increasingly embracing the conservation of marine species. We examine the evolution of marine species protection under CITES and illuminate some of the mechanisms used and challenges faced in implementing CITES protection. We found that clarification is needed on when and where CITES applies and how CITES should work with other treaties and institutions. The Society for Conservation Biology (SCB) can contribute to increased effectiveness of CITES for marine conservation. Foremost, the SCB community could foster dialogue on creating a broad vision of how CITES should apply to marine species and how it can synergistically interact with other important marine-conservation treaties and institutions. More specific contributions could focus on defining listing criteria for marine species, improving the science behind the nondetriment finding, and offering technical guidance on species proposals. A future role for SCB could be to contribute to the enhanced effectiveness of other marine conservation agreements such as the Convention on the Conservation of Migratory Species of Wild Animals, the International Whaling Commission, and the United Nations Convention on the Law of the Sea.*

**Keywords:** CITES, international treaties, marine conservation agreements, nondetriment finding

Logrando Tracción: Reencauchando las Ruedas de la Conservación Marina

**Resumen:** *Numerosos tratados internacionales abordan la conservación de recursos marinos. La declinación de los océanos sugiere que estos tratados no son exitosos y podrían ser mejorados. La Convención Internacional de Comercio de Especies en Peligro (CITES) ha incrementado su atención en la conservación de especies marinas. Examinamos la evolución de la protección de especies marinas bajo CITES y destacamos algunos de los mecanismos utilizados y los retos para la implementación de la protección CITES. Encontramos que se requiere aclarar cuándo y donde se aplica CITES y cómo debería trabajar CITES con otros convenios e instituciones. Las Sociedad para la Biología de la Conservación (SBC) puede contribuir a incrementar la efectividad de CITES para la conservación marina. Primero, la SBC podría fomentar el diálogo sobre*

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la creación de una visión amplia de cómo debería aplicar CITES para las especies marinas y cómo puede interactuar sinérgicamente con otros tratados e instituciones de conservación marina. Contribuciones más específicas podrían enfocarse a la definición de criterios de enlistado para especies marinas, mejoramiento de la ciencia detrás del hallazgo no dañino y el ofrecimiento de orientación técnica para las propuestas de especies. Un papel futuro de la SBC podría contribuir al mejoramiento de la efectividad de otros acuerdos de conservación como la Convención sobre la Conservación de Especies de Animales Silvestres Migratorios, la Comisión Ballenera Internacional y la Convención de las Naciones Unidas sobre la Ley del Mar.

**Palabras Clave:** acuerdos de conservación marina, CITES, hallazgo no dañino, tratados internacionales

## Introduction

There are a multitude of international treaties that deal with ocean governance and management of marine resources. Arguably, the declining state of the world's oceans in terms of overfishing, habitat loss, pollution, and climate change suggests that these laws and treaties are not succeeding. Although a new international marine conservation treaty might be useful, such a treaty could take a decade or more to establish and like those already in place may do little to strengthen or harmonize marine conservation efforts. Consequently, we contend that the best approach is to improve marine conservation aspects of existing treaties—that is, not reinventing the wheel, but giving it new tread. Herein we discuss ways to bolster marine conservation through existing agreements. We use the Convention on International Trade in Endangered Species (CITES) and its interaction with other important international institutions, as an example. We further discuss the important role that the Society for Conservation Biology (SCB) could play to inform the decision-making process, make a substantive and lasting contribution to marine conservation, and increase its profile on the international stage.

Conceived in 1963 by members of the World Conservation Union (IUCN), CITES was signed by 80 countries a decade later, entering into force in 1975. Currently, 173 countries (Parties) have ratified the treaty. The Convention addresses conservation of plant and animal species threatened by international trade in their parts or derivatives. International commercial trade of species listed in CITES Appendix I is not permitted because it is recognized as a threat to the continued survival of the species in the wild. Limited noncommercial trade of Appendix I species is sometimes allowed (e.g., for captive-breeding programs). Species listed on Appendix II are vulnerable, but less likely to be threatened with extinction and can be traded commercially with an export permit and evidence that harvesting is not detrimental to the future of wild populations (the “nondetriment finding”). A third list exists (Appendix III) for species found within individual Party territories for which that Party wishes to afford special protection from trade. More species are listed on Appendix II and III compared with Appendix I. Ulti-

mately, the treaty attempts to take a proactive approach by controlling trade to prevent eventual Appendix I listing. The Convention is implemented by designated national Party entities that serve as Management and Scientific Authorities. The Convention has been described as among the most effective international conservation-oriented treaties (Ginsberg 2002).

## CITES and Marine Species

Few of the 5,000 animal species and none of the 28,000 plants listed under CITES are marine. Listed marine species include charismatic vertebrates (marine mammals like sea otters, seals, sea lions, whales, dolphins, dugongs, and manatees), marine iguanas, sea turtles, seabirds, sea horses, and invertebrates, such as most corals, queen conch (*Strombus gigas*), abalone, giant clams, and sea cucumbers. Among the marine fishes, the coelacanth (*Latimeria* spp.), humphead wrass (*Cheilinus undulatus*), basking shark (*Cetorhinus maximus*), great white shark (*Carcharodon carcharias*), whale shark (*Rhincodon typus*), and sawfishes (family Pristidae) are listed. Species that spend only part of their life cycles in seas or oceans (sturgeons, totoaba [*Totoaba macdonaldi*], European eel [*Anguilla anguilla*]) are also protected by CITES.

That few marine taxa subject to active fisheries appear on the CITES list, such as those whose populations have declined dramatically in recent years (e.g., Atlantic cod [*Gadus morhua*], Patagonian toothfish [*Dissostichus eleginoides*], swordfish [*Xiphias gladius*]), is striking. This is especially surprising given that fisheries, as well as timber, dominate the wildlife trade in terms of value and volume, with fisheries also comprising the bulk of the food trade (Broad et al. 2003). One might thus expect marine resources to dominate the CITES list of included taxa. An important reason why they do not is that fisheries products, like those from timber, are often not considered part of the wildlife trade but rather as a traded commodity. As such, the role of CITES in regulating marine resource trade is unclear: it is difficult to determine terms under which the Convention applies and a species should be listed (i.e., when is a species

specifically threatened by trade?). Many of the marine species listed under CITES are those threatened by trade for curios, luxury items, or medicinal use rather than consumption. As such, being affected by these types of threats could be an unwritten criterion for a species' listing. Clear guidelines need to be established to understand the circumstances under which the Convention applies.

That said, proposals that deal with marine species appear to be on the increase. The 14th Conference of the Parties (COP), held in June 2007, considered more proposals for listing of marine taxa than any COP held previously. Four species and one family of fish (Pristidae), one invertebrate (Brazilian populations of the spiny lobster) (*Panulirus argus* and *Panulirus laevicauda*), and a genus of corals (*Corallium*) were considered. Only the sawfishes (Pristidae) and European eel won protection, however. These latter two undoubtedly displayed the most dramatic, range-wide declines compared with the others considered. Although the *Corallium* outcome was ultimately tied to vote-negotiation practices surrounding the listing of another species, failure of the other marine species proposals speaks to larger issues. There is indeed a reluctance on the part of CITES Parties to list marine species because, as discussed earlier, fisheries are not considered part of the wildlife trade. Inclusion of exploited marine resources would greatly expand the responsibilities of an already overburdened Convention and possibly dilute its potency and mission. The 14th COP even considered, and rejected, a proposal to establish a fisheries working group, stating that fisheries management is outside the purview of CITES. Because population dynamics of marine species can differ from terrestrial species and range distribution can be comparatively extensive, the current listing criteria are also difficult to interpret and apply to marine species.

## Forging Partnerships

In 2006, in response to the growing push to list marine species under CITES and a lack of clear understanding of jurisdictional and managerial division, the Food and Agriculture Organization of the United Nations (FAO) and CITES entered into a memorandum of understanding (MOU). Beyond agreeing to communicate and cooperate, the MOU provides for FAO consultation on listing criteria and proposals for aquatic species listing. In return, the CITES Secretariat agreed to respect "...to the greatest degree possible" FAO's scientific and technical advice. At the last COP, written and verbal comments passed between the CITES Secretariat and FAO clearly demonstrated that the two entities differed with respect to whether listing criteria were valid and applicable for marine species and whether the proposed candidate ma-

rine species should be listed, with FAO disagreeing with the CITES Secretariat in putting forward four of the seven listing proposals (CITES COP 14 Inf. 26). Harmonization between FAO and CITES must occur if CITES is to make a meaningful contribution to marine conservation. Recent advances in collaboration between the two entities, especially on sturgeons, suggest this may already be happening, and such work may help clarify the role of CITES in protection of marine species into the future.

A clearer relationship has been established between CITES and the International Whaling Commission (IWC). All Cetacea are listed under CITES, either under Appendix I or II. As reviewed in Gillespie (2002), CITES has mostly deferred to the IWC when faced with requests to permit trade in "great" whale (i.e., most baleen whales and the sperm whale [*Physeter macrocephalus*]) products. The IWC thus sets the policy for CITES to follow, and their opinion supersedes that of individual CITES Scientific Authorities, at least for the so-called great whales. This was apparent at the 14th CITES COP, where a decision was adopted stating that no review of listings of great whales, specifically those for the fin whale (*Balaenoptera physalus*) would occur if an IWC moratorium was in place (CITES COP Dec. 14.81). The IWC also passed a resolution at the 2007 meeting regarding its continuing relationship with CITES (Res. 2007-4).

The nature of the relationship between IWC and CITES in the future appears to be up for discussion. Some CITES Parties are pushing for CITES to take unilateral action on "sustainable trade" and competent management (see Gillespie 2002, records of the 2006 CITES Animals Committee). The central issue to consider, as with all CITES species, is the circumstances under which trade in whales becomes a mechanism for encouraging conservation by adding value. Given that history does not provide many examples of sustainable commercial harvest of whales and dolphins and that harvesting is the primary threat to or cause of depletion of many species, it is difficult to envision a situation in which whaling could encourage conservation. As whale populations recover, resolution of this will become increasingly important. Other issues to consider will be the need to closely monitor trade, possibly using molecular methods, to ensure the authenticity of whale products (Baker 2008). There is room for increased cooperation between CITES and perhaps another conservation-oriented entity that can inform decisions regarding harvest of and trade in marine mammals, particularly species that are not covered by the IWC.

Cooperation between CITES and the Convention on the Conservation of Migratory Species of Wild Animals (CMS) has been fruitful, especially in the case of marine mammals, although CMS could not fulfill a decision-making role on trade in marine mammals. The CMS came into force in 1979 and encourages signatories to develop multilateral agreements for species that cross national jurisdictional boundaries (Art. IV [4]). Many

marine species of conservation concern are listed under Appendix I (migratory species threatened with extinction) or Appendix II (migratory species that would significantly benefit from international cooperation) of the Convention. The treaty has already led to two, arguably successful, conservation agreements for whales and dolphins: the Agreement on the Conservation of Cetaceans of the Black Seas, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS), and the Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS), which require Parties to cooperate to achieve a favorable conservation status for cetaceans in the agreement area. The CMS can further produce resolutions and recommendations that Parties are theoretically obliged to follow, such as the recent one on fisheries bycatch (e.g., Resolution 6.2, 7.2).

Where CITES and CMS have taken an active role, increased dialogue and transparency on management regimes has ensued. A good example is the hawksbill turtle (*Eretmochelys imbricata*) listed under CITES Appendix I since 1996. At the 11th COP, Cuba motioned to reopen trade by proposing to down-list the Caribbean population of hawksbill to Appendix II. The proposal was rejected, but served to spark regional dialogue meetings that were facilitated by CMS and focused on developing a conservation strategy for the Caribbean. Under an MOU signed in 2002, CMS and CITES have agreed to work together on regional conservation for marine turtles, whale shark, great white shark, sturgeons, and other migratory taxa. The CMS-CITES relationship serves as a good example of complementary efforts by two large international conservation agreements.

Discussion at CITES on the Patagonian toothfish provides an example of the complexity of listing fish species with respect to jurisdictional conflict (see Willock 2002 for species information). Population declines and excessive illegal fishing and trade prompted nomination of the species for Appendix II in June 2002. The Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR), the body overseeing management of the species in Antarctic waters, opposed the listing on grounds that management fell under its jurisdiction. In the end, a resolution on cooperation with CCAMLR and CITES was introduced and the proposal to list the species was withdrawn (Bialek 2003). Unfortunately, this species continues to be plagued by illegal fishing. Had the species been listed, international trade may have been better controlled. Specifically, CCAMLR's Catch Documentation scheme might benefit from CITES contribution by assisting in preventing laundering of toothfish catches through certain ports. The toothfish case remains an example of where CITES Parties decided to leave management to the managing entity for the time being. It would not be surprising to see a proposal for this species in the future.

## Implementation Challenges

Because CITES relies on national implementation of its policies and procedures without providing financial assistance, full compliance will always be challenging, and some trade may be necessary to support ongoing conservation. Queen conch, a marine mollusc harvested in over 25 Caribbean countries and listed under CITES Appendix II since 1993, is a case in point. This species is heavily traded, overfished in most areas, and subject to poor management and illegal fishing in nations lacking the capacity to effectively control fishing. Inadequate fisheries management and declining stocks prompted CITES to issue trade suspensions for this species in 2003 and 2004 (Acosta 2006). Management still remains problematic, however, due to a lack of funds and capacity. As future trade bans would cause economic harm to the exporting countries and undermine conservation through loss of revenue, attention is focusing on how to better control harvest and trade to ensure sustainability. The story of queen conch is thus illustrative of the conundrum of whether some trade is necessary for species conservation.

As mentioned above, the power of CITES rests in its ability to suspend trade when management is poor. Non-compliance can result in blanket, national-trade restrictions for a country as well as species-specific suspensions. As with conch, trade in sturgeons (the source of black caviar) has been periodically suspended (Ginsberg 2002; Pikitch et al. 2005). The threat of trade suspension has further been used to encourage improvements in management and trade regulation. Whether the measures taken by CITES regarding sturgeons are adequate is questionable because most commercially exploited species have continued to decline since the listing went into effect in 1998. This is due to an apparent unwillingness among range states to change quota-development systems and management and the difficulty of controlling illegal markets and trade. Uplisting to Appendix I may very well be the fate of many sturgeons in the near future.

Compared with terrestrial species, marine species can be more geographically widespread and may display less population structure if larval dispersal is involved. As such, split listing under CITES may sometimes be necessary to deal with localized depletion. Yet this can also be problematic from an enforcement and traceability perspective. Listing distinct populations of a species under different appendices often cannot be accomplished if there is no mechanism for distinguishing separate populations in trade. Similarly, many species or entire genera or families may be listed due to look-alike issues. This issue came to play at the 14th CITES COP, when Brazil proposed listing the Brazilian population of spiny lobster in Appendix II. The listing was opposed because a split listing would not be enforceable due to a lack of

tools to distinguish Brazilian spiny lobsters in trade. As the opponent to the listing was also the biggest importer of Brazilian spiny lobsters, other reasons besides just the look-alike issues were likely at play. In the end the proposal was withdrawn. The convention would do well to partner with projects, such as Barcode of Life (Hebert et al. 2003), to start to tackle enforceability of split listings. In the absence of genetic mechanisms to support species listing, fisheries management and customs agencies will need to tightly regulate export.

The convention has also been grappling with the issue of products in trade originating in different ocean zones, an issue linked to the United Nations Convention on the Law of the Sea (UNCLOS). Under UNCLOS, "territorial seas" are designated as the area from the low water mark to 12 nautical miles, the exclusive economic zone (EEZ) extends from the territorial sea boundary to 200 nautical miles, and the "high seas" are the waters beyond the EEZ. Nations have full sovereignty over their territorial sea and exclusive rights to exploit, manage, and conserve the resources contained within their EEZ (Art. 56 & 58). Each state manages its EEZ fisheries under UNCLOS and the 1995 Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks. Nations, however, often lack the resources, infrastructure, ability, or political will to manage their EEZ stocks effectively or prevent access of foreign vessels to fisheries within their EEZ. Products from these mismanaged or illegally harvested fisheries inevitably end up in trade, where they are indistinguishable from legally acquired products. If the species harvested are listed under CITES, however, the exporting country is still responsible for supplying a nondetriment finding.

Fisheries resources on the high seas can be exploited by any nation (Art. 87), and it is high-seas exploitation that is particularly tricky with respect to CITES. The UNCLOS requires that anything qualifying as a "marine living resource" be harvested sustainably in the EEZ and high seas areas (Art. 61 & 119). Arguably, many Parties are failing to abide by this statute, but UNCLOS lacks sufficient teeth to effectively attack this problem, particularly on the high seas. This is where CITES could have a special, if not unique role, particularly when the "living resource" is landed at a port in a Party state. For a Party to export this commodity, a nondetriment finding would be necessary, thereby possible forcing better management of high-seas resources that enter international trade. Discussions at CITES fall under the title of "Introduction from the Sea." At the 14th COP, it was reaffirmed that nothing within the CITES Convention shall work against UNCLOS and that tighter trade controls are needed. The debate regarding high-seas products in trade will undoubtedly continue and provide challenges to practical implementation of CITES and potentially drive greater cooperation with marine fisheries management organizations.

## Looking Ahead

The role of CITES is to conserve species that are negatively affected by trade and protect species demonstrating widespread decline or species that are nearing extinction. This is done by controlling international trade and using trade as conservation incentive. A new role for CITES should be to assist fisheries-management organizations in handling cases in which international markets and trade are major drivers of illegal fishing and a species is harvested legally within an EEZ but illegally beyond it on the high seas. Serving as a complement to the International Commission for the Conservation of Atlantic Tuna (ICCAT), CCAMLR could prove worthwhile (see Peel et al. 2003 for ICCAT and marlin; Willock 2002 for toothfish). Fisheries management agencies and Regional Fisheries Management Organizations (RFMOs) should interact more with CITES. Here the differences in jurisdiction and responsibility lie in regulating catch (i.e., landings) versus controlling the trade of fish already caught. The point needing to be resolved will be that of the nondetriment finding criteria should it differ between the management agency and CITES. The current debate about definition of the nondetriment for marine species (driven largely by application to sharks) will play an integral role in shaping the future. It will be interesting to observe whether CITES takes a stronger stance than fisheries management agencies or FAO. Given the precedents, we imagine a weaker stance. Another sticking point will be the role of domestic markets and consumption within the nondetriment finding. The convention might further benefit from links to seafood certification programs (e.g., the Marine Stewardship Council) because these programs have made great strides in assessing sustainability and have unique public outreach roles.

As illustrated above, the future role of CITES in marine conservation must be shaped by standard criteria for listing and convention implementation for marine species. Criteria for listing and the nondetriment findings may need to differ from those applied to terrestrial species. Threshold levels for when CITES applies or intervenes in the case of marine species may need to be established. The controlled expansion of CITES to include more marine species should occur under well-defined standards, especially in light of the fact that CITES' funding and capacity does not necessarily increase as the number of listed taxa grows. Preserving the strengths of the Convention can come with controlled expansion and thoughtful use of other existing treaties and bodies designed to address marine conservation.

What CITES will not ever do is address critical habitat requirements, ecosystem-based approaches to management, and restoration of a species. This will only be addressed through complementary measures at the

national or regional level. Incentives for habitat conservation may be indirectly provided, however, if the prospect of trade might be enhanced by population stabilization or improved habitat availability. The convention will also likely remain species specific and thus fail to consider ecosystem consequences of the levels of trade in species that it authorizes. At present, the treaty does not consider depletions resulting from domestic trade in listed species, but this has been a topic of discussion (e.g., for sturgeons) and thus may change in the near future.

### SCB Contribution

The SCB community stands to contribute to the CITES process. A first step will be for SCB to acquire standing at CITES and recognition as an independent, unbiased body of experts able to provide scientifically sound advice and inform evidence-based decision making. The SCB can supplement and augment advice given by bodies such as the IUCN and other NGOs by drawing upon its membership to provide expert opinion that is taxon specific, possibly on listing proposals or proposals to change the status of currently listed taxa. Regional and nation-specific advice could also be generated and applied. Moreover, substantive contribution could assist the development of convention standards for marine species including listing criteria, nondetriment findings, and the appropriateness and enforceability of split listings. This could answer the question of where, when, and how CITES should embrace conservation of marine species. The SCB can contribute to CITES growth by fostering debate on key topics at annual meetings and through publications that address scientific, technical, and theoretical issues CITES may be tackling. Examples already exist in past issues of *Conservation Biology* on the future of CITES and the use of trade as a conservation incentive (Ginsberg 2002), trade regulation and tracking (Blundell & Mascia 2005), and labeling and barcoding (DeSalle 2006; Rubinoff 2006; Gerson et al. 2008). Future contributions could strive to have a marine focus. The SCB could provide advice and guidance on linking CITES with other important marine-conservation treaties

and institutions and to identify realistic, complementary, and synergistic relationships. Beyond CITES, SCB stands to enhance science-based policy at CMS, IWC, and UNCLOS and as such could help improve, revitalize, and “retread” these important international wheels of marine conservation.

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