OCEANS IN THE BALANCE: AS THE SHARKS GO, SO GO WE

By
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Shark finning is amongst the most wasteful and cruel exploitation of animals currently practiced in the world today. The decimation of shark populations threatens the fragile balance of the oceans' ecosystems and ultimately threatens the human population as well.

This Article addresses the economic and cultural reasons for the continued practice and demand for shark finning. Many protections for sharks have been attempted, but nearly all fail due to inadequate restrictions and enforcement. Various international treaties and conventions have to some degree addressed the issue, including the Convention on International Trade in Endangered Species and the Convention on Migratory Species, among others. A leader on the issue, the United States has made several statutory and regulatory efforts to prohibit shark finning. Other countries also have enacted protections. However, due to lack of enforcement, lack of resources, and the presence of legal loopholes, shark finning continues on a wide scale. This Article examines weaknesses in the current attempts at protective measures and explores new ideas for the protection of sharks.

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I. INTRODUCTION

A troller pulls in its longline.[1] Non-targeted species, many of them sharks still quite alive, dangle interspersed among the targeted species also hooked. With lines stretching fifty miles or more[2] containing as many as 3,000 hooks,[3] there are many of these "non-targeted fish"—odd to think of this feared predator as a "fish." Although sharks are not this fishery's targeted species, the sharks' fins promise a lucrative return,[4] and, therefore, the fins are a welcome addition to the cargo. But only the fins fetch the big dollars, and space aboard ship is limited.[5] Operating on thin margins, the crew has no incentive to haul a shark carcass and deprive space to other higher priced marketable catch. So the thrashing predator, hooked securely on the death line, is winched aboard at the invitation of a machete-wielding crew who cut off its fins and perhaps also its tail—without any attempt to kill or stun it first—and then toss the still living creature back into the ocean to drown.[6]

The world's oceans are in a fateful balance. As the sharks go, so go we. In an interesting twist of irony, our survival is bound to the vilified but necessary creature we fear most. This Article makes the case for giving much stronger international and national protection to this most feared, misunderstood, and imperiled creature. This Article examines international and national law to determine what we are doing now to protect this essential and valuable resource, and what still needs to be done.

Part II presents the compelling reasons to conserve sharks, which are essential predators in ocean ecosystems. Part III discusses the economic forces driving the unbridled global decimation of shark species. Part IV, in examining the legal systems in place today to conserve and sustainably harvest sharks, reveals that these systems are inadequate or under-enforced and therefore cannot achieve their goals. Part V examines the conservation measures attempted at the national and in-

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1 *See* Sea Shepherd Conserv. Socy., *What Is a Longline?*, http://www.seashepherd.org/sharks/longlining.html (accessed Nov. 21, 2010) (explaining longlines).

2 *Id.*

3 N. Z. Seafood Indus. Council, *Longlining*, http://seafoodindustry.co.nz/Default.aspx?id=1449&area=55 (accessed Nov. 21, 2010).

4 *See* Greenpeace Intl., *Shark Finning Mystery*, http://www.greenpeace.org/international/news/shark-fin-mystery (Oct. 4, 2006) (accessed Nov. 21, 2010) (stating that "[e]arlier this year two Spanish Longliners landed [eight] tons of shark fins in Suva, Fiji. With an estimated value of US $5.6 million this far exceeds the value of the tuna they would have caught.") [hereinafter Greenpeace, *Shark Finning Mystery*]; Shark Alliance, *European Shark Week Slide Show*, Slide 23, http://www.sharkalliance.org/slideshow.asp?fid=6578&rootid=19#slides1 (accessed Nov. 21, 2010) (explaining that dried shark fin can fetch up to 500_ per kilogram, equivalent to $326 USD per pound).

5 Greenpeace, *Shark Finning Mystery*, *supra* n. 4.

6 *See generally* WildAid, *The End of the Line*? *Global Threats to Sharks*, 4–5 (2d ed., WildAid 2007) (available at http://www.wildaid.org/PDF/reports/EndOfTheLine2007US_Oceana.pdf (accessed Nov. 21, 2010)) [hereinafter WildAid, *End of the Line*] (explaining the practice of finning as well as the devastating effects that the demand for shark fins is having on shark populations around the world).

ternational level and why they are not working. Part VI proposes a course of immediate concurrent legal and non-legal action to avert the imminent wholesale extinction of most shark species.

II. SHARKS: WHY SHOULD WE CARE ABOUT THE ANIMAL IN *JAWS*?

To generalize, the shark is not a beloved creature. One may rightfully ask, "Why should we care about something that we so fundamentally fear?" The answer lies in a few distinct—but interconnected—aspects of life on this planet that affect our daily lives but which are not obvious in our everyday affairs. As top predators, sharks keep the oceans in balance.[7] The oceans' balance affects the very essentials upon which we rely for our survival on this planet: air, water, climate, and nutrition.[8] In addition, people around the world rely on the ocean for their economic well-being.[9]

Sharks, as top predators, are "keepers of the kingdom." Kingman Reef is a present day example of perfect marine balance.[10] The coral formations living there are models of healthy coral reef systems.[11] In an age when the news is filled with reports of the decline of coral reefs, this reef is a regular Eden in the marine world. Perhaps surprisingly to many, the shark is the underlying cause of this example of ecosystem perfection.[12] Many popular snorkeling and diving areas have aquarium-like environments, with relatively small, beautifully colored fish but very few predators in sight and coral formation in decline. This reef, in contrast, is dominated by top predators that comprise 85% of its biomass—three quarters of that being sharks.[13]

On the other side of this Eden, in what one might call the backalley of marine life, the oceans, unfortunately, are replete with examples of ecosystems out of balance due to overfishing of sharks. For example, whole fisheries on the Atlantic coast have collapsed as a result

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[7] E. Griffin et al., *Predators as Prey*: *Why Healthy Oceans Need Sharks* 1 (Oceana, 2008) (available at http://na.oceana.org/sites/default/files/reports/Predators_as_Prey_FINAL_FINAL1.pdf (accessed Nov. 21, 2010)) (explaining why sharks are necessary to a healthy ocean ecosystem).

[8] *See* JOSHUA S. REICHERT, *Pew Environment Group (from Pew Prospectus 2009)*, http://www.pewtrusts.org/news_room_detail.aspx?id=50258 (Mar. 20, 2009) (accessed Nov. 21, 2010) (explaining the importance of the ocean); *see also* U.S. Commn. on Ocean Policy, *An Ocean Blueprint for the 21st Century*, 30 (2004) (available at http://www.oceancommission.gov/documents/full_color_rpt/000_ocean_full_report.pdf (accessed Nov. 21, 2010)) (explaining how the ocean affects us).

[9] U.S. Commn on Ocean Policy, *supra* n. 8, at 30.

[10] Kennedy Warne, *Kingman Reef: An Uneasy Eden*, Natl. Geographic Mag. (July 2008) (available at http://ngm.nationalgeographic.com/2008/07/kingman-reef/warne-text (accessed Nov. 21, 2010)) (stating that "predator-dominated Kingman represents the gold standard for coral reefs").

[11] *Id.*

[12] *Id*.

[13] *Id*.

of the removal of these top predators.[14] In other areas, the removal of sharks from coral reef systems sets in motion a chain reaction of smaller predators eating their herbivore prey to the point of decimation, allowing macroalgae to smother out the coral, destroying the diversity that makes the foundation of a healthy marine ecosystem[15] and providing the opportunity for coral killing diseases to take hold.[16]

Our destinies are linked. All this mention of marine diversity reduced or eliminated and the death of coral reefs seems to be a tale of something happening in a "galaxy far, far away,"[17] a drama played out in a universe and by a life system so foreign to us that it would seem to have no bearing on our lives. But nothing could be further from the truth. From the economic realities of thriving coral ecosystems that provide essential habitat for the fish that fuel a large sector of our nation's economy[18] to the intricate balance between healthy corals and thriving phytoplankton that provide the very air we breathe[19] and contribute an estimated 85% to mitigating the effects of carbon emissions,[20] sharks are essential to perpetuating our well-being. Our destinies are *inextricably* linked.

In general, we have little understanding of the enormous indebtedness we have to the oceans. The oceans contribute to our fundamental welfare, be it our economic well-being or our day-to-day survival. Nations around the world acknowledge that the oceans play a capstone

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[14] TerraDaily, *Over-Fishing of Atlantic Sharks Upsets Ecosystem Balance*, http://www.terradaily.com/reports/Over_Fishing_Of_Atlantic_Sharks_Upsets_Ecosystem_Balance_999.html (Mar. 29, 2007) (accessed Nov. 21, 2010) (stating that removal of sharks due to overfishing set in motion the collapse of one bay scallop fishery in the U.S.); *see also* The Pew Charitable Trusts, *Saving Jaws* (Spring 2007 Trust Magazine article) http://www.pewtrusts.org/our_work_report_detail.aspx?id=26218&category=140 (May 20, 2007) (accessed Nov. 21, 2010) [hereinafter The Pew Charitable Trusts, *Saving Jaws*] (explaining that removing sharks from the ecosystem can have devastating effects).

[15] Griffin et al., *supra* n. 7, at 9.

[16] Natl. Oceanic & Atmospheric Administration (NOAA), *Coral Health and Monitoring Program*, *What Happens to the Reef When the Top Predators Disappear?*, http://www.coral.noaa.gov/faq2.shtml (site no longer available) (on file with *Animal Law*).

[17] *Star Wars*, Motion Picture (LucasFilm LTD. 1977); *see also* Wikipedia, *Star Wars Opening Crawl*, http://en.wikipedia.org/wiki/Star_Wars_opening_crawl (updated Aug. 28, 2010, 21:42) (accessed Dec. 4, 2010) (providing history on the quote).

[18] *See* NOAA, *NOAA Habitat Conservation*, *Habitat Protection*, *Deep-Sea Corals*, http://www.habitat.noaa.gov/protection/corals/deepseacorals.html (accessed Nov. 21, 2010) (discussing deep-sea coral ecosystems and NOAA's research and conservation program); *see also* NOAA, *NOAA Habitat Conservation*, *Habitat Protection*, *Shallow Corals*, http://www.habitat.noaa.gov/protection/corals/shallowcorals.html (accessed Nov. 21, 2010) (discussing the value of shallow coral and NOAA's conservation program).

[19] *See* NOAA, *NOAA Ocean Service Education*, *Corals*, *Zooxanthellae . . . What's That?*, http://oceanservice.noaa.gov/education/kits/corals/coral02_zooxanthellae.html (accessed Nov. 21, 2010) (discussing the algae in coral that produces oxygen); *see also* John Roach, *Nat'l. Geo. News: Rich Coral Reefs in Nutrient-Poor Water: Paradox Explained?*, http://news.nationalgeographic.com/news/pf/18895175.html (Nov. 7, 2001) (accessed Nov. 21, 2010) (summarizing research done on the interaction of reef coral, sponges, and plankton).

[20] Julia Whitty, *Deep Blue Home*, 207 ¶ 1 (Houghton Mifflin Harcourt 2010).

role in keeping a strong and balanced economy.[21] In the United States, where over half the population lives in ocean coastal counties,[22] the coast and the adjacent oceans contribute substantially to our nation's economic welfare. Ocean-related and coastal activities—combined with the economies of coastal watershed counties—generate half of the nation's gross domestic product and sustain approximately 60 million jobs.[23] For some nations, the oceans, ocean products, and the trade and industries that they support *are* the nation's economy as a practical matter.[24] Nations benefit economically not only from the people living in the coastal zones and directly from ocean products, but also from one of the largest economic growth sectors: tourism.[25]

The oceans not only provide our economic livelihood, but they are also vitally important to our life support system. They yield those environmental components that allow us to wake up every day and engage in the activities that we turn into economies and livelihoods. They furnish the air we breathe in the form of oxygen released, the food we eat in the formation of clouds that become rain over croplands, and the climate and atmosphere of our locale in the form of wind currents and weather patterns that form over the ocean.[26] The importance of their function in sequestering the excess carbon we release into the atmosphere cannot be overstated. Through photosynthesis, the oceans' abundant phytoplankton (microscopic plants) help keep the air free of toxic levels of carbon dioxide.[27] In the face of global warming and climate

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[21] *See* Asia-Pacific Econ. Cooperation, *2005 APEC Ocean-Related Ministerial Meeting*, *Joint Ministerial Statement* ¶ 7 http://www.apec.org/apec/ministerial_statements/sectoral_ministerial/ocean-related/2005_ocean-related.html (Sept. 16–15, 2005) (accessed Nov. 21, 2010) (stating that the oceans and their resources are essential to our economic well-being).

[22] U.S. Commn. on Ocean Policy, *supra* n. 8, at 2.

[23] *Id*.

[24] *E.g.* C. Intelligence Agency, *The World Factbook* 255 (C. Intelligence Agency, 2009) (stating that Greenland's economy "remains critically dependent on exports of fish"); *id.* at 290 (referring to Iceland, "The economy depends heavily on the fishing industry, which provides 40% of export earnings and employs 5% of the work force. It remains sensitive to declining fish stocks as well as to fluctuations in world prices for its main exports: fish and fish products . . . .").

[25] *See* U.S. Commn. on Ocean Policy, *supra* n. 8, at 1 (stating that the oceans contribute to "the country's largest and most rapidly growing economic sectors: tourism and recreation"); *see e.g.* Official Green. Travel Guide, *Business and Investment*, http://www.greenland.com/content/english/business_and_investment (accessed Nov. 21, 2010) (inviting businesses to invest and locate in Greenland, this business development group claims an environment prosperous to business due to the growth in tourism fueled by people's desire to witness Greenland's natural beauty).

[26] U.S. Commn. on Ocean Policy, *supra* n. 8, at 1; *see also* The Pew Charitable Trusts, *Pew Oceans Commission*, http://www.pewtrusts.org/our_work_detail.aspx?id=130 (accessed Nov. 21, 2010) ("Ocean currents circulate the energy and water that regulate the earth's climate and weather and thus affect many aspects of the human experience, whether we live on the nation's coasts or its heartland.").

[27] *See* Global Dev. Research Ctr., *Oceans and the Carbon Cycle*, http://www.gdrc.org/oceans/fsheet-02.html (accessed Nov. 21, 2010) (explaining how "plankton influence the exchange of gases between the atmosphere and the sea"); *see generally* PMEL Carbon

change due to excessive and increasing carbon emissions from human activity, the oceans provide the Earth's largest storehouse for carbon dioxide, also known as a carbon "sink."[28] This mechanism is built upon a profound system of interconnectedness[29] to which the oceans' creatures and plant life all contribute to perpetuate the subtle and superior balance that ensures us a livable atmosphere.[30] Sharks play a key role in maintaining that superior balance. In this very direct and specific way, our destiny is linked to theirs.

III. THE PROBLEM

For the sharks, time is running out. They are victims of bycatch—both from illegal and legal fishing activities.[31] Powerful market pressures fuel excessive harvesting of sharks beyond their ability to recover.[32] Additionally, scientists lack the data necessary to develop conservation strategies to effectively counter overharvesting.[33]

A. IUU: Not Only an Acronym—A Devastation

IUU is an acronym in the fishing industry describing fishing practices that are "illegal, unregulated and unreported."[34] IUU inhibits the ability of national and international fisheries to manage fish stocks, poses significant threats to the economies of many countries, obstructs conservation efforts, and drives fisheries to collapse.[35] The incursion of

Group, *More Links*, http://www.pmel.noaa.gov/co2/ccstudies/ (accessed Nov. 21, 2010) (providing links to the carbon cycle); Christopher L. Sabine et al., *The Ocean Sink for Anthropogenic CO2*, 305 Science 367, 367 (July 2004) (explaining how much CO2 the ocean absorbs).

28 Global Dev. Research Ctr., *supra* n. 27.

29 *See* Reichert, *supra* n. 8 (stating that "the oceans play a critical role in sustaining life"); *see generally* NASA Science, *Carbon Cycle*, http://science.nasa.gov/earth-science/oceanography/ocean-earth-system/ocean-carbon-cycle/ (accessed Nov. 21, 2010) (explaining the link between the ocean and the carbon cycle).

30 *See* UN Conf. on Env. & Dev., *Agenda 21*, § 17.1 (June 3–4, 1992) (available at http://www.un.org/esa/sustdev/documents/agenda21/english/agenda21chapter17.htm (accessed Nov. 21, 2010)) (stating that the marine environment "forms an integrated whole that is an essential component of the global life-support system").

31 *See generally* WildAid, *End of the Line*, *supra* n. 6, at 5 (providing background on legal and illegal shark fishing).

32 *Id.* at 4–5; *see also* Susie Watts and Victor Wu, *At Rock Bottom: The Declining Sharks of the Eastern Tropical Pacific* 2 (WildAid, 2005) (available at http://www.wildaid.org/PDF/reports/AtRockBottom.pdf (accessed Nov. 21, 2010)) (providing statistics on shark declines).

33 WildAid, *End of the Line*, *supra* n. 6, at 4.

34 U.S. Dept. of Com., *Implementation of Title IV of the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006* 9, http://www.nmfs.noaa.gov/msa2007/docs/biennial_report011309.pdf (Jan. 2009) (accessed Nov. 21, 2010).

35 Food & Agric. Org. of the U.N. (FAO), *International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing*, ¶ 1 (FAO 2001) (available at http://www.fao.org/DOCREP/003/y1224e/y1224e00.HTM (accessed Nov. 21, 2010)).

IUU fishing syndicates on the fishing industry has been steadily on the increase over the last twenty years.[36] One group notes:

> [T]he issue of illegal, unreported and unregulated (IUU) fishing in world fisheries is of serious and increasing concern. IUU fishing undermines efforts to conserve and manage fish stocks in all capture fisheries. When confronted with IUU fishing, national and regional fisheries management organizations can fail to achieve management goals. This situation leads to the loss of both short and long-term social and economic opportunities and to negative effects on food security and environmental protection. IUU fishing can lead to the collapse of a fishery or seriously impair efforts to rebuild stocks that have already been depleted.[37]

Much of the market for shark products is supplied by illegal syndicates that bribe government officials in third-world countries and developing nations that have dense shark habitat under their jurisdictions. The bribes aim to get officials to ignore anti-finning regulations (if they exist), and pay fishers who live on the margins of these depressed economies more money than they would get for highly marketable target species, such as tuna.[38] Illegal dealing in shark fins occurs all through the Pacific Corridor.[39] Costa Rica, Panama, and Ecuador trade large quantities of shark fins through Taiwan to Asian markets annually, not only creating a lucrative illegal market in itself, but also providing cover for drug money laundering and other illicit activities.[40] The Taiwan-Costa Rica connection is a well-known example of such illicit trade.[41] Despite both governments' official positions against finning,[42] the practice continues on a massive scale, with

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[36] *See generally* WildAid, *End of the Line*, *supra* n. 6, at 26 (stating that illegal shark fishing has increased since 1998).

[37] FAO, *supra* n. 35, at ¶ 1.

[38] *See* PRETOMA, *PRETOMA (Programa Restauración de Tortugas Marinas)*, http://www.pretomacr.org/content/category/5/79/68/lang,en (site no longer available) (on file with *Animal Law*) [hereinafter PRETOMA] (discussing the lack of enforcement by Costa Rican officials); *see also* Captain Paul Watson, *Sharks, Drugs, Lies, and Corruption in Costa Rica*, http://www.pretoma.org/category/news/page/4/ (June 24, 2009) (accessed Nov. 21, 2010) (discussing the connection between illegal sharkfinning and cocaine trafficking as well as the corruption and lack of enforcement by Costa Rican officials); WildAid, *Shark Finning: Unrecorded Wastage on a Global Scale* 8, http://www.wildaid.org/PDF/reports/shark_finning_report.pdf (Sept. 2003) (accessed Nov. 21, 2010) [hereinafter WildAid, *Unrecorded Wastage*] (stating that the shark finning ban is not enforced in Costa Rica due to what appears to be a lack of political will).

[39] Watts & Wu, *supra* n. 32, at 1.

[40] *Id.* at 1-2.

[41] *Id.* at 1.

[42] *See* Earthdive.com, *04 August 2005: Costa Rican Policy on Shark Finning Overturned*, http://www.earthdive.com/site/news/newsdetail.asp?id=1223 (Aug. 4, 2005) (accessed Nov. 21, 2010) (explaining that the Constitutional Authority of Costa Rica ruled that shark fins must be landed with their fins attached in natural form); *Taiwan's National Plan of Action for the Conservation and Management of Sharks* § 10.6, http://www.fa.gov.tw/pages/detail.aspx?Node=268&Page=259&Index=3 (accessed Nov. 21, 2010) [hereinafter *NPOA-Taiwan*] (banning finning).

Taiwanese syndicates supplying the Asian market, and other global markets, from Costa Rican ports.[43]

The illegal trade in shark fins is not limited to Taiwan; fishers from other developed nations pay developing nations to provide them with a "flag of convenience."[44] This allows ship owners to register their ships in countries with weak or no enforcement laws—so-called flag of convenience states. Usually, these are small countries needing the revenue such a practice provides.[45] International law gives precedent to the "law of the flag" over the "law of the port of call," which provides ship owners registering ships in this way the means to circumvent their own nation's laws as well as international laws, most of which are based on port of call. Moreover, the corporate laws of many flag of convenience states provide anonymity to the ship owner, obstructing enforcement efforts by making it difficult to hold owners financially and legally liable, and to bring pressure to alter their practices.[46] The use of flags of convenience exacerbates the problems with, and extends the scope of, IUU.[47]

The profit incentive is a powerful motivator behind illegal trading. It acts as an obstacle to regulation, diminishing the effects of regulation aimed at achieving sustainable management of shark populations. The opportunity to achieve great wealth creates forceful incentives to circumvent laws that serve to constrain an operators' ability to maximize profits.[48]

The illegal nature of the supply-side obstructs effective fishery management and conservation initiatives. Where international treaties and national regulations do exist, black market activities undermine the official government stance, and the practical reality is as though no regulations exist.[49] The demand is high, the market is lucrative, the populace is unaware of the situation and its implications, and the incentives to allow the practice to continue unabated are

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[43] Watts & Wu, *supra* n. 32, at 1 ("Taiwanese fin traders have managed to circumvent the law in Costa Rica with impunity. . . . [In] Costa Rica, where there are laws relating to shark finning and the fin trade, illegal activity is widespread. . . such activity (at least, where it involves the Taiwanese) is positively condoned by the government.").

[44] David Hunter et al., *International Environmental Law and Policy*, 808 (3d ed., Foundation Press 2007).

[45] *Id*.

[46] *Id*.

[47] U.S. Dept. of Com., *supra* n. 34, at 14.

[48] *See generally* Watts & Wu, *supra* n. 32, at 23 (offering an intriguing, brief insight to the ploys and practices the "shark mafia" employ in the Galapagos); *see also* Greenpeace, *Shark Fin Mystery*, *supra* n. 4 (reporting an operation in Pohnpei, Micronesia, that kept shark carcasses on ice in order to use them as a means to circumvent customs regulations related to shark fins); Humane Socy. Intl. (HSI), *Dying for a Bowl of Soup*, http://www.hsi.org/issues/shark_finning/facts/dying_for_a_bowl_of_soup.htm (accessed Nov. 21, 2010) [hereinafter HIS, *Dying for a Bowl of Soup*] (providing examples of how the fin trade and its blackmarket underpinnings give rise to other degradations in society).

[49] Watts & Wu, *supra* n. 32, at 21.

strong. As a result, IUU creates a "race to the bottom"[50] for sharks while they last.

B. Legal or Illegal: Bycatch Exacerbates the Problem

As they exist today, legal fisheries do not guarantee effective regulation. First, there are few legal, i.e., "directed," shark fisheries. Second, even when legal fisheries are involved in harvesting sharks, much of the shark catch is unregulated.[51] Most fisheries target marketable fish other than sharks.[52] Many of the large international Regional Fishery Management Organizations (RFMOs) that harvest sharks target tuna.[53] Shark catch regulation, whether legal fishery or not, is limited in scope, mostly voluntary, and data collection is very limited.[54]

Most sharks are caught as bycatch,[55] also known as incidental catch, meaning that the catch is the by-product of fishing for other species. These "non-targeted" creatures get caught in fishing gear when a fishing operation is searching for a targeted species. Bycatch is generally unintentional and unwanted, and many animals are simply discarded.[56] But because of the highly prized fin, shark bycatch has become effectively an unregulated target, gravely undermining the ability to sustainably manage fishing for this species even by legal fisheries.[57]

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[50] *See* Ronald Bailey, *How to Save New England's Fishing Villages: If Only the Fishers Will Allow It*, http://www.reason.com/news/show/34998.html (Sept. 28, 2005) (accessed Nov. 21, 2010) ("Too many fishers are chasing too few fish. It's the classic story of most environmental problems—an open access resource is being overexploited. If a fisher leaves a fish in the water to spawn, the next guy will catch it and sell it. Thus no individual fisher has the incentive to protect the health and productivity of the fishery. It's a race to the bottom with both fish and fishers losing out.").

[51] WildAid, *End of the Line supra* n. 6, at 24.

[52] *Id.* at 20.

[53] Watts & Wu, *supra* n. 32, at 5.

[54] *See* WildAid, *End of the Line*, *supra* n. 6, at 16, 24 (stating that many shark catches are not recorded and any records kept are vague); *see also* Susan Lieberman, *Pew Environment Group's Opening Statement—ICCAT*, http://www.pewtrusts.org/news_room_detail.aspx?id=55944 (Nov. 6, 2009) (accessed Nov. 21, 2010) (stating that "it has now been a full decade since the United Nations called on RMFOs to prepare Regional Plans of Action for Sharks but we find that sustainable management of sharks is still largely absent around the globe.").

[55] WildAid, *End of the Line*, *supra* n. 6, at 19.

[56] R.I. Sea Grant, *Fact Sheet*, *Bycatch*, http://seagrant.gso.uri.edu/factsheets/Bycatch.html (accessed Nov. 21, 2010); *see also e.g.* G.L. Lugten, *Soft Law with Hidden Teeth: The Case for a FAO International Plan of Action on Sea Turtles*, 9 J. Intl. Wildlife L. & Policy 155, 158, (2006) (explaining that bycatch mortality of non-fish species, including sharks, is "a major conservation problem").

[57] *See generally* NOAA, *NOAA's Fisheries Service Outlines Measures to Prevent Overfishing of Sandbar and Other Sharks*, http://www.noaanews.noaa.gov/stories2008/20080417_shark.html (Apr. 17, 2008) (accessed Nov. 21, 2010) (illustrating that bycatch continues to contribute to the decline of a protected species).

Governments and RFMOs currently do not regulate bycatch.[58] This gives rise to two problems: (1) without regulation there are no incentives or restrictions for the vessel operator to employ sustainable harvest practices;[59] and (2) this causes a lack of critical data, because fishing vessels are not required to collect data on unregulated catch. As a result, catch data is very limited where it does exist, and often is inaccurate.[60] This lack of data severely limits agencies' ability to accurately assess stocks and evaluate the effect of human exploitation in a timely manner. In turn, inadequate assessments and evaluations make it difficult to take measures to arrest the devastating decline of sharks, a species that can reach overfished status more rapidly than other species, thereby creating a crisis if unaddressed.[61]

C. Consumer Appetite, Affluence, Prestige, and Poverty: An Alchemy of Decrepitude

The decline of sharks is shocking. It is shocking not only because the statistics point to a drastic decline globally of shark populations by 80–90%, but also because that decline has happened in such a short period of time.[62] This severe decline is caused by an exploding consumer demand enabled by a relatively recent rise in the economic standing of a large portion of the earth's population, creating a convergence of forces that provoke a crisis of global proportion—appetite, affluence, prestige, and poverty.[63]

In Asia, the demand for shark fin is primarily to create shark fin soup, which was once a delicacy for only the very privileged.[64] Emperors and nobles alone dined on this otherwise tasteless concoction of stringy cartilage rendered from the fin,[65] serving it to guests on high

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[58] *See e.g.* NOAA, *International Bycatch*, http://www.nmfs.noaa.gov/ia/intlbycatch/ (accessed Nov. 21, 2010) (conveying the implementation of a task force to "further discussions" and "ultimately" reduce bycatch of turtles and sharks); S. Pascoe, FAO, *FAO Fisheries Technical Paper No. 370*, *Bycatch Management and the Economics of Discarding*, 2 (1997) (available at http://www.fao.org/docrep/010/w6929e/w6929e00.htm (accessed Nov. 21, 2010)) (demonstrating that although international organizations have been promoting the regulation of bycatch for more than a decade now, organizations are still grappling with actualizing this).

[59] *See* Joseph J. Kalo et al., *Coastal and Ocean Law*, 517 (3d ed., West 2007) (stating that "[i]n an unregulated fishery, no one is forcing fishermen to operate in a manner that conserves the fish stock. So, lacking any assurance that all of his competitors will also act to conserve the fishery resource there is simply no incentive for an individual fisherman (or government in a multinational fishery) to act to conserve the resource.").

[60] Watts & Wu, *supra* n. 32, at 6.

[61] *Sharks, Rays and Chimaeras: The Status of the Chondrichthyan Fishes. Status Survey* 2 (Sarah L. Fowler et al. eds., IUCN Publications 2005) (available at http://data.iucn.org/dbtw-wpd/edocs/2005-029.pdf (accessed Nov. 21, 2010)).

[62] WildAid, *End of the Line*, *supra* n. 6, at 3–4.

[63] *Id*.

[64] *Id*.

[65] Greenpeace, *Shark Finning Mystery*, *supra* n. 4.

occasions as a symbol of their affluence and prestige.[66] The recent creation of a flourishing middle class in the densely populated Asian nations puts this symbol of prestige and status within reach of many. In the 1980s, the Chinese government eased its official position discouraging the "elitist" practice of consuming shark-fin soup.[67] Since that time, demand for shark fin soup has exploded and shark populations have plummeted.[68] Many now add to the perceived pomp of largely attended events such as weddings or banquets for a stately occasion with a dish that was once a luxury accorded only to emperors.[69] It is a twisted irony that serving this soup carries such prestige when you understand that the plastic-looking, flavorless, spaghetti-like strands of the exotic shark's fin must be propped up for the palate by a common solution of chicken broth for flavor.[70]

Juxtaposed with the perceived glamour of shark fin soup is poverty—abject poverty. The supply for this seemingly insatiable market comes mostly from third world countries and developing nations: Indonesia, India, Argentina, Brazil, Iran, Malaysia, Mexico, Pakistan, Sri Lanka, Taiwan, and Thailand.[71] Fishers of any country are generally not at the top economic strata, but in these nations this fact reaches hardly imaginable extremes.[72]

The shark fin market is wildly lucrative. A pound of dried fins can fetch between $300 and $500 USD.[73] Fins from the very largest sharks, such as the basking shark, can bring in tens of thousands of

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66 WildAid, *End of the Line*, *supra* n. 6, at 8; *see also* The Pew Charitable Trusts, *Saving Jaws*, *supra* n. 14, at 3 (noting that the fin is sought not only as a prestige symbol but also to improve men's sexual potency).

67 HSI, *Dying for a Bowl of Soup*, *supra* n. 48.

68 *Id.*

69 Grace Tsoi, The Standard, *Nuptial Diners Try to Save Face, Not Sharks*, http://www.thestandard.com.hk/news_detail.asp?pp_cat=11&art_id=70866&sid=20362576&con_type=3 (Aug. 28, 2008) (accessed Nov. 21, 2010).

70 HSI, *Dying for a Bowl of Soup*, *supra* n. 48.

71 WildAid, *End of the Line*, *supra* n. 6, at 16.

72 *See e.g.* Gazi Md. Nurul Islam et al., *Augmenting Fishers' Welfare and Livelihood Assets Through Community Based Management in Bangladesh*, http://www.indiana.edu/~iascp/bali/papers/Islam_Gazi_Md_Nurul.pdf (accessed Nov. 21, 2010) (describing the fishers in Bangladesh as largely illiterate, landless, extremely poor, and reliant on others for their livelihoods); *see also e.g.* Intl. Collective in Support of Fishworkers (ICSF), *South African Minister, Fishers Taken to Court by Rock Lobster Association*, http://www.illegal-fishing.info/item_single.php?item=news&item_id=3467&approach_id= (Mar. 9, 2008) (accessed Nov. 21, 2010) (highlighting the deplorable living conditions of a fisherman).

73 *See e.g.* Lisa Ling, CNN.com/Asia, *Shark Fin Soup Alters an Ecosystem*, http://www.cnn.com/2008/WORLD/asiapcf/12/10/pip.shark.finning/index.html (Dec. 15, 2008) (accessed Nov. 21, 2010) (reporting that fins can sell for as much as $500 USD per pound); Hank Pellissier, *Shark Fin Soup*: *An Eco-Catastrophe?*, http://www.sfgate.com/cgi-bin/article.cgi?file=/G/archive/2003/01/20/urbananimal.DTL (Jan. 20, 2003) (accessed Nov. 21, 2010) (commenting on reports of shark fins in San Francisco selling for $328 USD).

dollars.[74] One bowl of shark-fin soup will generally cost around $100 USD.[75] Known as "white gold," the shark-fin industry is reported to bring in profits exceeding $500 million USD annually.[76] Although the fishers do not receive these astronomical payments, they still make more than they would with the targeted catch.[77] In the developing countries primarily involved with supplying shark fins to the market, these enormous profit incentives operate to keep governments at odds with their regulatory agencies. The consumer appetite is voracious, the compelling social mystiques are powerful, and the poverty that supplies the two keeps a corrupting avarice well entrenched in the illegal business of depleting the oceans of sharks.

D. Shark-and-Chips

The rising consumer demand for shark fin soup is primarily responsible for endangering sharks, but it is not the sole cause. Sharks have recently become mass consumer table food due to other anthropogenic[78] pressures on the oceans' fish populations. Known as "rock salmon,"[79] shark is now served in place of cod or pollock in Britain's trademark pub food "fish-and-chips"[80] because there is substantially less cod available on a commercial basis. Cod has been seriously overfished.[81] Britain now ranks as the fourth-largest shark fishing nation in Europe.[82]

This is the true story of the actual domino effect of overfishing and its ecological trail of collapse.[83] In the 1990s, cod fisheries on both

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[74] *See* Earthdive.com, *Shark Finning Up 500 Percent*, http://www.earthdive.com/site/news/newsdetail.asp?id=2526 (Apr. 3, 2008) (accessed Nov. 21, 2010) (reporting that a single fin from a basking shark can sell for $62,000).

[75] HSI, *Dying for a Bowl of Soup*, *supra* n. 48.

[76] *Id*.

[77] *See e.g.* Greenpeace, *Shark Fin Mystery*, *supra* n. 4 (noting that the bycatch of shark fin can bring in seventy times or more the price for the targeted catch, making it valuable to the fishers and the fishery owners and increasing incentives to continue to harvest).

[78] *See Webster's Third New International Dictionary of the English Language Unabridged* 93 (Philip Babcock Gove ed., 3d ed., Merriam-Webster Inc. 1993) (defining "anthropogenic" as "involving the impact of man on nature").

[79] WildAid, *End of the Line*, *supra* n. 6, at 8.

[80] Louise Gray, Telegraph Media Group, *Actor Ted Danson Blames Fish and Chips for Shark Extinction Threat*, http://www.telegraph.co.uk/news/uknews/2964566/Actor-Ted-Danson-blames-fish-and-chips-for-shark-extinction-threat.html (Sept. 15, 2008) (accessed Nov. 21, 2010); *see also* Explore Te Ara: The Encyclopedia of New Zealand, *Sharks as Food*, http://www.teara.govt.nz/EarthSeaAndSky/SeaLife/SharksAndRays/3/en (accessed Nov. 21, 2010) (explaining that sharks are eaten in fish-and-chips in New Zealand).

[81] *See* Greenpeace, *Canadian Atlantic Fisheries Collapse*, http://archive.greenpeace.org/comms/cbio/cancod.html (accessed Nov. 21, 2010) (detailing the decline in cod populations).

[82] Richard Black, BBC News, *Clampdown Urged on Shark Finning*, http://news.bbc.co.uk/2/hi/science/nature/7618802.stm (Sept. 16, 2008) (accessed Nov. 21, 2010).

[83] HSI, *Shark Biology Contributes to Population Decline and Fishery Collapses*, http://www.hsus.org/hsi/oceans/sharks/more_about_sharks/shark_biology_contributes_

sides of the Atlantic collapsed.[84] Cod, the original fish on the menu for fish-and-chips, is no longer available. Nearly twenty years have passed since the fisheries' collapse. Despite closing cod fisheries and other conservation efforts, cod stocks have failed to recover.[85] Thus, human attempts to rehabilitate cod populations go unrewarded. It was in that same time period, the 1990s, that Europeans turned to sharks, the Spiny Dogfish, and the Porbeagle, to provide an adequate and palatable substitute for the much-enjoyed traditional dish. But like much commercial fishing, fishing for Spiny Dogfish and Porbeagle was not approached sustainably.[86] In the waters surrounding the European Union (EU) these two species are now themselves on the verge of collapse. The Spiny Dogfish and the Porbeagle are in such steep decline in European waters that, at the fourteenth Conference of the Parties (CoP14) to the Convention on International Trade in Endangered Species (CITES), the EU proposed designating these two species as endangered and listing them on CITES Appendix II.[87]

This cycle of fishing to depletion and then moving on to other fish stocks in other areas, called "pulse fishing,"[88] plays out globally. Developed countries that deplete their fish stocks move to developing countries that are willing to sell permits to intensively fish their waters. One example is the arrangement between EU fisheries and Senegal.[89] This practice is increasing as modern technology provides an unprecedented ability to find fish with unerring precision and harvest in

to_population_decline.html (Apr. 2007) (accessed Nov. 21, 2010) ("[T]he plan to use the dogfish as an economic bridge while other species recovered was a spectacular failure, resulting in the decimation of dogfish populations in the western Atlantic. Within a handful of years, scientists were warning that populations would take decades to recover—if they recovered at all. They are now being proposed for special international protection.").

84 Gene S. Helfman, *Fish Conservation: A Guide to Understanding and Restoring Global Aquatic Biodiversity and Fishery Resources*, 271–72 (Is. Press 2007); Hunter et al., *supra* n. 44, at 691–92.

85 Rob Stewart, *Fisheries Issues*, http://oceanworld.tamu.edu/resources/oceanography-book/fisheriesissues.htm (accessed Nov. 21, 2010) ("Even if left alone, the northern cod may never recover. Industrial technology and human greed may have so decimated these hardy fish that they can no longer hold onto their ecological niche. The crash could be irreversible.").

86 WildAid, *End of the Line*, *supra* n. 6, at 18.

87 The proposals failed to pass the two-thirds super majority needed for listing a species. Species Survival Network, *Results of CITES CoP14 Proposals to Amend Appendices I and II*, http://www.ssn.org/Meetings/cop/cop14/Other/CoP14_results.pdf (Jun. 3–15, 2007) (accessed Nov. 21, 2010).

88 Colin W. Clark, *The Worldwide Crisis in Fisheries: Economic Models and Human Behavior*, 116 (Cambridge U. Press 2006).

89 BBC News, *Senegal Agrees to EU Fishing Deal*, http://news.bbc.co.uk/2/hi/business/2069425.stm (June 27, 2002) (accessed Nov. 21, 2010); Intl. Union for Conserv. of Nat. (IUCN), *Learning a New Trade to Save Sharks in Senegal*, http://www.iucn.org/about/work/programmes/species/about_ssc/sir_peter_scott_fund/psf_projects/psf_shark_meat_trade/?1374/Learning-a-new-trade-to-save-sharks-in-Senegal (July 25, 2008) (accessed Nov. 21, 2010) (Senegal's waters also host shark populations).

volumes that exceed that species' ability to recover.[90] As fisheries in one species collapse, the fishing industry turns to another species that will provide a reasonable market substitute.[91] Species never before sought suddenly become the target before sufficient fishery data can be collected to harvest sustainably and effectively manage stocks.[92] Such is the situation with sharks.[93]

As an apex predator, the shark is not biologically intended to be preyed upon in the massive quantities that modern commercial fishing harvests.[94] Essentially, sharks are not meant to satisfy the appetite of a global population of humans.[95] Shark-and-chips is not on the "sustainable menu." It is the result of unsustainable fishing practices and is now the cause of further unsustainable dining and fishing practices.

E. Finning as Cruelty

The practice called "finning" stands out in its barbaric cruelty. The majority of sharks caught are finned alive.[96]

Finning is extremely wasteful as well as being gruesomely cruel. Notwithstanding the current practice of substituting the meat of cer-

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[90] NOAA, *United States National Plan of Action for the Conservation and Management of Sharks* 6, 8 (Feb. 2001) (available at http://www.nmfs.noaa.gov/sfa/Final%20NPOA.February.2001.pdf (accessed Nov. 21, 2010)) [hereinafter *NPOA-U.S.*] ("Modern technology, greater access to distant markets, and the depleted status of many traditionally targeted species have also led to directed fishing effort on previously non-targeted species, including [sharks] . . . . [O]verfishing of sharks can occur rapidly with extended periods (often decades) required to rebuild.").

[91] *Id*. at 8 ("Furthermore, the depletion of traditionally higher-value species can lead to increased directed fishing on sharks.").

[92] *Id*. at 5–6 ("[T]he assumptions used in some fisheries models . . . are not always appropriate and can make stock assessments and management of [sharks] difficult. [This is] further complicated because of the mobility of many species across political boundaries, even across oceans; a general lack of baseline information about the practices employed in shark fisheries worldwide; incomplete data on catch, effort, landings, and trade; and a lack of information on the biological parameters, importance of specific habitats to productivity, and population dynamics of many species. Furthermore, the historically low economic value of shark and ray products compared to other fishes has resulted in research and conservation of these species being a lower priority than for traditionally high-value species . . . Many fishery managers must now assess and manage shark fisheries without the benefit of the long-term, high-quality databases available for more traditionally high-value species.").

[93] *Id*. at 8 ("[T]he sustainability of shark stocks is of international concern. . . . overfishing of sharks can occur rapidly with extended periods (often decades) required to rebuild.").

[94] WildAid, *End of the Line*, *supra* n. 6, at 15 (calling out the Spiny Dogfish as a prime example of a species that demonstrates that sharks are not intended for heavy predation, because that is one of the two species of shark primarily served as a substitute for cod).

[95] *Id*. at 18.

[96] *Id.* at 20 ("Some shark species are able to survive for long periods on hooks."). In two studies conducted, 86–88% of sharks were alive when they landed on deck after getting caught on longlines. *Id.*

tain shark species for outfished cod, fisheries take sharks primarily for their fins.[97]

The shark's flesh fetches very little money compared to its fins and compared to the target catch (most often tuna).[98] Keeping the shark's body means giving over limited cargo space that could go to a more marketable and more valuable catch.[99] As a result, the only thing that the fishers want is the prized fin: it does not take much space and it provides hefty returns.[100] The large, unprofitable body is dumped back into the ocean, wasting 95–98% of the shark.[101]

F. Out of Sight, Out of Mind

Who wants to hug a shark? What Sea World display will leave a child's heart dancing at the sight of this streamlined, monster phantom of the deep? Where are the *Free Willy* movies and posters for this animal from *Jaws*?

Exaggerated analogies? Well, only to some extent. Hollywood, popular culture, and primal fears have put these magnificent and interesting members of the oceans' ecosystems on the margins of our affinities, or excluded them altogether.[102] Add to this reality the fact that the oceans' remoteness obscures from our view—and hence removes from our attention—the cruel drama of finning, the wastage of monolithic proportions, and the effects of both these practices on a delicate and life-giving ecosystem. These circumstances introduce a particular challenge as we grapple with the urgency of the plight of the shark. We can only take action when we are motivated to do so, and we are so motivated only when we are confronted with the need to change. While we must develop an understanding of sharks' importance to the oceans and to ourselves by extension, it is difficult to raise public concern to mobilize political will for a species that typifies our worst fears and most gruesome nightmares. We must build the awareness to foment political will.

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97 IUCN, *Shark Finning* 2, http://www.flmnh.ufl.edu/fish/organizations/ssg/iucn-sharkfinningfinal.pdf (June 2003) (accessed Nov. 21, 2010).

98 The Pew Charitable Trusts, *Saving Jaws*, *supra* n. 14 ("The meat of most sharks has a high urea content and needs careful processing to remain fresh. Even when fresh, it was generally worth only pennies a pound. Shark fins, however, are worth a great deal.").

99 ARKive, *Shark Finning Crackdown*, http://www.arkive.org/news/20090429-shark-finning-crackdown.html (Apr. 29, 2009) (accessed Nov. 21, 2010); *see also* HSI, *Dying for a Bowl of Soup*, *supra* n. 48.

100 WildAid, *End of the Line*, *supra* n. 6, at 22.

101 IUCN, *Shark Finning*, *supra* n. 97, at 2.

102 Ling, *supra* n. 73 ("There is no animal on earth more vilified than the shark. Pop culture references and annual, over-hyped reports of attacks on swimmers or surfers have put sharks on the top of the list of the world's most feared living things.").

G. *Preying on the Predators: An Algorithm for Unsustainability*

> There is however a creature far more predacious than the shark: Humans.[103]

Commercial fishing for sharks, targeted or as bycatch, has turned nature's biological scheme on its head. As an apex predator, sharks are not biologically engineered to be prey.[104] They are meant to be few to keep the many in control.[105] They are not biologically suited for "heavy predation,"[106] like the high volume, continuous "harvesting" of commercial fishing.[107] Sharks do not have a high recovery rate or the biological tolerance and resiliency to recover the way prey fish do.[108] Unlike prey species, sharks cannot produce more eggs or live young to take advantage of the additional food supply made available to them when their species is depleted.[109] Therefore, as they are killed, their depletion is accelerated, making them more vulnerable to extinction. Most sharks group together "by sex and size,"[110] which means that a single fishing operation can wipe out a whole group of mature breeding females, further reducing the species' ability to recover from the mass-scale incursions of the commercial fishing industry.[111] Unlike prey species that can thrive to very deep depths (as much as five and a half miles, or 9,000 meters, below the surface) and create a reserve stock to resupply fish when the stocks closer to the surface are fished out,[112] sharks' limited depth range makes them more vulnerable. Sharks are confined closer to the surface and this places all shark species within relatively easy reach of fisheries.[113] One hundred million sharks taken per year is a staggering number when you understand that the biology of this creature severely limits its ability to recover from such an unnatural onslaught.[114] This is the problem.

IV. PROTECTIONS ATTEMPTED

Since the mid-1990s, countries and international bodies have attempted to respond to the growing concern over the global status of shark stocks. This Part examines the key international treaties and agreements, and national laws, regulations, and enforcement measures that exist today.

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103 *Id*.
104 WildAid, *End of the Line*, *supra* n. 6, at 15.
105 Watts & Wu, *supra* n. 32, at 2.
106 WildAid, *End of the Line*, *supra* n. 6, at 15.
107 *See e.g.* Watts & Wu, *supra* n. 32, at 12 (speculating that shark populations in the waters around Panama are now "commercially extinct").
108 WildAid, *End of the Line*, *supra* n. 6, at 15.
109 *Id*.
110 *Id*.
111 *Id*.
112 *Id*.
113 *Id*.
114 Watts & Wu, *supra* n. 32, at 2.

A. International Regulation: Treaties and Agreements

The plight of the sharks has garnered international attention. In the past ten years, international bodies have been taking action. In 1999, the United Nations General Assembly (UN) enacted the International Plan of Action for the Conservation and Management of Sharks (IPOA-Sharks) to address the global problem of shark population decline.[115] The UN urged its members to fully implement the IPOA-Sharks, requesting that each member develop and implement a National Plan of Action-Sharks (NPOA-Sharks). The Convention on International Trade in Endangered Species (CITES), the Convention on Migratory Species (CMS), and Regional Fishery Management Organizations (RFMOs), have developed or are developing resolutions and plans of action that attempt to address the growing concern of wiping out this valuable fish stock by providing protection with conservation measures, industry regulations, and trade regulations. This Section reviews these international instruments, identifying when they were enacted, their scope and sphere of influence, whether they are legally binding or voluntary, and whether they incorporate provisions on the practice of finning.

1. International Plan of Action (IPOA-Sharks)

Aware of the urgent need for conserving and managing shark populations,[116] the UN implemented a voluntary, non-binding call to action,[117] IPOA-Sharks, at the twenty-third meeting of the UN's Food and Agriculture Organization (FAO) Committee on Fisheries (COFI)[118] in 1999. Based on the FAO's Code of Responsible Fisheries, another voluntary set of rules,[119] and the UN Straddling Stocks agreement, IPOA-Sharks promotes the precautionary approach,[120] advising that, where there is scientific uncertainty and a lack of data regarding the status of a resource, it is necessary to proceed carefully until better

115 FAO, *FAO Technical Guidelines for Responsible Fisheries No. 4: Conservation and Management of Sharks* 1 (2000) (available at ftp://ftp.fao.org/docrep/fao/003/x8692e/x8692e00.pdf) (accessed Nov. 21, 2010) [hereinafter *FAO Tech Guidelines*, *IPOA-Sharks*] ("The *IPOA-Sharks* was subsequently endorsed 23rd Session of COFI in Rome during 15–19 February 1999.").

116 *Id*. ("There is widespread concern over the increase of shark fishing and the consequences which this has for the populations of some shark species in several areas of the world's oceans. The prevailing view is that it is necessary to control directed shark fisheries and fisheries in which sharks constitute a significant bycatch.").

117 *Id.* at 2 (The IPOA-Sharks states that it is not a "strategic plan for the world," rather it is an encouragement to the UN member states comprising COFI and the RFMOs to responsibly manage shark fisheries for continued survival, hence continued harvesting of shark species.").

118 *Id.* at 1.

119 FAO, *FAO Code of Conduct for Responsible Fisheries* art. 1, http://www.fao.org/docrep/005/v9878e/v9878e00.HTM (1995) (accessed Nov. 21, 2010) [hereinafter *FAO Code of Conduct*].

120 *FAO Tech Guidelines IPOA-Sharks*, *supra* n. 115, at 2.

data is available to assess the impact of exploitation on the resource.[121]

The IPOA-Sharks encompasses both targeted and non-targeted shark catch.[122] Although it advises sustainable harvesting strategies[123] and encourages full use of the dead shark, minimizing discards,[124] nowhere does it definitively say anything about shark finning.[125] IPOA-Sharks is a general advisory to member states that have ocean territory to institute their own National Plan of Action (NPOA) of regulatory conservation measures to abate the over-exploitation of sharks, providing recommendations for the contents of the NPOA.[126]

2. Convention on International Trade in Endangered Species (CITES)

Established in 1963 at a meeting of the World Conservation Union—known as the International Union for Conservation of Nature (IUCN)[127]—and entered into force on July 1, 1975,[128] CITES is an international agreement between member nations to implement measures to prevent the extinction of species, animal or plant, from overexploitation due to international commercial trade.[129] CITES Members are legally bound by the Convention,[130] however CITES does not itself impose the regulations and enforcement that carry out the agreement. CITES provides a framework from which the Member States develop and implement legislation, regulations, and enforcement.[131]

CITES Appendices listings are the controls of the convention. Appendix I species are endangered with extinction if trade continues,[132]

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121 *FAO Code of Conduct*, *supra* n. 119, at art. 6 ("[A]pply a precautionary approach widely to conservation, management and exploitation of living aquatic resources in order to protect them and preserve the aquatic environment, taking account of the best scientific evidence available. The absence of adequate scientific information should not be used as a reason for postponing or failing to take measures to conserve target species, associated or dependent species and non-target species and their environment.").

122 *FAO Tech Guidelines*, *IPOA-Sharks*, *supra* n. 115, at 30.

123 FAO, *International Plan of Action for the Conservation and Management of Sharks* 14, ftp://ftp.fao.org/docrep/fao/006/x3170e/X3170E00.pdf (1999) (accessed Nov. 21, 2010) [hereinafter *IPOA-Sharks*].

124 *Id*.

125 *Id.*

126 *FAO Tech Guidelines*, *IPOA-Sharks*, *supra* n. 115, at 33.

127 CITES, *What is CITES?*, http://www.cites.org/eng/disc/what.shtml (accessed Nov. 21, 2010).

128 *Id*. CITES currently consists of 175 member nations. *See* CITES, *List of Contracting Parties*, http://www.cites.org/eng/disc/parties/alphabet.shtml (accessed Nov. 21, 2010).

129 *Id.*

130 *Id*.

131 *Id*.

132 CITES, *How CITES Works*, http://www.cites.org/eng/disc/how.shtml (accessed Nov. 21, 2010) [hereinafter CITES, *How CITES Works*].

ergo an Appendix I listing prevents Member States from conducting trade in that species, with a few stringent exceptions,[133] and requires that those States establish regulations and border controls to prevent such trade.[134] Appendix II species are threatened with the potential of becoming endangered if controls are not implemented.[135] Therefore, Member States may trade these species but must enact strict monitoring and reporting mechanisms to track their trade.[136] Appendix III, the least restrictive of the CITES listings, lists species that the "range state" requests help in monitoring and tracking.

CITES has a history with sharks starting in 1994 that led to what ultimately became the IPOA-Sharks.[137] Resolution 917, prepared at CITES ninth Conference of the Parties (CoP9), requested: (1) that the FAO and RFMOs collect data on the trade in shark product; and (2) that the nations engaging in fishing for sharks, targeted or not, cooperate with the data collection efforts.[138] Decision 10.48, prepared at the tenth Conference of the Parties (CoP10) in 1997, required CITES Parties to record the data requested in Resolution 917 and reduce bycatch as much as possible.[139] Despite those leading actions in shark conservation, protections in trade of sharks has been a protracted struggle producing very little yield. In the intervening years CITES has listed only three sharks, and only on Appendix II, despite the obvious link with trade over-exploitation.[140]

CITES does not specifically ban the practice of finning. Depending on the type of listing, regulations forthcoming for trade may, inter alia, eliminate or restrict the trade in shark fins among the shark products regulated for the species listed.

3. Convention on Migratory Species (CMS)

Adopted on June 23, 1979 in Bonn, Germany, and entered into force in 1983,[141] the Convention on Migratory Species (CMS) is also referred to as the "Bonn Convention."[142] It is a global intergovernmen-

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133 *Id*.

134 *Id*.; *see also* CITES, *The CITES Appendices*, http://www.cites.org/eng/app/index.shtml (accessed Nov. 21, 2010) (discussing the range of requirements for signatory states).

135 CITES, *How CITES Works*, *supra* n. 132.

136 *Id.*

137 Shark Trust, *Sharks and CITES: What's Been Achieved So Far?*, http://www.sharktrust.org/content.asp?did=26982 (accessed Nov. 21, 2009).

138 *Id.*

139 *Id*.

140 CITES, *Appendices I, II, and III: Valid from 24 June 2010* 28 (available at http://www.cites.org/eng/app/e-appendices.pdf (accessed Nov. 21, 2010)).

141 CMS Fam. Guide, *CMS History and Structure*, http://www.cms.int/publications/pdf/CMS_Family_Guide/CMS%20Family%20Guide%20Internet/History_Structure.pdf (Dec. 2009) (accessed Nov. 21, 2010).

142 CMS, *Frequently Asked Questions*, *On CMS*, http://www.cms.int/about/faqs_en.htm (accessed Nov. 21, 2010) [hereinafter CMS, *FAQs*].

tal organization operating under the auspice of the UN,[143] developed for and dedicated to the conservation of migratory species.[144] Though other treaties may deal in some capacity with migratory species (by example CITES and the Convention on Biological Diversity (CBD)), CMS is the only treaty dedicated to migratory species alone.[145]

Like CITES, CMS employs an appendix system for listing species that are endangered. Species threatened with extinction are listed on Appendix I.[146] Species that "would benefit from international cooperation" are listed on Appendix II.[147] Species may be listed on both CMS Appendices.[148] Unlike CITES, CMS does not limit its conservation efforts to addressing excesses of trade: CMS lists a migratory species because it is being driven toward extinction, whatever the cause.[149] Like CITES, CMS is a "framework Convention," providing a flexible framework from which Member States and Range States can develop species-specific agreements that incorporate national plans of action and local and regional regulations to address the specific issues raised for the species in jeopardy.[150] Nations that are signatories to the Convention may choose to abide by certain agreements and not others.[151]

> This calls for immediate . . . discussion.
>
> —*Life of Brian*[152]

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143 *Convention on the Conservation of Migratory Species of Wild Animals* art. IX, ¶ 2, (June 23, 1979) (available at http://www.cms.int/pdf/convtxt/cms_convtxt_english.pdf (Oct. 2003) (accessed Nov. 21, 2010)) [hereinafter *CMS Text*] ("The Secretariat is provided by the Executive Director of the United Nations Environment Programme.").

144 CMS, *FAQs*, *supra* n. 142.

145 *Id.*; *see also CMS Text*, *supra* n. 143, at "Chapeau" (stating that the treaty is "concerned particularly with those species of wild animals that migrate across or outside national jurisdictional boundaries"). The term "chapeau" in international law refers to a treaty's unnumbered introductory text. *See e.g.* Sanford Gaines, *The WTO's Reading of the GATT Article XX Chapeau: A Disguised Restriction on Environmental Measures*, 22 U. Pa. J. Intl. Econ. L. 739, 741 (2001) (stating that an "unnumbered introducing clause or paragraph covering several subsequent provisions is called a chapeau").

146 CMS, *Introduction to the Convention on Migratory Species*, http://www.cms.int/about/intro.htm (accessed Nov. 21, 2010) [hereinafter CMS, *Intro*].

147 *Id*.

148 *CMS Text*, *supra* n. 143, at art. IV, ¶ 2.

149 *See* CMS, *FAQs*, *supra* n. 142 (noting that migratory species are becoming rare for a variety of reasons); *see also CMS Intro*, *supra* n. 146 (stating that CMS strives towards "strictly protecting" migratory species).

150 *Id*.

151 *CMS Text*, *supra* n. 143. As of September 1, 2010, 114 countries are Parties to CMS. The U.S. is signatory to two Memoranda of Understanding (MOU): the MOU on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia and the MOU on the Conservation of Migratory Sharks; however, the U.S. is not a party to CMS. *See* CMS, *National Participation in the Convention on the Conservation of Migratory Species of Wild Animals and Its Agreements*, http://www.cms.int/about/all_countries_eng.pdf (updated Oct. 1, 2010) (accessed Nov. 21, 2010) (noting that the recommendation "applies only to sharks caught in association with fisheries managed by ICCAT").

152 *Life of Brian*, Motion Picture (Python (Monty) Pictures Ltd. 1979). Too close for parody, the statement by John Cleese's character in Monty Python's *Life of Brian* re-

Viewing the timeline for action emerging from recent efforts by the CMS to protect sharks gives a graphic example of the frustratingly protracted process involved in bringing effective remedy to a very urgent situation.

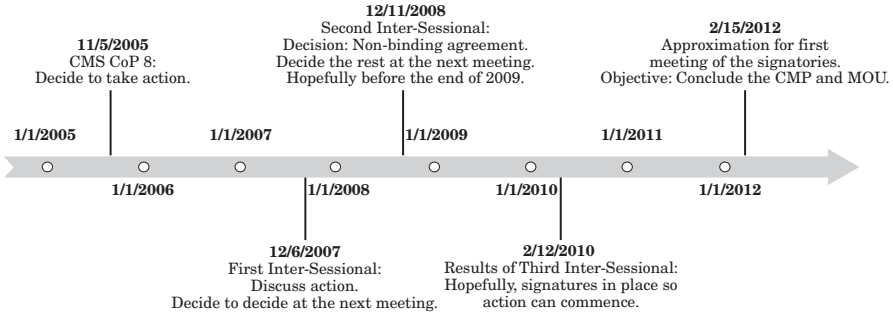

Figure 1: CMS SHARKS: Deliberation Timeline

Sharks took a "front and center" position in the attention of the members of CMS in 2005, but at this writing, five years at minimum will have passed before any substantive action is effectuated from decisions that emerged in 2005. That year, the delegates to the Convention determined that the situation with sharks (a migratory species, hence under CMS purview) was grave and that the UN's IPOA-Sharks was not sufficient to conserve them. The delegates decided that CMS should take action to form an agreement to bring the necessary conservation measures to bear, agreeing to meet to pursue that objective two years later.[153] At the 2007 meeting, however, the delegates could not decide the very crucial issue of whether to produce a legally or non-legally binding agreement, and so they decided to prepare drafts of both and decide yet another year later.[154] The 2008 meeting produced a decision to adopt a non-legally binding agreement—a Memorandum of Understanding (MOU)—yet they could not yet decide on its most

flects the situation oft repeated in forming international initiative when the stakes are high. CMS's efforts in shark conservation are a prime example.

153 CMS, *UNEP/CMS/Recommendation 8.16: Migratory Sharks*, http://www.cms.int/bodies/meetings/regional/sharks/pdf_docs/Inf_03_CP8Rec_8.16%20(Migratory%20Sharks).pdf (Nov. 2005) (accessed Nov. 21, 2010).

154 CMS, *UNEP/CMS/MS1/Report: Meeting to Identify and Elaborate an Option for International Cooperation on Migratory Sharks Under the Convention on Migratory Species*, http://www.cms.int/bodies/meetings/regional/sharks/Mtg_Reports/1st_Shark_Mtg_Report.pdf (Dec. 2007) (accessed Nov. 21, 2010) [hereinafter CMS, *First Mtg. Report*]; *see also* CMS, *UNEP/CMS/MS2/Doc/4/Rev.1: Agenda Item 9.2: Second Meeting on International Cooperation on Migratory Sharks Under the Convention on Migratory Species : Rome, Italy, 6–8 December 2008: Second Drafts Of Proposed Legally And Non-Legally Binding Instruments On Migratory Sharks*, http://www.cms.int/bodies/meetings/regional/sharks/Docs%20Rome%20Mtg/Shk2_Doc_04_Rev1_Proposed_draft_MoU_&_Agreement_E.pdf (Dec. 2008) (accessed Nov. 21, 2010) [hereinafter *CMS Drafts Proposed Instruments*] (mandating second drafts and a later meeting).

substantial provisions, the Action Plan and the scope of the agreement. These are the touchy, contentious points—the "meat," if you will—of the instrument—which species, which areas, target or non-target. As a result, the delegates agreed to meet the next year to take up the matter again, hopefully this time to conclude.[155]

Though the 2008 CMS meeting concluded with the objective of finalizing the document and gaining signatories before the close of 2009,[156] the third meeting, Sharks III, did not convene until February 2010.[157] Moreover, although Sharks III did come to consensus on the scope of shark species to include, did conclude the MOU to the point sufficient to open it for signatures, and did gain the requisite ten signatures to come into effect, it was not able to come to consensus on the content of the key component, the Action Plan, now known as the Conservation and Management Plan (CMP). This was put off until the next meeting—which will not convene until the end of 2011 or beginning of 2012.[158] Many range countries will not sign until the CMP is finalized, and, depending on the contents, they may not sign as resistance to placing limits, albeit voluntary, on such a commercially valuable resource.[159] As the sharks decline, time passes—2005 through 2012—eight years before any real action can begin. Such are the slow, grinding wheels of international deliberations. Whether this instrument effectively bans finning remains to be seen.

4. Regional Fisheries Management Organizations (RFMOs)

Regional Fisheries Management Organizations, RFMOs, are inter-regional, inter-governmental organizations of fisheries formed to develop rules and regulations for managing the oceans' fish resources for the benefit of all stakeholders.[160] RFMOs developed to implement the fisheries management provisions of two treaties enacted in the

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155 CMS, *Statement on the Outcome of the Meeting*, http://www.cms.int/bodies/meetings/regional/sharks/Docs%20Rome%20Mtg/Statement_on_outcome_of_the_Meeeting.pdf (Dec. 2008) (accessed Nov. 21, 2010) [hereinafter CMS, *Statement on the Outcome*].

156 *Id*. at ¶ 4(x).

157 IUCN, *Shark Specialist Group: Convention on Migratory Species*, http://www.iucnssg.org/index.php/convention-on-migratory-species (accessed Nov. 21, 2010).

158 *Id*.; *see* Intl. Inst. for Sustainable Dev., *Earth Negotiations Bulletin: Summary of the Technical Meeting for the Elaboration of a Conservation and Management Plan for Migratory Sharks and the Third Meeting on International Cooperation on Migratory Sharks under the Convention on Migratory Species and Wild Animals: 8–12 February 2010*, 18 Earth Negots. Bull. 6, 10–12 (Feb. 15, 2010), (available at http://www.iisd.ca/download/pdf/enb1840e.pdf. (accessed Nov. 21, 2010)) (summarizing the 2010 meeting).

159 *See id.* at 11–12 (stating that "potential signatories expressed their discomfort with signing an instrument whose primary implementation tool (i.e.[,] the Conservation Plan) could open a Pandora's box").

160 Michael W. Lodge et al., *Recommended Best Practices for Regional Fisheries Management Organizations* xviii (Royal Inst. of Intl. Affairs 2007) (available at http://www.chathamhouse.org.uk/files/10301_rfmo0807.pdf (2007) (accessed Nov. 21, 2010)) ("The FAO defines RFMOs as 'intergovernmental fisheries organizations or arrangements, as appropriate, that have the competence to establish fisheries conservation and management measures.'").

mid-twentieth century—the United Nations Convention on the Law of the Sea (UNCLOS), which instituted the development of Exclusive Economic Zones (EEZs) extending nations' jurisdictions from their traditional territorial waters out to 200 miles from their coastline; and the United Nations Fishing Stocks Agreement (UNFSA), the main purpose of which is to address issues resulting from high seas fisheries. RFMOs have a "management mandate" to develop measures that are binding on their members[161] and to coordinate, manage, and monitor the activities of high seas fisheries to encourage sustainable harvests of the oceans' marine resources.[162]

There are eighteen RFMOs worldwide,[163] ten of which either target sharks or take a significant amount of sharks as bycatch of their target catch—most often tuna.[164] This Section examines the regulations, or lack thereof, that these ten RFMOs have for harvesting sharks as target or bycatch, and in particular, for the practice of finning.[165]

Three RFMOs report that they have no targeted shark fisheries. They have no binding resolutions on shark catch and no position on finning. Where they do have text addressing sharks specifically, they advise—but do not require—their members to reduce bycatch and abide by the IPOA-Sharks. These are: the CCBSP (Convention on the Conservation and Management of the Pollock Resources in the Central Bering Sea) effective as of December 8, 1995, operating with the assistance of the Alaska Fisheries Scientific Council (AFSC);[166] the CCBST

161 FAO, *What Are Regional Fishery Bodies (RFBs)?*, http://www.fao.org/fishery/topic/16800/en (accessed Nov. 21, 2010).

162 For a general overview of RFMOs, the events that brought these intergovernmental conventions into being, and their purpose and structure, see Patricia Lee Devaney, *Regional Fisheries Management Organizations: Bringing Order to Disorder*, http://www.pon.org/downloads/ien14_4Devaney.pdf (accessed Nov. 21, 2010). Devaney evaluates the effectiveness of RFMOs and makes recommendations for addressing weaknesses and failings in the way they currently operate and the political structure within which they function. Ms. Devaney's paper is a product of Harvard Law School's Program on Negotiation.

163 Ministry of Fisheries, *Regional Fisheries Management Organisations*, http://fs.fish.govt.nz/Page.aspx?pk=103&tk=322 (updated June 26, 2009) (accessed Nov. 21, 2010); *see also* Rebecca Lent, *International Fisheries Management: Update and Emerging Issues for MAFAC*, http://www.nmfs.noaa.gov/ocs/mafac/meetings/2008_07/docs/NMFS_IA_MAFAC_Presentation_Final_(July_2008).ppt (July 2, 2008) (accessed Nov. 21, 2010) (including a map of RFMOs worldwide).

164 Watts & Wu, *supra* n. 32 at 5.

165 The ten RFMOs are addressed in this Section in alphabetical order.

166 *Convention on the Conservation and Management of the Pollock Resources in the Central Bering Sea*, *Record of Discussions* (Feb. 11, 1994) (available at http://www.afsc.noaa.gov/REFM/CBS/Docs/Convention%20on%20Conservation%20of%20Pollock%20in%20Central%20Bering%20Sea.pdf (accessed Nov. 21, 2010)); NOAA, *CCBSP Brief Description*, http://www.afsc.noaa.gov/refm/cbs/convention_description.htm (accessed Nov. 21, 2010); *see also* NOAA, *Gulf of Alaska Sharks* 1017, http://www.afsc.noaa.gov/REFM/docs/2007/GOAshark.pdf (Oct. 2007) (accessed Nov. 21, 2010) (stating that "[t]here is no directed fishery for sharks in the GOA at this time. However, spiny dogfish and Pacific sleeper sharks are taken incidentally in bottom trawl and longline

(Convention on the Conservation of Southern Bluefin Tuna) formalized in May 1994 to implement conservation and management measures for fisheries targeting Southern Bluefin Tuna (SBT);[167] and the GFCM (General Fisheries Council for the Mediterranean) entered into force in 1952 for the management of marine resources in the Mediterranean and the Black Seas and their interconnecting waters.[168]

The remaining seven RFMOs have binding resolutions on their members for managing shark catch, whether targeted or bycatch. These seven RFMOs require most or all of the following: retention of the sharks from which fins are removed at least until the first landing; compliance with a 5% fin-to-body ratio; species-specific data capture for some species; release of sharks that are incidentally taken but still alive; reduction of bycatch; reduction of waste and full utilization of the shark catch; annual reporting to the governing body on compliance with these measures; on-board observers monitoring; research to make fishing gear more selective; and the use of selective gear currently in existence. The RFMOs mentioned here are: the IATTC (Inter-American Tropical Tuna Commission), established in 1950 to manage fisheries taking tuna, or tuna-vessels fishing for species other than tuna in the eastern Pacific ocean;[169] the International Convention for the Conservation of Atlantic Tuna (ICCAT), entered into force in 1969, for the conservation of "tuna[ ] and tuna-like stocks in the Atlantic Ocean";[170] the Indian Ocean Tuna Commission (IOTC) established in 1996 to

fisheries, but most sharks are not retained."); NOAA, *18 BASAI Sharks* 1035, http://www.afsc.noaa.gov/REFM/docs/2007/BSAIshark.pdf (Dec. 2007) (accessed Nov. 21, 2010) (stating that "[t]here have been no directed fisheries for sharks in the Bering Sea or Aleutian Islands (BSAI), but some incidental catch of sharks results from directed fisheries for commercial species.").

167 CCBST, *About the Commission*, http://www.ccsbt.org/docs/about.html (accessed Nov. 21, 2010); Commn. for the Conserv. of S. Bluefin Tuna, *Recommendation to Mitigate the Impact on Ecologically Related Species of Fishing for Southern Bluefin Tuna*, http://www.ccsbt.org/docs/pdf/about_the_commission/Recommendation_ERS.pdf (Oct. 14–17, 2008) (accessed Nov. 21, 2010) (stating that "Members and Cooperating Non-Members will, to the extent possible, implement . . . the International Plan of Action for the Conservation and Management of Sharks (IPOA-Sharks) . . . .").

168 FAO, GFCM, *GFCM Recommendations on Mediterranean Fisheries Management (no Resolutions)* 12, ftp://ftp.fao.org/FI/DOCUMENT/gfcm/web/GFCM_Recommendations2005.pdf (2005) (accessed Nov. 21, 2010) ("[A]pplies only to sharks caught in association with fisheries managed by ICCAT."); FAO, GFCM, *Regional Fisherys Bodies Summary Description*, http://www.fao.org/fishery/rfb/gfcm/en (accessed Nov. 21, 2010).

169 IATTC, *IATTC*, http://www.iattc.org/HomeENG.htm (accessed Nov. 21, 2010); Inter-Am. Tropical Tuna Commn., *Resolution on the Conservation of Sharks Caught in Association with Fisheries in the Eastern Pacific Ocean*, http://www.iattc.org/PDFFiles2/Resolutions/C-05-03-Sharks.pdf (June 20–24, 2005) (accessed Nov. 21, 2010).

170 IATTC, *ICCAT Introduction*, http://www.iccat.int/en/introduction.htm (accessed Nov. 21, 2010); IATTC, *Compendium Management Recommendations and Resolutions Adopted By ICCAT for the Conservation of Atlantic Tunas And Tuna-Like Species* 50-57, http://www.iccat.int/Documents/Recs/ACT_COMP_2007_ENG.pdf (Dec. 2007) (accessed Nov. 21, 2010) [hereinafter ICCAT Resolutions].

manage tuna and tuna-like species in the Indian Ocean;[171] Northwest Atlantic Fisheries Organization (NAFO) founded in 1979 "to contribute through consultation and cooperation to the optimum utilization, rational management and conservation of the fishery resources" in the Northwest Atlantic Ocean;[172] the Northeast Atlantic Fisheries Commission (NEAFC) grew out of agreements initiated in the 1930s by the United Kingdom to address the issue of overfishing entered into force in 1963;[173] Southeast Atlantic Fisheries Organization (SEAFO) entered into force in April 2006 for conservation and management of fishery resources in the Southeast Atlantic Ocean;[174] the Western and Central Pacific Fisheries Commission (WCPFC) entered into force in June 2004 the conservation and management of highly migratory fish in the Western and Central Pacific to ensure their long-term use.[175] In addition to the ratio-compliance measure, the WCPFC retains the option of requiring fins to be attached to the carcass.[176]

B. National Regulation and NPOA-Sharks

Although not an exhaustive investigation into shark conservation laws and regulations by every nation, this Section looks at five sovereign entities as a representative sample of what exists, or does not exist, at the national level to conserve sharks as a marine resource: the U.S., the European Union (EU), Costa Rica, Taiwan, and China. Looking at the U.S. as an example of the country with the strongest in na-

171 IOTC, *Collection of Resolutions and Recommendations by the Indian Ocean Tuna Commission* 78, http://www.iotc.org/files/proceedings/misc/ComReportsTexts/resolutions_E.pdf (updated Apr. 2010) (accessed Nov. 21, 2010) [hereinafter *IOTC Resolutions*]; IOTC, *Welcome to the IOTC Website*, http://www.iotc.org/English/index.php (accessed Nov. 21, 2010).

172 NAFO, *About*, http://www.nafo.int/about/frames/about.html (accessed Nov. 21, 2010); N.W. A. Fisheries Org., *NAFO Conservation and Enforcement Measures*, http://www.nafo.int/fisheries/CEM/cem-toc.html (accessed Nov. 21, 2010).

173 NEAFC, *History of NEAFC*, http://archive.neafc.org/about/history.htm (accessed Nov. 21, 2010); *see also* E-mail from Kjartan Hoydal, Sec., NEAFC, to Paula Walker, *NEAFC Fisheries Information Request* (May 6, 2009, 12:28 a.m. PDT) (on file with *Animal Law*) (stating that "[f]inning is banned and enforced under our Scheme of Control and Enforcement"). Though the author could not find corroborating documents on the NEAFC website, this claim is corroborated elsewhere. *See* Press Release, NEAFC, *Press Release 4* (Nov. 20, 2006) (available at http://www.greenpeace.org/raw/content/international/press/reports/neafc-press.pdf (accessed Nov. 21, 2010)) (stating that a finning ban will continue but providing no further detail); Shark Alliance, *Shark Fisheries: Shark Finning*, http://www.sharkalliance.org/content.asp?did=940 (accessed Nov. 21, 2010) (noting that the NEAFC, among other RFMOs, bans the practice of finning).

174 SEAFO, *Conservation Measure 04/06 on the Conservation of Sharks Caught in Association with Fisheries Managed by SEAFO*, http://www.seafo.org/Cons%20&%20Mngt%20Measures/2006%20conservation%20measures/conservation%20measure%2004_06.pdf (Apr. 10, 2006) (accessed Nov. 21, 2010).

175 WCPFC, *Conservation and Management for Sharks: Conservation and Management Measure 2009-04*, http://www.wcpfc.int/doc/cmm-2009-04/conservation-and-management-sharks; *select* CMM 2009-04[sharks].pdf (Dec. 11, 2009) (accessed Nov. 21, 2010); WCPFC, *Home*, http://www.wcpfc.int/ (accessed Nov. 21, 2010).

176 *Id*.

tional initiatives, this Section examines the U.S.' NPOA-Sharks (US-NPOA), as well as the existing and proposed national laws and regulations that govern the U.S.' shark fisheries, and the practice of finning. The EU is examined as another developed nation with a growing market of its own for shark meat that also has several member states with thriving shark fisheries that are based on supplying the EU as well as the Asian market demands for shark products.[177] Costa Rica and Taiwan are examined as countries at the center of the underworld syndicated trade in shark fins. China is included in brief comment only because it is the point source of the skyrocketing demand for shark fin, but lacks regulations in this area.

1. The United States

The U.S. has been in a lead role in shark conservation initiatives for the last ten years. As a leading participant working with the United Nations Food and Agriculture Organization (FAO), the U.S. was instrumental in moving the global community toward taking concrete measures for shark conservation.[178] The UN International Plan of Action-Sharks (IPOA-Sharks) is the result of U.S. negotiations with other fishing nations that concluded in the fall of 1998.[179] As directed by the IPOA-Sharks, in 2001, the U.S. was the first country to create a National Plan of Action (NPOA) for Sharks (NPOA-Sharks), approximately three years before any other nation.[180]

Even before completing its NPOA, the U.S. was the first nation to pass legislation prohibiting the practice of shark finning with the Shark Finning Prohibition Act (SFPA).[181] The methods it used for determining compliance have been modeled by other nations and inter-

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[177] *See e.g.* Sarah Fowler et al., *Plan of Action for the Conservation and Management of Sharks in UK Waters*, http://www.jncc.gov.uk/pdf/jncc360.pdf (Aug. 2004) (accessed Nov. 21, 2010) [hereinafter *NPOA-UK*] (claiming that "[t]he UK exports porbeagle shark, spurdog, and ray wings to mainland Europe and raw shark fin to East Asia for processing. The EU also imports spurdog and porbeagle shark from New Zealand and from over-exploited stocks in the USA and Canada."); Shark Alliance, *French Fishery Threatens Critically Endangered Sharks*, http://www.sharkalliance.org/content.asp?did=34501 (Dec. 14, 2009) (accessed Nov. 21, 2010) (stating that "Porbeagle meat is among the most prized of all shark meat and particularly valuable in Europe."); Shark Alliance, *Spain: A Driving Force in Shark Fishing Around the World*, http://www.sharkalliance.org/publications.asp?language=1; *select* Spain a Driving Force in Shark Fishing Around the World (pdf) (June 3, 2009) (accessed Nov. 21, 2010) (stating that sharks "are among the ocean's most vulnerable animals and Spain is a driving force behind their catch, trade and depletion.").

[178] *NPOA-U.S.*, *supra* n. 90, at 18.

[179] *Id*. at 7.

[180] *See* FAO, *International Plan of Action for the Conservation and Management of Sharks*, http://www.fao.org/fishery/ipoa-sharks/npoa/en (accessed Nov. 21, 2010) (listing COFI member states (countries), that have an NPOA-Sharks) [hereinafter *FAO List of Published NPOAs*]; *NPOA-UK*, *supra* n. 177, at 14 (The JNCC document dates and the FAO dates conflict. The FAO lists the UK's NPOA published in 2001, however the document itself is dated 2004.).

[181] Pub. L. No. 106-557, 114 Stat. 272 (2000).

governmental bodies that have since developed bans on shark finning.[182]

This Section examines the key national laws and regulations that comprise the U.S.'s legal framework for shark conservation. In large part, these laws and regulations demonstrate a serious commitment by the U.S. to managing and conserving shark populations, as well as influencing the international community to do the same. This Section considers: (a) the U.S. NPOA-Sharks (US-NPOA) developed in compliance with the IPOA-Sharks—promoted in large measure by the U.S.; (b) current legislation intended to ban the practice of finning; and (c) regulations recently adopted by the National Marine Fisheries Service (NMFS) that move us closer to achieving a total ban.

a. U.S. NPOA-Sharks

The US-NPOA sets out guidelines for regulating and managing the taking of sharks by all U.S. fisheries. It also applies to fishing activities conducted by any other nations within the U.S.' territorial waters and exclusive economic zone (EEZ).

The EEZ is the jurisdictional area extending seaward from the territorial waters of the U.S.—generally twelve nautical miles from the coastline[183]—out to 200 miles off the coast.[184] It is an extension of national jurisdiction over areas once considered the "high seas" and therefore freely accessible to all.[185] President Truman initiated the EEZ in 1945 through the *Truman Proclamations*, which extended the U.S. coastal jurisdiction to include the continental shelf, retaining the freedom of navigation passage[186] and eliminating the traditional twelve-nautical-mile limit of the territorial sea, thus setting the stage for what would eventually be codified as the EEZ.[187] Other countries

182 *See FAO List of Published NPOAs*, *supra* n. 180.

183 U.S. Off. of Coast Survey, *U.S. Maritime Zones/Boundaries*, http://www.nauticalcharts.noaa.gov/csdl/mbound.htm (accessed Nov. 21, 2010); *see also* Natl. Pub. Radio, *Panel: Create Federal Ocean Agency*, http://www.npr.org/templates/story/story.php?storyId=1844478 (contains link to image); *select* Full image of U.S. waters, with more details (accessed Nov. 21, 2010) (providing a full map of the U.S. EEZ).

184 Hunter et al., *supra* n. 44, at 738–41 (The EEZ was established internationally in 1982 with the entry into force of the United Nations Convention on the Law of the Sea (UNCLOS).).

185 *See id*. at 737 (describing the "freedom of the seas" doctrine, whereby all nations have unimpeded access to travel all oceans and take resources found there because oceans are a "global commons").

186 S. N. Nandan, *The Exclusive Economic Zone: A Historical Perspective*, http://www.fao.org/docrep/s5280T/s5280t0p.htm (accessed Nov. 21, 2010).

187 For the complete text of both declarations that together comprised the *Truman Proclamations* No. 2667, and 2668, dealing with the Continental Shelf and Coastal Fisheries Policies respectively, *see* Exec. Procl. 2667, 10 Fed. Reg. 12303 (Sept. 28, 1945) (extending U.S. jurisdiction to include the continental shelf); Exec. Procl. 2668, 10 Fed. Reg. 12304 (Sept. 28, 1945) (establishing conservation zones in the continental shelf and regulating fishing therein); *see also* Hunter et al., *supra* n. 44, at 738 (summarizing the *Truman Proclamations*' extension of U.S. jurisdiciton over the continental shelf and fisheries off the coast).

quickly followed suit, and the trend continued for the next thirty years, culminating in 1973 when the United Nations convened the Third Convention on the Law of the Sea (UNCLOS).[188] UNCLOS codified the 200 mile EEZ in an effort to counter, inter alia, the increasing conditions of ocean pollution and overfishing by bringing "an important part of the ocean's resources under national jurisdiction."[189] As a result, "[t]ogether national EEZs cover over 30% of the world's seas, approximately 90% of the commercial fisheries, and almost all the presently exploitable mineral resources."[190] EEZs give UNCLOS signatories and acceding parties jurisdictional control over, inter alia, all fishing activities in the zone.[191] Although the U.S. has declined to be bound by the entire Convention, it is a signatory, has complied with all but Part XI, and considers the remainder of the Convention "customary law."[192]

Covering U.S. territorial waters and the EEZ, the NMFS authored the US-NPOA with input from various stakeholders, stating that the U.S. "has committed to ensuring that shark fisheries are sustainable."[193] NMFS's scope covers direct shark catch[194] as well as incidental catch and bycatch.[195] Its objectives are derived from those of the IPOA,

188 Hunter et al., *supra* n. 44, at 739.

189 *Id*. at 741.

190 *Id*.; *see also* Robert Stewart, *Our Ocean Planet: Oceanography in the 21st Century—An Online Textbook: Coastal Zone*, *Exclusive Economic Zone*, http://oceanworld.tamu.edu/resources/oceanography-book/coastalzone.htm (accessed Nov. 21, 2010) (providing a global map of EEZs).

191 Hunter et al., *supra* n. 44, at 741.

192 *Id*. at 747 (stating that the U.S. objects to Part XI, the deep sea mining provisions); *see also* UN Div. for Ocean Affairs & Law of the Sea, *UNCLOS Status*, http://www.un.org/Depts/los/LEGISLATIONANDTREATIES/status.htm (updated Jan. 8, 2010) (noting the status of nations that have acceded or succeeded to the Convention, are still signatories, or neither).

193 *NPOA-U.S.*, *supra* n. 90, at 8.

194 *Id*. at 10, 22–23.

195 NOAA provides sources that describe bycatch as catch discarded in commercial and recreational fishing industries that may be injured as result of being caught and that may or may not survive. The MSA definition provided in the FSEIS defines bycatch as including both regulatory and economic discards. Regulatory discards, for example, include fish below weight or size limits, or in excess of bag limits. Economic discards include fish that have no market value. NMFS does not rely entirely on the MSA definition which also specifies bycatch as solely dead fish. NMFS additionally provides also for bycatch as the release of live fish and marine creatures other than fish. NMFS also makes some finer distinctions on what it includes in the bycatch classification. It does not include non-regulatory discard Atlantic HMS that are released as part of a scientific tag-and-release program in commercial fishing, and it also does not include certain species that are released as part of a recreational fishing catch-and-release program. These sources define "incidental catch" as fish and other creatures that are caught incidental to fishing operations that may or may not be discarded; and also as marine life that is by law protected from takings under the Marine Mammal Protection Act (MMPA) or the Endangered Species Act (ESA) that is unintentionally taken in the legal pursuit of another, unprotected species. *See* NOAA, *Final Supplemental Environmental Impact Statement: Regulatory Amendment 1 to the Atlantic Tunas, Swordfish, and Sharks Fishery Management Plan: Reduction of Bycatch, Bycatch Mortality, and Incidental Catch in the Atlantic Pelagic Longline Fishery* 1–2 (updated June 14, 2000) (available at

and are based on a framework consisting of national statutory law and regulations, interstate covenants controlling the take of cross-boundary marine resources, and state regulations regarding the resources within their coastal waters.[196]

The intent of the US-NPOA was to ensure that shark catch is sustainable, whether taken from directed or non-directed fisheries; to require utilization of all or most of the shark taken and minimize waste in discards; to assess and address threats to shark populations' ability to recover, paying special attention to those species known or suspected to be vulnerable or threatened; to develop and enhance frameworks for nations to cooperate in developing and implementing solutions; and to gather more and better data—species-specific data—to assist in achieving these objectives.[197] The US-NPOA relies on four main legal constructs for its force and effect: (1) the Magnuson-Stevens Fishery Conservation and Management Act of 1976 (MSA); (2) Fisheries Management Plans (FMPs); (3) Interstate Marine Fisheries Commissions (IMFCs); and (4) state agencies.[198] Of these, the MSA is the cornerstone. The others are the vehicles and the frameworks through which the MSA accomplishes its objectives for "fishery conservation and management,"[199] expressed as ten national standards that in most ways impose stricter measures than the objectives of the IPOA-Sharks.'[200] These objectives are conservation measures that address and prevent overfishing; promote rebuilding of stocks based on the best science available; allow for variations in fisheries; minimize costs (to the extent practicable); minimize bycatch and, where bycatch is unavoidable, minimize the resulting mortality; and consider the human impact—both economic and safety factors. Their execution does not discriminate between residents of different states, neither favoring nor disadvantaging any individual or entity.[201] The US-NPOA provides a comparison of the IPOA vis-à-vis the MSA standards, interspersed with the steps NMFS intends to execute to fulfill those standards.[202]

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http://www.nmfs.noaa.gov/sfa/hms/FSEIS_FINAL/FSEIS.final.section%201.pdf) (accessed Nov. 21, 2010)); NOAA, *Final Supplemental Environmental Impact Statement: Regulatory Adjustment 2 to the Atlantic Tunas, Swordfish, and Sharks Fishery Management Plan*; *Final Rule to Reduce Sea Turtle Bycatch and Bycatch Mortality in Highly Migratory Species Fisheries* 46–51 (July 2, 2002) (available at http://www.nmfs.noaa.gov/sfa/hms/BiOp_FSEIS.pdf) (accessed Nov. 21, 2010)); NOAA, *Stock Assessment and Fishery Evaluation (Safe) Report for Atlantic Highly Migratory Species* 376 (2008) (available at http://www.nmfs.noaa.gov/sfa/hms/Safe_Report/2008/HMS_SAFE_Report_2008_FINAL_FULL_DOCUMENT.pdf) (accessed Nov. 21, 2010)).

196 *NPOA-U.S.*, *supra* n. 90, at 8.

197 *Id.* at 7–8.

198 *Id.* at 8.

199 16 U.S.C. § 1851 (2006) (national standards for fishery conservation and management).

200 *Id.*; *NPOA-U.S.*, *supra* n. 90, at 20–21.

201 16 U.S.C. § 1851.

202 *NPOA-U.S.*, *supra* n. 90, at 19–21.

In response to the need to develop the capacity to manage marine resources in the newly formed EEZs, the MSA established eight Regional Fishery Management Councils (RFMCs).[203] It did this to achieve its fishery management objectives and promulgate its standards throughout the domestic fishing industry,[204] mandating each RFMC to produce, and amend as needed, an FMP—the primary conservation and management tool in working towards achieving the MSA objectives.[205] Particularly important to shark stock management, the FMP must contain elements implementing recommendations made by international organizations to which the U.S. is a party;[206] specify methods that are objective and measurable to determine predicatively when a fishery under the auspices of the FMP is at or near levels of overfishing; and, where overfishing exists or is being approached, require conservation measures, such as minimizing bycatch and the mortality thereof, to arrest the condition and rebuild the stock.[207]

The US-NPOA demonstrates the importance of state participation in achieving its objectives.[208] Because sharks are highly migratory species (HMS), regional, inter-regional, and inter-state cooperation, management, and planning are essential to developing effective management plans. Hence, the three IMFCs—the Atlantic IMFC,[209] the Gulf IMFC,[210] and the Pacific IMFC[211]—play a critical role in effecting the NPOA[212] by serving the goals of sustainable resource management by developing interstate fishery management plans (IFMPs) that advise the regional FMPs; acting in an advisory capacity to state and

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[203] 16 U.S.C. § 1852(a)(1) (2006). The RMFCs are the New England, Mid-Atlantic, South Atlantic, Caribbean, Gulf, Pacific, North Pacific, and Western Pacific Councils.

[204] *See* NOAA, *Regulatory Services: Regional Fishery Management Councils*, http://www.nmfs.noaa.gov/sfa/reg_svcs/councils.htm (accessed Nov. 21, 2010) (providing a short overview of the RFMCs and providing links to all eight).

[205] 16 U.S.C. § 1852(h)(1) (2006).

[206] 16 U.S.C. § 1853(a) (2006).

[207] *Id.*

[208] *NPOA-U.S.*, *supra* n. 90, at 8.

[209] A. Sts. Marine Fisheries Commn., *Interstate Fisheries Management: Program Goals*, http://www.asmfc.org/interstate.htm (accessed Nov. 21, 2010) (established in 1981 to replace and build upon the work of the State/Federal Fisheries Management Program initiated in 1971).

[210] Gulf Sts. Marine Fisheries Commn., *Gulf States Marine Fisheries Commission*, http://www.gsmfc.org/#:content@1 (accessed Nov. 21, 2010) (established in 1949 by an act of Congress to address the need for the five Gulf states to cooperatively manage the valuable marine resources of that region for sustainability and reduced waste).

[211] P. Sts. Marine Fisheries Commn., *An Overview of PSMFC*, http://www.psmfc.org/An_Overview_of_PSMFC (accessed Nov. 21, 2010) (established in 1947 to manage and develop the shared fishery resources for the states of the Pacific Coast, including California, Oregon, Washington, Idaho, and Alaska).

[212] NOAA, *NOAA Fisheries: Commissions*, *Fishery Commissions*, http://www.nmfs.noaa.gov/commissions.htm (accessed Nov. 21, 2010) (providing links to the Atlantic, Gulf, and Pacific Interstate Marine Fishery Commissions).

federal agencies and legislatures;[213] and developing law enforcement programs that coordinate the efforts of state and federal agencies and the U.S. Coast Guard, facilitating data exchange and problem identification amongst these entities to strengthen and boost enforcement efforts in this matrix of jurisdictions.[214]

State and federal management cooperation is essential as well. The states' jurisdictional boundaries extend three nautical miles seaward from their coastlines.[215] Many shark nurseries exist in the states' jurisdictional waters[216] where the states have sole authority for regulating fishing activities. When it comes to sharks, then, states' marine resources management agencies are in a critical position.

b. Current Legislation to Ban Finning

Between 1999 and 2000, in response to growing concern over the depletion of sharks worldwide due to the practice of finning, and in acknowledgement of the urgent need to reverse the trend, Congress considered five bills and a resolution to address the issue.[217] Each of

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[213] *See* A. Sts. Marine Fisheries Commn., *Interstate Fisheries Management: Program Goals*, http://www.asmfc.org/interstate.htm (accessed Nov. 21, 2010) (describing program goals and structure); *see also* Gulf Sts. Marine Fisheries Commn., *supra* n. 210 (describing the Commission's advisory capacity).

[214] *See* A. Sts. Marine Fisheries Commn., *Interstate Fisheries Management: Law Enforcement*, http://www.asmfc.org/law_enf.htm (accessed Nov. 21, 2010) (noting coordination of various federal agencies); *see also* Gulf Sts. Marine Fisheries Commn., *Gulf of Mexico Cooperative Law Enforcement Strategic Plan 2009–2012*, http://www.gsmfc.org/publications/GSMFC%20Number%20160.pdf (accessed Nov. 21, 2010) (detailing law enforcement activities in the Gulf of Mexico, including plans for coordinating with diverse state and federal agencies).

[215] *NPOA-U.S.*, *supra* n. 90, at 10 (listing the exceptions—Texas, Florida, and Puerto Rico—with state jurisdiction stretching nine nautical miles).

[216] *Id.* at 10–11.

[217] H.R. Cong. Res. 189, 106th Cong. (Sept. 27, 1999) (available at http://thomas.loc.gov/bss/; *select* 106th Congress; *search* "shark finning," *select* H.CON.RES.189 (accessed Nov. 21, 2010)) (providing that a resolution "[e]xpressing the sense of the Congress regarding the wasteful and unsportsmanlike practice known as shark finning," sponsored by Rep. Randy Cunningham (R-CA), passed the House of Representatives Nov. 1, 1999, was referred to Senate Committee on Nov. 19, 1999, and there remained); H.R. Res. 3078, 106th Cong. (Oct. 14, 1999) (available at http://thomas.loc.gov/bss/; *select* 106th Congress, *search* "shark finning," *select* H.R.3078 (accessed Nov. 21, 2010)) (introduced "to direct the Secretary of Commerce . . . to study the practice of shark finning" and the effects it was having on the shark populations of the Pacific Ocean, sponsored by Rep. Faleomavaega (D-American Samoa), was referred to House subcommittee on Oct. 19, 1999, and remained there.); H.R. Res. 3535, 106th Cong. (Jan. 27, 2000) (available at http://thomas.loc.gov/bss/; *select* 106th Congress, *search* "shark finning," *select* H.R.3535 (accessed Nov. 21, 2010)) (titled the "Shark Finning Prohibition Act," introduced to "amend the Magnuson-Stevens Fishery Conservation and Management Act to eliminate the wasteful and unsportsmanlike practice of shark finning," sponsored by Rep. Randy Cunningham (R-CA), passed the House and was referred to Senate committee on June 7, 2000, and remained there); H.R. Res. 5461, 106th Cong. (Oct. 12, 2000) (available at http://thomas.loc.gov/bss/; *select* 106th Congress, *search* "shark finning," *select* H.R.5461 (accessed Nov. 21, 2010)) (titled the "Shark Finning Prohibition Act," introduced to "amend the Magnuson-Stevens Fishery Conservation and Management

the bills proposed amending the MSA to include provisions prohibiting the practice of finning. One of the four, H.R. 5461, the Shark Finning Prohibition Act of 2000 (SFPA), introduced to the House on October 12, 2000,[218] and signed into law by President Clinton on December 21, 2000,[219] proposed "to eliminate shark-finning by addressing the problem comprehensively at both the national and international levels."[220]

At the national level, the SFPA directed NMFS to promulgate regulations within 180 days of enactment[221] making it unlawful for any person

> to remove any of the fins of a shark (including the tail) and discard the carcass of the shark at sea; to have custody, control, or possession of any such fin aboard a fishing vessel without the corresponding carcass; or to land any such fin without the corresponding carcass . . . .[222]

These regulations established the compliance measure that has now become almost standard, adopted by nations and intergovernmental agencies that have since implemented finning prohibitions (the not-to-exceed-5% fin-to-carcass weight ratio).[223] The SFPA created a rebuttable presumption that any vessel landing shark catch where fins onboard exceed that ratio are in violation of the law.[224]

At the international level, the SFPA directed the Secretary of Commerce to actively promote the end of the practice of finning by undertaking the development of collaborative protection measures with

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Act to eliminate the wasteful and unsportsmanlike practice of shark finning," sponsored by Rep. Randy Cunningham (R-CA), passed into law Dec. 21, 2000.); Sen. 2831, 106th Cong. (June 29, 2010) (available at http://thomas.loc.gov/bss/; *select* 106th Congress, *search* "shark finning," *select* S.2831 (accessed Nov. 21, 2010)) (titled the "Shark Conservation Act of 2000," introduced to "[amend] the Magnuson-Stevens Fishery Conservation and Management Act to make it unlawful for any person to engage in shark-finning . . . [and e]stablishes a rebuttable presumption that shark fins landed from a fishing vessel . . . were taken by shark-finning"; sponsored by Sen. John Kerry (D-MA), was introduced to the Senate and referred to committee on June 29, 2000, and there remained.); Sen. 2832, 106th Cong. (June 29, 2010) (available at http://thomas.loc.gov/bss/; *select* 106th Congress, *search* "shark finning"; *select* S.2832 (accessed Nov. 21, 2010)) (titled "Magnuson-Stevens Reauthorization Act of 2000," with subtitle II "Shark Conservation," as introduced "[p]rohibits the practice of taking shark fins, as well as the landing of shark fins taken by shark-finning. Directs the Secretary to undertake: (1) international negotiations to prevent such practices; and (2) certain import restrictions in order to protect highly migratory sharks," sponsored by Sen. Olympia Snowe (R-ME), was introduced to the Senate and referred to committee on June 29, 2000, and remained there.).

218 Lib. Cong., *THOMAS*, http://thomas.loc.gov/bss/; *select* 106th Congress, *search* "shark finning," *select* H.R.5461, *select* Major Congressional Actions (accessed Nov. 21, 2010).

219 NOAA, *Reports to the Congress Pursuant to the Shark Finning Prohibition Act of 2000*, http://www.nmfs.noaa.gov/ia/intlbycatch/rpts_shark_finning.htm (accessed Nov. 21, 2010).

220 16 U.S.C. § 1822 (2006).

221 *Id.*

222 16 U.S.C. § 1857(1)(P)(i)–(iii) (2006).

223 *Id.* at (R).

224 *Id.*

other nations, initiating discussions to promote bilateral and multilateral agreements with other nations to enact finning prohibitions "as soon as possible."[225] In addition, the Secretary is directed to call on FAO member nations to: cooperatively engage in data collection to determine the extent of finning and to gather biological data necessary to effectively protect and manage the species; work together to protect sharks; develop agreements calling for an international ban on finning "and other fishing practices adversely affecting these species";[226] and to develop and implement a NPOA-Sharks.[227] The SFPA also directed NMFS to provide annual reports to Congress that provide a list of nations whose vessels conduct finning, and a status of the international trade in shark fins; describe NMFS' efforts to carry out the directives of the SFPA; advise on measures the U.S. should take to support and comply with international obligations regarding shark conservation (such as compliance with CITES and RFMO rulings); and provide a plan of action to "adopt international measures for conservation of sharks."[228] In Part V, this Article examines a sample of those reports.

c. NMFS Regulations for the Atlantic and Gulf Coast 2008

In 2008, NMFS took steps to strengthen the prohibition on shark finning enacted in the SFPA, moving closer to actual prevention. Specifically, in April 2008, NMFS amended the Consolidated Atlantic HMS FMP to require that sharks landed in the Atlantic and Gulf fisheries must be landed *and offloaded* with the fins *naturally* attached.[229]

The FMP applies to all commercial and recreational fisheries in these regions.[230] This new regulation, it must be emphasized, applies only to these fisheries and does not include the fisheries of the Pacific Coast. These regulations therefore are still somewhat limited in their effect. The U.S. does not yet have a national mandate to keep sharks' fins attached through landing.[231]

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225 16 U.S.C. § 1822 (2006).

226 *Id.*

227 *Id.*

228 *Id*.

229 NOAA, *Guide for Complying with the Atlantic Fisheries Regulations in Amendment 2 to the Consolidated HMS FMP* 4, http://www.nmfs.noaa.gov/sfa/hms/sharks/Compliance_Guide_for_Amendment_2_FINAL.pdf (June 2008) (accessed Nov. 21, 2010).

230 50 C.F.R. §§ 600.1201, 635.1 (2009).

231 NOAA, *Atlantic Highly Migratory Species: Fishery Management Plans*, http://www.nmfs.noaa.gov/sfa/hms/hmsdocument_files/FMPs.htm (accessed Nov. 21, 2010); *see also* NOAA, *Amendment 2 to the Consolidated Atlantic Highly Migratory Species Fishery Management Plan*, http://www.nmfs.noaa.gov/sfa/hms/sharks/Amendment%202/FEIS/Executive%20Summary.pdf (Apr. 2008) (accessed Nov. 21, 2010) (describing plans for implementing the measures in New England, Mid-Atlantic, South Atlantic, Gulf of Mexico, and the Caribbean only).

2. The European Union (EU)

The European Union (EU) is an "economic and political partnership between 27 democratic European countries."[232] Twenty-two of the twenty-seven EU countries have a sea border,[233] comprising a total of 68,000 km of coastline.[234] The EU manages its collective fisheries under the Common Fisheries Policy (CFP), the main purpose of which is the development of policies and the promotion of regulations to achieve sustainable exploitation of the EU's marine resources.[235] The CFP is funded by the European Fisheries Fund (EFF), which aims to protect resources and the marine environment to guarantee sustainable fisheries while ensuring the economic and social development of fisheries areas, in part contrasting and conflicting objectives.[236] This Section reviews the EU's NPOA-Sharks (EU-NPOA) and the regulations in place to support it.

The EU published its EU-NPOA in February 2009.[237] The EU-NPOA-Sharks identifies the main regulations in place for the conservation and management of shark species by EU fisheries.[238] Sharks "as living aquatic resources" are managed by conservation measures under the EU's Common Fisheries Policy (CFP),[239] which requires

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232 Europa, *Panorama of the European Union*, http://europa.eu/abc/panorama/index_en.htm (accessed Nov. 21, 2010).

233 Isabelle Collet, Eurostat Eur. Commn., *Eurostat Statistics in Focus*, *Portrait of EU Coastal Regions* 2, http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-SF-10-038/EN/KS-SF-10-038-EN.PDF (2010) (accessed Nov. 21, 2010).

234 Maritime Indus. Found. Knowledge Ctr., *More Resources*, *European Maritime Facts and Figures*, *Geography and Population*, *Did You Know?*, http://www.maritimeindustryfoundation.com/facts/dyk2.htm (accessed Nov. 21, 2010).

235 Eur. Commn., *About the Common Fisheries Policy*, http://ec.europa.eu/fisheries/cfp_en.htm (site no longer available) (on file with Animal Law); *see also* Europa, *Conservation and Management of Marine Resources*, http://europa.eu/legislation_summaries/maritime_affairs_and_fisheries/fisheries_resources_and_environment/l66006_en.htm (updated July 7,2010) (accessed Nov. 21, 2010) (stating its purpose to sustain fisheries by managing fishery resources).

236 Europa, *European Fisheries Fund*, http://europa.eu/legislation_summaries/maritime_affairs_and_fisheries/fisheries_sector_organisation_and_financing/l66004_en.htm (updated Sept. 6, 2010) (accessed Nov. 21, 2010).

237 Eur. Commn. Fisheries, *EU Action Plan for the Conservation and Management of Sharks*, http://ec.europa.eu/fisheries/documentation/videos/sharks/index_en.htm (accessed Nov. 21, 2010).

238 Eur. Commn., *Conservation and Management of Sharks*, http://europa.eu/legislation_summaries/maritime_affairs_and_fisheries/fisheries_resources_and_environment/ev0014_en.htm (updated June 18, 2009) (accessed Nov. 21, 2010).

239 Commn. of the Eur. Communities, *Communication from the Commission to the European Parliament and the Council on a European Community Action Plan for the Conservation and Management of Sharks* § 2.3, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2009:0040:FIN:EN:PDF (May 2, 2009) (accessed Nov. 21, 2010) [hereinafter *NPOA-EU Action Plan*]; *see also* Council of the EU, *Council Regulation (EC) No 2371/2002 of 20 December 2002 on the Conservation and Sustainable Exploitation of Fisheries Resources Under the Common Fisheries Policy* art. 1 ¶¶ 1–2(a), http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2002:358:0059:0080:EN:PDF (Dec. 20, 2002) (accessed Nov. 21, 2010); Eur. Commn., *About the Common Fisher-*

that deep-sea fisheries evaluate their catches in the aggregate[240] and specifies requirements for reporting—including requirements for scientific observers—and landings.[241] The EU-NPOA Action Plan, relying on one CFP measure, calls for on-board observers by 2013, an action that could actually prevent finning in time.[242]

Although it provides a specific timeline to a specific goal, the majority of the EU-NPOA Action Plan contains more generally stated objectives such as: "[i]ncrease investment in shark data collection" without a specified amount; "ensure . . . *where possible*" that trading and landing data is recorded at a species level; and in a number of actions expected of RFMOs the use of the words "promote" and "encourage" instead of "require."[243] The EU-NPOA *suggests* but does not require that the EU's conservation regulations for its Mediterranean fisheries—restrictions on fishing gear, size, protected species, and protected areas—*could be* used to bring conservation measures to sharks.[244]

With regards to the practice of finning, the EU-NPOA asserts that "(EC) No1185/2003 bans and *prevents* the practice of 'finning.'"[245] This is not wholly accurate. It does state that it bans the practice, but it does not specify measures that in fact prevent the practice.[246] The EU's regulation relies on a fin-to-weight ratio of 5% fin to live body weight as the measure of compliance.[247] A number of scientific assessments recommend that the ratio should be lowered because often the fin is less than 5% of a live shark's total weight.[248] However, the EU-NPOA merely advises that the EU "*consider* a possible review" of the 5% ratio and allows for member nations to increase that ratio if they

ies Policy, *Managing a Common Resource*, *supra* n. 235 (providing background on the CFP and relaying that the CFP was reformed in 2002 to "ensure sustainable exploitation of living aquatic resources" and is currently under another review initiated by the CFP Commission in 2008 to identify areas that must be revamped to achieve that stated goal).

240 Council of the EU, *Council Regulation (EC) No 2347/2002 of 16 December 2002 Establishing Specific Access Requirements and Associated Conditions Applicable to Fishing for Deep-Sea Stocks* art. 3, http://faolex.fao.org/docs/pdf/eur35015.pdf (Dec. 16, 2002) (accessed Nov. 21, 2010).

241 *Id*. at arts. 7–9.

242 *NPOA-EU Action Plan*, *supra* n. 239, at 11.

243 *Id*. (emphasis added).

244 *Id*. at 5 (emphasis added); *see also* FAO Corp. Doc. Repository, *Fisheries Laws and Regulations in the Mediterranean: A Comparative Study*, http://www.fao.org/docrep/008/y5880e/y5880e06.htm (accessed Nov. 21, 2010) (providing access to country-by-country measures regulating fishing licenses, quotas, and capacity).

245 *NPOA-EU Action Plan*, *supra* n. 239, at 5 (emphasis added).

246 Council of the EU, *Council Regulation (EC) No 1185/2003 of 26 June 2003 on the Removal of Fins of Sharks on Board Vessels*, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2003:167:0001:0003:EN:PDF (June 26, 2003) (accessed Nov. 21, 2010) [hereinafter *EU 1185*].

247 *Id*. at Art. 4.

248 *See* Watts & Wu, *supra* n. 32, at 8 (stating that a fin is about 4.75% of a shark's total weight); *see also* WildAid, *End of the Line*, *supra* n. 6, at 23 (stating that "[s]hark finning wastes 95–99% of the animal").

have data to substantiate the decision.[249] This point is especially pertinent in light of the EU-NPOA opening statement that not only should conservation measures for sharks be based on the precautionary approach, but management of sharks requires a "*more cautious* approach" because of their unique biological makeup.[250]

Moreover, EU regulations provide for exemptions from the finning ban.[251] These exemptions are in large part more the rule than the exception.[252] The EU regulation specifies that a "special permit" is required to separate the fin from the body, and that the shark must first be dead; however, it does not specifically stipulate the requirement that a Member State without the special permit must land the shark with fin attached.[253] Those concerned with effective conservation and sustainable harvesting of sharks advocate for a fins-attached regulation.[254] The EU-NPOA makes no requirement that requiring fins to remain attached upon landing become regular practice, and the EU's governing regulation does not specify this either.[255]

Fall 2010 introduced the possible end of the special permit to fin at sea. In October, the UK announced that it would stop issuing these permits.[256] In mid-November 2010, the European Commission issued a public consultation to gather public opinion on removing the special permit option, stating that "the European Commission wants to eradicate the practice of shark finning completely from EU waters and fishing vessels from the EU wherever they operate in the world."[257] The consultation period ends in February 2011, at which time the Commis-

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249 *NPOA-EU Action Plan*, *supra* n. 239, at 16 (emphasis added).

250 *Id*. at 8 (emphasis added).

251 *EU 1185*, *supra* n. 246.

252 Council of the EU, *Proposal for a Council Regulation Amending Council Regulation (EC) 1185/2003 on the Removal of Fins of Sharks on Board Vessels* 2, http://ec.europa.eu/governance/impact/planned_ia/docs/121_mare_shark_finning_en.pdf (Mar. 15, 2010) (accessed Nov. 21, 2010) ("The main problem is that, under the current system, special permits for on-board processing are issued to many vessels, and that processed shark carcasses and fins are landed in separate ports, at separate times.").

253 *Id*.; *see also EU 1185*, *supra* n. 246 (stating regulations of who can remove shark fins and under what circumstances).

254 *See* The Pew Charitable Trusts, *Sharks at Risk: Scientists Say EU Shark Finning Ban Ineffective and Call for Major Change*, http://www.pewtrusts.org/news_room_detail.aspx?id=24822 (May 17, 2007) (accessed Nov. 21, 2010) (reporting that an effective regulation requires a fins-attached requirement); *see also* Ian Sample, The Guardian, *Call to Ban Shark Finning at Sea* (available at http://www.guardian.co.uk/environment/2007/may/19/fishing.uknews (May 19, 2007) (accessed Nov. 21, 2010)) (stating that requiring fins to be attached while at sea will curb unlawful finning).

255 *EU 1185*, *supra* n. 246, at art. 4.

256 BBC News, *Shark Finning Continues Despite EU Ban, Says Report*, http://news.bbc.co.uk/2/hi/asia-pacific/6729035.stm (Dec. 9, 2010) (accessed Dec. 10, 2010).

257 European Commission Fisheries, *Consultation on the Amendment of Council Regulation (EC) 1185/2003 on the Removal of Fins of Sharks on Board Vessels*, http://ec.europa.eu/fisheries/partners/consultations/shark_finning_ban/index_en.htm (Nov. 15, 2010) (accessed Dec. 10, 2010).

sion is expected to submit a proposal to revise the current regulation allowing special permits.[258]

3. Costa Rica

Costa Rica is known for its abundant biodiversity and has a reputation for conserving and protecting those national resources.[259] Though Costa Rica does not yet have an NPOA-Sharks,[260] it does have a history of strong legislation against finning.[261] In 2001, Costa Rica enacted a true ban on finning with legislation requiring sharks to be landed with fins attached.[262] The country was praised internationally for this strong protective measure, but upholding the law proved a tough battle for the government and for conservationists.[263] With a rich abundance of shark species[264] much sought after by nations supplying the global market for shark products,[265] by many reports Costa Rica is at the focal point of the shark finning controversy, despite the government's strong official stance against finning.[266] This Section looks at the complicated knot of conflicting forces that converge and find expression in Costa Rica over the exploitation of this natural resource—conservation, regulation, subsistence livelihood, and market greed—and examines the legal history in Costa Rica's battle to enforce its laws. It reveals an intense drama unfolding in a developing country

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258 *Id.*; *see also BBC News, supra* n. 256.

259 Interamerican Assn. for Envtl. Def., *Haven for Leatherback Sea Turtles Declared Off Limits*, http://www.aida-americas.org/en/project/leatherbackturtles (accessed Nov. 21, 2010); Nat. Resources Def. Council, *Costa Rica's Biodiversity at Risk*, http://www.savebiogems.org/costarica/ (accessed Nov. 21, 2010); Ramsar, *Costa Rica's National System of Conservation Areas*, http://www.ramsar.org/cda/en/ramsar-news-archives-1997-costa-rica-s-national/main/ramsar/1-26-45-92%5E16822_4000_0__ (Jan. 5, 1997) (accessed Nov. 21, 2010); Sharon Falsetto, *The Plant Ecology of Costa Rica*, http://plant-ecology.suite101.com/article.cfm/the_plant_ecology_of_costa_rica (Oct. 21, 2008) (accessed Nov. 21, 2010).

260 The FAO reports that the Central American States began work on a Central American NPOA in December 2004, but there is nothing yet listed on the FAO's NPOA website of member states who have submitted an NPOA. FAO, *Western Central Atlantic Fishery Commission: Twelfth Session: WECAFC Lesser Antilles Fishery Committee: Ninth Session: Port-Of-Spain, Trinidad And Tobago, 25-28 October 2005: Intersessional Activities and Follow-Up Actions* ¶ 6, ftp://ftp.fao.org/fi/DOCUMENT/wecafc/12thsess/7e.pdf (accessed Nov. 21, 2010).

261 PRETOMA , *supra* n. 38.

262 *Id.* at 3.

263 *Id*.

264 Pub. Broad. Serv., *Adventure to Cocos Island*, http://www.pbs.org/wgbh/nova/sharks/ (accessed Nov. 21, 2010) ("Costa Rica's Cocos Island boasts more sharks per cubic yard of water than perhaps any other place on the planet . . . .").

265 PRETOMA, *supra* n. 38 ("[H]undreds of foreign industrial longline vessels, much larger than most national vessels, were landing at Costa Rican Pacific ports . . . the majority of products landed are shark products, [supplying] the massive demand for shark fins in Asian.").

266 *Sharkwater*, Documentary Film (Sharkwater Productions 2008); *see also* WildAid, *Unrecorded Wastage*, *supra* n. 38 (stating that, despite a ban on finning in Costa Rica, many fins are landed).

whose national identity finds expression in a pride of its rich ecological wealth, the commitment of national conservation groups to preserve and sustainably use that wealth, and a government strapped for funds unable to adequately fund its regulatory agencies to ensure effective enforcement of laws, leading to regulatory agency corruption undermining government objectives and to a compromised judicial system in the midst.

In the period between the enactment of the ban in 2001 and 2003, Costa Rica's fisheries authority, INCOPESCA,[267] admitted to inspecting less than 20% of the foreign vessels landing shark catch.[268] In 2002, PRETOMA (Programa Restauración de Tortugas Marinas), a Costa Rican marine conservation non-governmental organization (NGO), filed suit to enforce the provision.[269] The court straddled the line between the requirement of the law and a pragmatic assessment of the situation. It ruled that INCOPESCA was innocent due to the fact that it did not have adequate funds to carry out its duty, but it ordered INCOPESCA to find the resources necessary to perform random inspections.[270]

Following the suit, the finning ban was short-lived. In November 2003, INCOPESCA and the Costa Rican Association of Professional Biologists (CBCR) succeeded in passing legislation nullifying the ban.[271] This legislation passed without notification of or involvement with PRETOMA, the Coast Guard, or the Ministry of the Environment and Energy (MINAE),[272] which were all working at that time with INCOPESCA and CBCR to enhance the finning ban legislation to make it more effective and to help INCOPESCA enforce it.[273]

Costa Rican law prohibits landing commercial vessels at private docks unless there is an emergency.[274] INCOPESCA and the customs authorities do not enforce this.[275] In fact, PRETOMA claims that all vessels landing shark catch are landed at private docks.[276] The issue is that the Coast Guard, MINAE, and police inspectors are denied entry to private docks and, as a result, cannot conduct inspections.[277] In

267 *Id.* at 7.

268 PRETOMA, *supra* n. 38.

269 *Id*.

270 *Id*.

271 *Id.* (referencing Costa Rican law AJDIP/415-2003); Shark Coalition, *International Shark Finning Regs.*, http://www.coaliciontiburones.org/?page_id=157 (updated Apr. 8, 2010) (accessed Nov. 21, 2010); Shark Trust, *Letter to Honourable Minister of the Environment of Costa Rica Carlos Manuel Rodriguez*, www.pretoma.org/downloads/pdf/TST2.pdf (accessed Nov. 21, 2010).

272 Natl. Biodiversity Inst., *Biodiversity in Costa Rica*, http://www.inbio.ac.cr/en/biod/bio_biodiver.htm (accessed Nov. 21, 2010).

273 PRETOMA, *supra* n. 38.

274 *Id.*

275 *Id.*

276 *Id.*

277 *Id.*

2004, PRETOMA filed suit to enforce the public dock landings.[278] A ruling on this case is still pending.[279]

Later in 2004, half the Costa Rican Congress and 70,000 citizens signed and delivered a petition to the president demanding that the government enforce the public docking regulations and remove the over-used exceptions for private docking.[280] Customs responded affirmatively in November, but in January 2005, it issued new resolutions to reinstate the private docking "exception." PRETOMA filed suit against the Manager of Customs in Puntarenas, the main port for commercial fishing activity.[281] That suit is still pending.[282]

Notwithstanding suits still pending decisions four and five years later, Costa Rica continues to employ its legal framework to oppose finning. In February 2005 the Congress passed a long debated fisheries law requiring once again a fins-attached standard for landing sharks.[283] This overturned the 2003 legislation removing the ban.[284] Once again, INCOPESCA appears to engage in subversive measures. Although according to Costa Rica's attorney general, the law requires that the fins be "naturally" attached,[285] INCOPESCA allows for the fin to be tied to the carcass.[286] Nine INCOPESCA deputies have appealed to the attorney general to overturn the ruling.[287]

On an international scale, as well as domestically, the Costa Rican government promotes an end to the practice of finning. In spite of its internal politics, its lack of enforcement, and its lack of an NPOA-Sharks, Costa Rica attempts to move the international community to action on this front. At the FAO meeting in Rome, Italy, during the first week of March 2009, Costa Rica, joined by ten other Latin American countries, led the call for all FAO members to adopt a fins-attached policy. It formally requested the UN to conduct a workshop to "address the barbaric and wasteful practice of shark finning."[288]

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278 *Id.*

279 PRETOMA, *supra* n. 38; *see also* Fla. Museum of Nat. History, *Costa Rican Shark Finning Case Goes to Highest Court*, http://www.flmnh.ufl.edu/fish/sharks/innews/court2004.htm (Mar. 5, 2004) (site no longer available) (on file with *Animal Law*) (providing that the Costa Rican Constitutional Court accepted a case brought by PRETOMA against several governmental bodies for allowing unauthorized and uncontrolled landings of fishery products at private docks).

280 PRETOMA, *supra* n. 38.

281 *Id.*

282 *Id.*

283 *Id.* (referred to as art. 40 of the [new Fishery] Law).

284 *Id.*

285 *Id.*

286 PRETOMA, *Costa Rican Policy Permitting Shark Finning Overturned*, http://www.pretoma.org/costa-rican-policy-permitting-shark-finning-overturned/ (Aug. 3, 2005) (accessed Nov. 21, 2010).

287 *PRETOMA*, *supra* n. 38.

288 PRETOMA, *Costa Rica Leads Call at United Nations for Shark Protection*, http://www.pretoma.org/costa-rica-leads-call-at-united-nations-for-shark-protectioncosta-rica-lidera-llamado-en-las-naciones-unidas-para-una-mayor-proteccion-a-los-tiburones/ (Mar. 9, 2009) (accessed Nov. 21, 2010).

Costa Rica's story offers a prime example of a developing country's conflict between protecting natural resources and economic growth. The resources that provide the source of economic growth must be managed sustainably in order to continue that growth. This goal, however, can operate in direct opposition to global pressures to consume without governance, concentrating potential wealth in the hands of a very few unaccountable operatives.

4. Taiwan[289]

Taiwan's NPOA-Sharks (TW-NPOA)—which was drafted in 2002, released to the FAO for publishing in 2004,[290] and proclaimed in May 2006[291]—expresses a commitment to taking the measures necessary to protect and conserve shark populations as part of a global commitment amongst fisheries to promote practices that protect food security.[292] Though not a member of the UN, Taiwan makes this commitment because, "[Taiwan] duly respects . . . that fisheries are an important industry having the function to ensure [the] social and economic welfare of the people around the world."[293]

Taiwan reports that it bases its shark conservation measures on its TW-NPOA and that it has enacted regulations accordingly.[294] De-

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289 Author's note: Unable to speak Taiwanese and without recourse to government and agency officials who could provide access to government documents, the author was unable to review Taiwan's official statutes and fisheries regulations. What follows is taken from website information available from Taiwan's Embassy in Taipei, and Taiwan's Fisheries Agency.

It is interesting to note that Costa Rica was one of the very few countries (fewer than twenty-five) that recognized Taiwan (ROC Republic of China) as the legitimate "China." It did this because it was paid handsomely by the Taiwanese government. Just this past year, China (PRC) convinced Costa Rica to cease recognizing Taiwan as "China." Therefore, there were some special relations between Costa Rica and Taiwan for a long time that went far beyond the level of fishing. Costa Rica is the most prestigious and prosperous nation to still recognize Taiwan. *See* Associated Press, *Costa Rica Breaks Relations with Taiwan*, http://www.msnbc.msn.com/id/19080068/ (June 6, 2007) (accessed Nov. 21, 2010) (stating that Costa Rica has broken diplomatic ties with Taiwan); BBC News, *Taiwan Loses Costa Rica's Support*, http://news.bbc.co.uk/2/hi/asia-pacific/6729035.stm (June 7, 2007) (accessed Nov. 21, 2010) (explaining Costa Rican president's choice to end diplomatic ties with Taiwan); Taipei Times, *Taiwan Blasts Costa Rica Over Switch*, http://www.taipeitimes.com/News/front/archives/2007/06/08/2003364302 (June 8, 2007) (accessed Nov. 21, 2010) (same).

290 *FAO List of Published NPOAs*, *supra* n. 180.

291 TECO-Guam, *The Utilization, Conservation and Management of Sharks in Taiwan*, http://www.taiwanembassy.org/content.asp?mp=328CuItem=73923 (Nov. 28, 2008) (accessed Nov. 21, 2010) [hereinafter *TECO-Taiwan Shark Conservation*]; *see also* TECO-Guam, *TECO in Guam Profile & Mission*, http://www.taiwanembassy.org/US/GUM/ct.asp?xItem=16941&CtNode=2570&mp=32&xp1= (Aug. 12, 2009) (accessed Nov. 21, 2010) (stating that "TECO in Guam represents the interests of the Republic of China (Taiwan) in Guam, the Federated States of Micronesia (FSM) and the Commonwealth of the Northern Mariana Islands (CNMI).").

292 *NPOA-Taiwan*, *supra* n. 42, at § 1(1)–(3).

293 *Id.* at § 1(1).

294 Taiwan's NPOA adopts the FAO's voluntary code of conduct. *NPOA-Taiwan*, *supra* n. 42, at § 1(3), entitled the *International Plan of Action for the Conservation and*

spite Taiwan's claims on its Fisheries website that it is taking a very strong stand for shark conservation and against the practice of finning, the TW-NPOA uses very "soft" language and gives conflicting messages on the strength of its commitment. In the first section the TW-NPOA acknowledges that sharks are "important fisheries resources"[295] and that Taiwan has a duty as part of the international community to use these resources responsibly. However, the document also states that Taiwan considers trade restrictions a rash option to conserving potentially depleted shark stocks, preferring instead to take time to gather more data and conduct "long-term research" before adopting a course of action.[296] Overall, the TW-NPOA is more a report of current practices than a call to action or a set of guidelines for developing regulations to improve shark fishery management.

The TW-NPOA classifies Taiwan's shark fisheries into "coastal," "offshore," and "far sea" fisheries,[297] with most shark catch coming from far seas fisheries as bycatch from the tuna longliner fisheries.[298] This creates a serious data deficiency at odds with the TW-NPOA's expressed need for species-specific data because bycatch is unregulated and, accordingly, often unreported.[299] The offshore fisheries, by implication, are directed shark fisheries in that they *target* sharks from September through April.[300] The TW-NPOA indicates that Taiwan collects species data for its offshore fisheries,[301] but that it needs to implement measures to collect such data from the far seas fisheries.[302] It proposes expanding the on-board observer program in the far seas fisheries from nine observers to twenty "in the near future"[303] and increasing the number of sampling vessels.[304] In addition to increasing the number of on-board observers, the TW-NPOA reports that Taiwan has taken other steps to increase and enhance species data. In 2003, Taiwan required its far seas fisheries to alter their logbooks in order to capture data on certain species, requiring that vessels replace the sin-

Management of Sharks, enacted in 1999. *FAO Tech Guidelines-IPOA-Sharks*, *supra* n. 115, at 2.

295 *NPOA-Taiwan*, *supra* n. 42, at § 1(3).

296 *Id.* at § 1(1)–(3).

297 *Id.* at § 3.1.

298 *Id.* at § 3.3.

299 *Id.* at § 4.

300 *Id.* at § 3.2 (emphasis added).

301 *NPOA-Taiwan*, *supra* n. 42, at §§ 3.2, 4.2 (conveying (1) that Chengkung and Nanfangao are the two Taiwanese ports processing the majority of coastal and offshore shark fishery landings; (2) that specific data are collected for coastal and offshore shark fishery landings at "two fishing ports," but it does not indicate that these are Chengkung and Nanfangao, therefore it is impossible to determine that these two ports are collecting the most data; and (3) that no species-specific information data is collected for far-seas fisheries).

302 *See id.* at §§ 3.3, 4.4 (indicating that Taiwan plans to improve the quality of catch data by expanding the observer program from nine observers to twenty observers in the near future).

303 *Id.* at § 4.4.

304 *Id.* at § 3.3.

gle column headed "sharks" with columns for "mako," "silky," "blue," and "other" sharks.[305] Taiwan also distributed questionnaires to fifty of its far seas sampling vessels in order to collect data to validate the data in a vessel's logbook.[306]

Other points made in the TW-NPOA for data collection serve to convey the status quo and give little in the way of guidance. The TW-NPOA makes reference to a tagging program started in 2001 and claims that "five out of seven individuals . . . tagged . . . have been successfully traced," but it does not indicate what data was collected, how the program improves the goals of fishery management and shark conservation, or whether there are plans for continuing the tagging program.[307] Although the TW-NPOA discusses stock assessments conducted for a few of the offshore fisheries, no stock assessments have been conducted for the far seas fisheries[308] and the TW-NPOA does not include provisions for altering that situation.[309] The TW-NPOA notes that the stock assessment of the offshore hammerhead shark indicates that the species requires close monitoring but does not propose a plan for this monitoring and simply states that stock assessments of other pelagic species will occur "in the future,"[310] notwithstanding a commitment to participating in FAO and RFMO meetings to exchange data and implement stock assessments.[311]

The Taipei Economic and Cultural Office of the Taiwan Embassy (TECO) reports that the TW-NPOA bans shark finning.[312] The TW-NPOA language, however, does not indicate a requirement for mandatory compliance, stating instead that far seas fisheries are not encouraged to engage in the practice and requests that far seas fisheries comply with the 5% fin ratio enacted by other RFMOs.[313] The TW-NPOA makes the questionable claim that the sharks from their fisheries are fully utilized.[314] Though it "requests fishermen" fully utilize the shark,[315] and reports that the government conducted workshops to educate fishermen regarding shark conservation,[316] much of the far seas fisheries catch, the largest volume of their shark catch, goes to ports

[305] *Id.* at § 4.1.

[306] *See NPOA-Taiwan*, *supra* n. 42, at § 4.3; *see also TECO-Taiwan Shark Conservation*, *supra* n. 291 (There is a discrepancy between TECO's report and the NPOA. TECO claims these regulations are in place as of the 2008 revisions. The NPOA claims that the columns have been required entries to the logbooks since 2003. Without direct access to the regulations themselves, it is impossible to determine the reason for this discrepancy.).

[307] *Id.* at § 6.2.

[308] *Id.* at § 7.

[309] *Id.*

[310] *Id.* at § 7.1.

[311] *Id*. at § 9.4.

[312] *TECO-Taiwan Shark Conservation*, *supra* n. 291, at § I(1).

[313] *NPOA-Taiwan*, *supra* n. 42, at § 10.6.

[314] *Id*. at § 5.1.

[315] *Id*. at § 10.4.

[316] *Id*. at § 10.4.

outside Taiwan for sale and distribution,[317] where Taiwan cannot account for utilization due to landings in foreign ports outside of its control.[318]

The NPOA's treatment of the precautionary approach[319] is quite weak. Rather than requiring that its fisheries managers employ the precautionary approach given that critical data is known to be lacking, the TW-NPOA states the precautionary approach "can be used."[320] More than that, the TW-NPOA casts doubt on whether there is a real conservation issue because, although the catch for some shark species has decreased, the catch for others has increased. Without better data the TW-NPOA declines to explicitly state a need for the precautionary approach, despite the fact the precautionary approach is intended for just such uncertainty.[321] The TW-NPOA closes by echoing the conservative stance against "rash" action contained at its start.[322] It states that the government will establish a vessel monitoring system to collect data on shark fisheries and take measures to conserve shark stocks if they are "proved to decline significantly."[323]

Revisions to the TW-NPOA made in 2008[324] address the transship processes, strengthening the prohibition against finning by perpetuating the requirement to account for the fin ratio beyond the first land-

317 *Id*. at §§ 3.3, 5.2 ("Most of these bycatches are landed and sold at foreigner bases and few are transported back to Taiwan by transport vessels . . . . For those fisheries operated far away from Taiwan . . . parts of shark catch are brought back to Taiwan, and other parts are landed in nearby foreign ports and sold to local markets.").

318 *NPOA-Taiwan*, *supra* n. 42, at § 5. As environmental violations have increased in the last fifty to sixty years, States have increasingly relied on inspections at the port of call to detect the violations. This is known as "law of the port of call." The inspecting port investigates violations of another State's law, which it lacks the power to develop. The State issuing the vessel's flag dictates the jurisdiction the vessel is subject to, the "law of the flag." Some port States, however, do enact laws based on international treaties that allow them to confiscate and retain a vessel in violation of a treaty. Also, some states withhold port privileges from foreign vessels that violate the port State's national laws. If the vessel's flag is issued from a state that has weak or no regulations, or if the port of call does not inspect, the vessel can trade in otherwise contraband cargo without any enforcement. *See e.g.* Hunter et al., *supra* n. 44, at 805, 808–09 (regarding law of the port of call, and limits on jurisdiction); *see also e.g.* 16 U.S.C. §§ 1826 (a)–(b), (h) (2009) (The United States High Seas Driftnet Fishing Moratorium Protection Act is an example of restricting port privileges to foreign vessels that violate conditions prescribed by U.S. law.).

319 In part, the precautionary principle advises a conservative approach to resource utilization where scientific data regarding the conservation and long-term viability of a species are insufficient or inconclusive to confidently chart a course of utilization. According to the principle, the regulating body should promote conservative harvest quotas until such data is available. *See* S.M. Garcia, *The Precautionary Approach to Fisheries and its Implications for Fishery Research, Technology and Management: And Updated Review* pt 1., http://www.fao.org/docrep/003/w1238E/W1238E01.htm#ch1.1 (June 1995) (accessed Dec. 4, 2010).

320 *NPOA-Taiwan*, *supra* n. 42, at § 10.5.

321 Garcia, *supra* n. 319, at pt. 1.

322 *NPOA-Taiwan*, *supra* n. 42, at § 10.5.

323 *Id*. at § 10.7.

324 *TECO-Taiwan Shark Conservation*, *supra* n. 291.

ing, directing that fins and carcass must be transshipped together and requiring that the ratio must be reported to the authorities at each landing and that documents from the authorities are kept on board the vessel for at least one year. The revisions "encourage" fishers to return sharks that were incidentally caught but are still alive to the ocean. The revisions also require fishers to log the sharks released alive as well as the catch that is kept.[325] Failure to comply with these regulations carries the potential for "severe punishment," including suspending fishing operations, suspending the captain's license for up to one year, and, in the case of a "serious violation," revoking the captain's and the vessel's licenses.[326] The revisions contain stipulations for conducting new research to determine whether 5% is the appropriate standard ratio to use. These revisions are based on results of studies conducted from 2000 to 2007 that indicate that the 5% ratio does not provide adequate data about the shark catch or adequate protection from finning because different shark species have different fin-to-body weight ratios and standards do not exist for processing the carcasses on board ship. For example, some fishers leave the carcass intact, while others dispose of the viscera, head, and gills, which affects the accuracy of the ratio.

Though these revisions portend potential in improved regulations, Taiwan's TW-NPOA in large measure proves to be a statement of what is rather than a set of guidelines for improving conservation in the spirit of urgency that the IPOA-Sharks calls for.[327] Furthermore, the TW-NPOA expresses doubt that a serious problem exists, but indicates that Taiwan will to some extent cooperate as a good neighbor in the international community.[328]

5. China

Though China is the country primarily fueling the demand for shark fins, it is not examined in this Article because it currently has no regulations in place for shark fishery management.[329] In sum, in the face of the global crisis its market in shark fins is creating, China has no shark conservation measures.[330]

V. WHERE IS IT BROKEN?

Despite numerous treaties, agreements, international calls to action, and national regulations for conservation and sustainable man-

325 *Id*. at § (II)(2)(5).

326 *Id*. at § (II)(2).

327 *IPOA-Sharks*, *supra* n. 123, at 11.

328 *NPOA-Taiwan*, *supra* n. 42, at § 1(3).

329 E-mail from Yamin Wang, Prof., College of Ocean, Shandong University at Weihai, to Paula Walker, Author, *Professor Wang - Research Question from Paula Walker Law Student*, (Mar. 22, 2009, 6:23 p.m. PST) (on file with *Animal Law*).

330 *Id.*

agement, shark numbers continue to precipitously decline. Where is the system broken?

The situation is much like a wheel with damaged and missing spokes. The symbolic wheel can still function to a limited degree—our legislative and regulatory workings are still revolving—but the mechanism is not operating in a condition that gets the job done. Some violations are caught, but many are not. The multi-nation factor and national sovereignty makes decisive action most difficult to achieve. And then there are the "big bucks." Whether illegally gained through black market trading and corrupt institutions, or traded legitimately, imposing sustainable practices remains a remote option in light of the profit to be made.

This Part identifies the broken spokes: legal loopholes, limited scope of regulation, voluntary versus mandatory action, lack of enforcement, and lack of political will. It examines their causes and looks at public opinion as a pivotal force in forging the political climate necessary to create laws and regulations and to enforce those that already exist but lack for consistent application.[331]

A. Legislation Gone Awry, Withered, or Gone the Way of Voluntary Action

The saga of the sharks' decline is fraught with examples of well-intended legislation gone awry, victim to legal loopholes that thwart expressed legislative intent. Limited scope of application also undermines getting to the stated objective of restored populations. Legislation that requires only voluntary action is equally counter productive to solving urgent environmental challenges. In the arena of international commitment, where significant international commerce is involved, voluntary action is tantamount to inaction.

1. If Only It Were a Fishing Vessel . . . .

In April 2008, the case of *U.S. v. Approximately 64,695 Pounds of Shark Fins* brought to glaring light certain loopholes in the SFPA. The Ninth Circuit Court of Appeals ruled that a U.S. registered vessel was not in violation of the SFPA despite the fact that the defendant admitted to purchasing fins from "foreign vessels that engaged in shark fin-

331 We know that an absence of data is a gaping deficiency. We need to gather the data. We need to assess the data. We need to act on the data. These are all scientific verities. Every NPOA examined, every agreement, and every proposed solution reviewed in this paper point to the lack of necessary data due primarily to the fact that sharks are harvested as bycatch. In order to determine where the most urgent situations exist and to precisely target actions to prevent extinction, science must inform the law,and its regulatory structure. The law, however, must be in place to mandate and enforce collecting the data so that the science can operate to inform the legal process. This Section moves away from the discussion of the deficiencies in data to examine the other key areas of deficiency that, if corrected, will contribute to remedying the lack of data.

ning."[332] This was because the vessel from which he bought the fins was not officially classified as a "*fishing* vessel."[333] The opinion, in and of itself, is questionable because the judgment relies on the language of the SFPA instead of the definitions section of the MSA,[334] which allows interpreting the vessel in question as a fishing vessel.[335]

Other loopholes existing in the SFPA and international agreements continue to create obstacles to solving the shark crises. For example, the intent of the Shark Finning Prohibtion Act was to end the practice of finning, expressed directly and unequivocally in both its title and its purpose statement—"to *eliminate* shark finning by addressing the problem comprehensively at both the national and international levels."[336] Despite these clear pronouncements however, the text of the law introduces significant loopholes, as follows.

Under the language of the SFPA, a violation occurs in discarding the carcass in the sea, not in the actual finning.[337] Ostensibly, as supported by the ratio-to-weight compliance measure, so long as the carcass is kept the fin can be severed, from a live or a dead animal. Instead of language requiring that sharks be landed with their fins and tails attached, the most obvious and certain proof that finning was "eliminated," the closest we have come is an "after-the-fact inspection" at port. Resting simply on a deduction that the creatures were not finned because body and fins stored separately in mass quantity satisfy a weight ratio, an after-the-fact inspection fails to ensure that finning actually did not occur. There is no way to know if the carcass on board is the "corresponding" carcass as required.[338] Further, scientific agencies and international bodies question the accuracy and validity of the compliance measure supporting this deduction.[339]

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[332] *U.S. v. Approximately 64,695 Pounds of Shark Fins*, 520 F.3d 976, 977 (9th Cir. 2008) (available at http://www.ca9.uscourts.gov/datastore/opinions/2008/03/17/0556274.pdf (accessed Nov. 21, 2010)).

[333] *Id*. (emphasis added).

[334] *Id*. at 983.

[335] 16 U.S.C. § 1802(18) (2009) (defines "fishing vessel" as "any vessel, boat, ship, or other craft which is used for, [or] equipped to be used for . . . aiding or assisting one or more vessels at sea in the performance of any activity relating to fishing, including, but not limited to . . . supply, storage, . . . [and] transportation . . . ." It would be no stretch of logic or the imagination to consider that transshipping 64,695 pounds of shark fin from a vessel at sea to port fell well within this rubric of "any vessel" and "any activity," including those listed.).

[336] Lib. Cong., *THOMAS*, http://thomas.loc.gov/bss/; *select* 106th Congress, *search* "shark finning," *select* H.R. 5461, *select* Text of Legislation, *select* H.R.5461.ENR (accessed Nov. 21, 2010) (emphasis added).

[337] 16 U.S.C. § 1822 (2009) (The definition of "finning" per the statute is, "[T]he taking of a shark, removing the fin or fins (whether or not including the tail) of a shark, and returning the remainder of the shark to the sea.").

[338] 16 U.S.C. § 1857(1)(P)(ii) (2006).

[339] IUCN, *Shark Finning*, *supra* n. 97. The actual ratio of shark fin to shark body may be as much as two percentage points less in some cases, depending on the species, many variations in size, and the age of the animal. Variations in processing the shark carcass also skew the ratio, live body weight being different than dressed body weight. Dressed body weight has many interpretations, which introduces more variants. *Id.*

"Prohibiting" but not "preventing" finning is a foundational problem because it removes the inherent limit that cargo capacity could impose on harvest quantity if the fin were required to be "naturally attached." The ability to separate fins from carcasses, and the questionable accuracy of the fin-to-carcass compliance measure perpetuate excessive harvesting by providing the means to carry more fins than accounted for by the carcasses on board.[340]

Landing introduces other complications to effective monitoring and enforcement. Many international agreements that employ the fin ratio compliance measure apply the requirement only at the first landing.[341] Allowing fishers to separate the caught shark's fins and body at any subsequent point before the final landing and inspection opens the door to undetected noncompliance.[342] Relying solely on logbook entries where the cargo is handled through several exchange points before its final off-loading point allows vessel operators to fabricate log entries of offloading part of the carcass shipment at prior landings. Subsequent landings are not held accountable to this measure. In contrast, the SFPA does not discriminate in applying the compliance measure according to whether the cargo is being landed or is simply found aboard "a fishing vessel."[343] It creates a rebuttable presumption that the fins were taken in violation of the statute where a vessel is found with fin cargo not attached to the bodies of sharks with a ratio that exceeds the 5% ratio. As such, the SFPA is less subject to undetected violations; however, the rebuttable presumption gives latitude to the potentially offending vessel operator to create a false alibi.

2. Do Regulations Even Exist?

Regulation to effectively manage shark harvesting is limited in scope or lacking altogether. Sharks as bycatch is the biggest cause of limited regulation.[344] There are very few targeted shark fisheries,[345] and it is impossible to develop effective management plans for a species that is wholly unregulated. As bycatch, there are no regulations for logbook entries, which means there are no quotas or limits set.

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340 *Id*. at 3.

341 N.R. Hareide et al., *European Shark Fisheries: A Preliminary Investigation into Fisheries, Conversion Factors, Trade Products, Markets and Management Measures* 49, http://www.lenfestocean.org/publications/SharkFinning_underlying_report.pdf (2007) (accessed Nov. 21, 2010) (listing countries that monitor compliance at first landing).

342 *See id*. at 50. (For example, although the EU has a fin-to-carcass ratio compliance measure it does not require that the fins and carcass be landed together but allows the cargo to be landed or trans-shipped separately, relying on logbook trails instead of direct observation of landings.).

343 16 U.S.C. § 1857(1)(P)(ii).

344 Camillo Catarci, *FAO Fisheries Circular No. 990: World Markets and Industry of Selected Commercially-Exploited Aquatic Species with an International Conservation Profile*, "Foreword," http://www.fao.org/docrep/006/y5261e/y5261e01.htm#bm1 (2004) (accessed Nov. 21, 2010) ("Sharks are generally taken by commercial fisheries as bycatch, whereas targeted shark fisheries are largely artisanal.").

345 *Id*.

Due to their limited scope, other regulating instruments provide scant protection in the face of runaway, unregulated harvesting. Despite the evidence that many species are in steep decline, or threatened or endangered, mostly due to trade,[346] CITES lists only three species of shark, and not on Appendix I, but on Appendix II, which only requires border control and management in trading product from these species.[347] It does not prevent trade. For example, despite CITES listing the whale shark in 2002,[348] it was not until 2008 that Taiwan placed a complete ban[349] on taking whale sharks in the face of international pressure to preserve these "gentle giants."[350]

CMS, as well, lists only seven species.[351] Considering that the IUCN lists 126 species of shark as globally threatened,[352] and that most sharks are migratory, under CMS purview, many more sharks should be listed on either Appendix I or II.[353] Yet, in their current de-

346 Watts & Wu, *supra* n. 32, at 2.

347 CMS, *Appendices I and II of the Convention on the Conservation of Migratory Species of Wild Animals*, http://www.cms.int/documents/appendix/Appendices_COP9_E.pdf (effective Mar. 5, 2009) (accessed Nov. 21, 2010) [hereinafter CMS, *Appendices*].

348 Shark Info, *CITES Appendix II to Finally Include Whale Sharks and Basking Sharks*, http://www.sharkinfo.ch/SI4_02e/cites_whale.html (Nov. 15, 2002) (accessed Nov. 21, 2010).

349 *See* The Marine Conserv. Socy., Seychelles, *Taiwan Whale Shark Fishery Closed—Official!*, http://www.mcss.sc/SAGREN/Sagren_v4_4_art2.htm (accessed Nov. 21, 2010) (stating that the government of Taiwan approved the reduction in the whale shark fishery quota for 2007 and simultaneously approved cancellation of the quota for all future years); *see also* Taipei Times, *Stranded Whale Shark Freed from Canal in Tainan*, http://www.taipeitimes.com/News/taiwan/archives/2009/03/03/2003437429 (Mar. 3, 2009) (accessed Nov. 21, 2010) (stating that at the beginning of 2008 regulations were introduced in support of a ban); Taiwan Fisheries Agency, *Fisheries Information Service Site: About News* (site no longer available) (on file with *Animal Law*).

350 Wild Singapore, *Young Whale Shark Trapped in Taiwan Canal*, http://wildsingaporenews.blogspot.com/2009/03/young-whale-shark-trapped-in-taiwan.html (Mar. 2, 2009) (accessed Nov. 21, 2010).

351 CMS, *Appendices*, *supra* n. 347 (see sharks listed under the major category of "Pisces" and the scientific sub classification "Elasmobranchii," which includes sharks and rays. Appendix I lists two shark species: Cetorhinus maximus "Basking shark" and Carcharodon carcharias "Great White shark." Appendix II lists five additional species (the Basking shark and the Great White are listed in both Appendices): Rhincodon typus "Whale shark," Isurus oxyrinchus "Shortfin Mako shark," Isurus paucus "Longfin Mako shark," Lamna nasus "Porbeagle shark," Squalus acanthias "Picked Dogfish shark"); *see also* FAO, *Aquatic Species Fact Sheets: Results Page*, http://www.fao.org/fishery/species/search/32001/1416/en (accessed Nov. 21, 2010) (translating the scientific names used in the CMS Appendices to common English names).

352 IUCN, *IUCN Red List 2008: Sharks, Rays, and Chimeras on the 2008 IUCN Red List of Threatened Species*, http://www.iucnssg.org/index.php/iucn-red-list-2008 (Mar. 9, 2008) (site no longer available) (on file with *Animal Law*) [hereinafter IUCN, *IUCN Red List 2008*].

353 *CMS Text*, *supra* n. 143, at art. III, ¶ 1 (explaining the criteria for listing on Appendix 1); *see also* CMS, *Appendices*, *supra* n. 347 (listing the sharks referred to in n. 347).

liberations on drafting a plan of action for sharks, the CMS *SHARKS* group delegates cannot decide which species to cover.[354]

The EU-NPOA is another example of limited application. To many conservationists, coming ten years after the call to action from the IPOA-Sharks, its measures are weak and miss the mark in many ways where stringent, strong conservation measures were expected.[355] Per the EU's compliance measure, approximately 66% of sharks caught could be finned and still produce the "correct" ratio,[356] giving operators significant latitude to fin a large number of sharks and still avoid prosecution.[357] This makes the EU's protections "among the weakest in the world."[358]

In the U.S., regulations apply in certain regions but not in others. The 2008 NMFS regulations to land sharks with the fin naturally attached[359] apply only to the Atlantic and Gulf regions.[360] The Pacific region is not bound by those regulations, though it has long been known that Pacific shark populations are in need of management measures to prevent overfishing.[361] By its own reporting, the Pacific Fishery Management Council (PFMC) conveys that management of highly migratory species (HMS) is fraught with complications and obstacles imposed by limited scope, regional management plans, international jurisdictions, and international agreements.[362] For example, the

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354 CMS, *Second Meeting on International Cooperation on Migratory Sharks Under the Convention on Migratory Species*, http://www.iisd.ca/cms/sdcms/ (Dec. 6–8, 2008) (accessed Nov. 21, 2010) ("Among the meeting's most contentious issues was whether to limit the MoU's [Memorandum of Understanding] scope to the Basking, Great White and Whale sharks that initially triggered interest in the instrument in 2005 or to include the Spiny Dogfish, Porbeagle, and Shortfin and Longfin Mako sharks that were listed on the CMS appendices at its ninth Conference of the Parties the previous week.").

355 Shark Alliance, *The Trouble with Europe: EU Finning Loopholes*, http://www.sharkalliance.org/content.asp?did=950 (accessed Nov. 21, 2010).

356 IUCN, *Information Paper* 3, http://www.flmnh.ufl.edu/fish/organizations/ssg/iucnsharkfinningfinal.pdf (June 2003) (accessed Nov. 21, 2010) (stating that using "live weight" for the carcass-fin compliance ratio allows for a much greater number of fins to "dressed" carcass weight; in actuality this standard can allow up to 66% of the sharks taken to be finned).

357 Shark Alliance, *The Fin to Carcass Weight Ratio*, http://www.sharkalliance.org/content.asp?did=941 (accessed Nov. 21, 2010).

358 *Id*.

359 NOAA, *Guide for Complying with the Atlantic Shark Fisheries Regulations in Amendment 2 to the Consolidated HMS FMP* 1, http://www.nmfs.noaa.gov/sfa/hms/sharks/Compliance_Guide_for_Amendment_2_FINAL.pdf (June 2008) (accessed Nov. 21, 2010).

360 *Id.* at 5.

361 P. Fishery Mgt. Council (PFMC), *Status of the U.S. West Coast Fisheries for Highly Migratory Species Through 2007: Stock Assessment and Fishery Evaluation* 14, http://www.pcouncil.org/wp-content/uploads/07_HMS_SAFE.pdf (Sept. 2008) (accessed Nov. 21, 2010) [hereinafter PMFC, *Status*].

362 PFMC, *Fishery Management Plan for U.S. West Coast Fisheries for Highly Migratory Species: As Amended by Amendment*, 4–9, 11, http://www.pcouncil.org/wp-content/uploads/HMS_FMP_Aug09.pdf (June 2007) (accessed Nov. 21, 2010) ("The lack of a single FMP covering all U.S. vessels in the Pacific created . . . and frustrated achievement

PFMC fishery management plan (FMP) reports certain species of shark as units to be managed (MUS) or monitored and recommends an alternative target control for 'vulnerable' species, that is the optimum yield (OY) target control[363] versus the maximum sustainable yield (MSY). It specifically states that only sharks have conditions warranting this level of control;[364] however, there is "no stock-wide catch information" on the species from which to develop an adequate OY[365]—a "catch-22." As another example, the PFMC attempted stricter management plans for the Thresher shark because it "may be approaching or exceeding the established harvest guideline" due to its market value. The PFMC attempted stricter management plans for the Thresher shark because it "may be approaching or exceeding the established harvest guideline."[366] It proposed a preferred option of partial closure of both the commercial and the recreational fisheries for certain areas and at certain times of the year for public review.[367] In the end, however, the PFMC abandoned that option, did not elect any of the other three limiting options, and instead made recommendations to conduct more research and some educational outreach to fishermen.[368] No reason was provided to support the decision to move from an urgency that initially selected partial fishery closures as the preferred approach, to no limiting action at all.[369]

Of course it is not the U.S. alone that gives evidence of limited or non-existent regulations in this area despite the international concern. Resolving the shark crises on domestic and international levels appears stymied by a linked chain of events. One region cannot act until another region acts, and action cannot occur until some regulation or international agreement is in place. Coordination of effort and agreement on a global scale to coordinated action certainly appears needed to make continued progress in truly effective management of this much-prized resource.[370]

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of management goals. In addition, foreign vessels and U.S. vessels may be subject to different regulations." Furthermore, regarding inter-governmental RFMO agreements, "[t]he IATTC Convention is not entirely consistent with the Magnuson-Stevens Act. The Convention establishes a simple goal of achieving maximum sustainable yields from the tuna stocks and not optimum yield from the complex of HMS species in the Convention Area.").

363 *Id*. at 35 (optimum yield (OY) is set at a lower yield than the maximum sustainable yield (MSY), in this case 75% of MSY).

364 *Id.*

365 *Id.* at 37.

366 *Id.* at 27.

367 PFMC, *Council Meeting Decisions: November 2008 Decisions*, http://www.pcouncil.org/resources/archives/council-meeting-decisions/november-2008-decisions/ (Nov. 10, 2008) (accessed Nov. 21, 2010).

368 *Id*.

369 *Id*.

370 Despite the oft-repeated refrain in many official documents, the NPOAs, etc., that data necessary to develop effective management plans is lacking, the PFMC SAFE Report 2008 indicates this is not likely to change very rapidly. PFMC, *Status*, *supra* n. 361 at 127.

3. IPOA and the Case of International Agreements

It is not that the science does not inform, it is that the law does not mandate. Since CITES Convention of the Parties (CoP9) in 1994, the international community has been on notice that global shark populations were at risk.[371] The Convention requires, among other criteria, that there be a scientific basis to any listing proposed for marine species.[372] Sharks have been known to be in serious decline since the early 1990s,[373] so the issue is not a lack of information. The situation has been examined, discussed, and reported on by international organizations, national legislators, scientists, inter-governmental agencies, national marine regulatory agencies, scientific organizations, and non-governmental organizations for over a decade. Agreements have been forged. Treaties have been ratified. Why, then, is there no appreciable change for a more protected status of shark populations? The answer rests primarily in the voluntary nature of the international agreements.[374]

In the world of international commerce, especially where exorbitant profits can be made and the demand for shark fins seemingly knows no end, a request for self-governing voluntary limits is tantamount to a call for inaction.[375] In the decade since the UN issued the

> [S]tock assessments for sharks have been preliminary at best, and few and far between. Furthermore, comprehensive shark assessments do not appear to be on the near-term planning horizon for the RFMOs or for the ISC. . . . [M]any shark species are likely to be more vulnerable to overfishing than other HMS. [M]ost shark species cannot be assessed or managed unilaterally . . . . Some species are highly oceanic with ranges similar to that of tunas (e.g., blue shark). Others are more coastal—with perhaps most of their habitat shoreward of the U.S. EEZ—but exhibit north-south migrations with significant catches in Mexican waters (e.g., [T]hresher sharks). The net effect is that accounting for the total catch of sharks over their entire period (several decades) and areas of exploitation is not possible. Furthermore, there is a paucity of the biological samples needed to characterize the size of animals taken from the fisheries that account for most of the catch. *Id.*

371 CITES, *In-session documents*, Com. 9.18, http://www.cites.org/eng/cop/09/E9-in-session.pdf (Nov. 7–18, 1994) (accessed Nov. 21, 2010).

372 CITES, *Text of the Convention*, Art. XV 2(b), http://www.cites.org/eng/disc/text.shtml#II (June 22, 1979) (accessed Nov. 21, 2010).

373 *See* Natl. Shark Research Consortium, *Shark Research Program—Virginia Institute of Marine Science*, http://www.flmnh.ufl.edu/fish/sharks/nsrc/featproj02.htm (accessed Nov. 21, 2010) (providing scientific evidence of a decline in the Virginia coastal shark populations in the Atlantic Ocean during the 1980s and 1990s).

374 Naomi Arcand & Linda Paul, *The Global Shark Fin Trade: Destroying Biodiversity and Ecosystems* 18 (Haw. Audubon Socy. 2007) (on file with *Animal Law*) (refers to the Dec. 2005 FAO Expert Consultation that "found that the failure to implement the *IPOA-Sharks* was due to a number of causes, including its voluntary nature."); *see also* FAO, *FAO Fisheries Report No. 795: FAO Expert Consultation on the Implementation of the FAO International Plan of Action for the Conservation and Management of Sharks*, ftp://ftp.fao.org/docrep/fao/009/a0523e/a0523e00.pdf (Dec. 2005) (accessed Nov. 21, 2010) (providing the report referenced in *The Global Shark Fin Trade*).

375 IUCN, *More Oceanic Sharks Added to the IUCN Red List*, http://cms.iucn.org/search.cfm?uNewsID=103 (Feb. 22, 2007) (accessed Nov. 21, 2010) ("Despite mounting

IPOA-Sharks, very few of the FAO COFI member nations have implemented a plan of action.[376] As of publication, only 14 of the 136 members of COFI[377] have submitted an NPOA-Sharks to the FAO.[378] Voluntary instruments are not providing adequate protection, and drafting and ratifying binding agreements appears to be almost impossible given the monetary returns that shark catch provides, as evidenced by the earlier account of the protracted negotiations of the CMS *SHARKS* group.

That shark harvesting is lucrative is evidenced by the players in the field. The shark industry harvest supplying Asia through Hong Kong is not limited to Taiwan and other Far East fisheries. Perhaps surprisingly, Spain provides the lion's share of the shark fins delivered to Hong Kong.[379] And for all its leading legislation in the prohibition of shark finning, the U.S. is still a significant supplier of shark fins to Hong Kong. In 2000, the U.S. ranked among the top ten suppliers in volume of fins to Hong Kong, as is evidenced by the ranking of suppliers in descending order of volume of "Fin Imports" from data presented at the CITES Animal Committee meeting in 2002 below.

threats and evidence of decline, there are no international catch limits for pelagic sharks.") [hereinafter *More Oceanic Sharks*].

376 At the 2002 eighteenth meeting of the CITES Animal Committee, Australia had these pertinent points to make:

> To be fully effective the conservation of sharks requires action from all States with active shark fisheries. Progress with the development of NPOAs-Sharks has been very slow. . . . Of the 87 FAO members where the IPOA on sharks should be applied: 47 member countries have not shown any intention to prepare a National Shark Plan; 15 have noted their intention to prepare a NPOA but in some cases this is provisional on the availability of resources or external assistance; 16 member countries (Australia included) are progressing with their NPOAs; and seven member countries have not provided any information on whether they are preparing NPOAs or intend to prepare NPOAs.

CITES, *AC18 Inf. 1: Eighteenth Meeting of the Animals Committee, Costa Rica, 8–12 April 2002: Information Paper—Australia: Conservation of Sharks—Progress*, http://www.cites.org/common/com/ac/18/E18i-01.doc (Apr. 2002) (accessed Nov. 21, 2010) [hereinafter CITES, *AC18]*.

377 FAO, *Committee on Fisheries*, http://www.fao.org/unfao/govbodies/eims_search/member_date.asp?meeting_id=18&lang=EN (accessed Nov. 21, 2010) (listing the FAO COFI Governing Bodies).

378 FAO, *List of Published NPOAs*, *supra* n. 180 (The EU just announced its NPOA-Sharks in February 2009 and is not yet on the FAO list of NPOAs).

379 CITES, *AC18 Inf. 10: Eighteenth Meeting of the Animals Committee: San José (Costa Rica), 8–12 April 2002: Update: Report on Implementation of the International Plan of Action for Sharks (IPOA-Sharks): AC18 Doc. 19.2*, at 5–6, http://www.cites.org/common/com/ac/18/E18i-10.pdf (Apr. 2002) (accessed Nov. 21, 2010) (providing data on fin imports).

Country	Fin Imports (kg dry wt.)	Fin Imports (U.S. tons)	Fin Imports (pounds)
Spain	970,412	1,070	2,139,403
Taiwan	639,869	705	1,410,677
Indonesia	597,012	658	1,316,193
UAE	498,863	550	1,099,810
Yemen	350,052	386	771,737
India	315,591	348	695,763
USA	298,821	329	658,791
Mexico	269,765	297	594,733
Japan	254,207	280	560,433
Costa Rica	120,083	132	264,739

Figure 2: Fin Imports: Data Presented at CITES Animal Committee Meeting 2002[380]

According to the list, the U.S. is 1 of 148 countries doing business in the fin trade with Hong Kong, which is evidence of the significant economic revenue provided on a national and global scale. Looking not only at what is reported and exchanged legally between countries but also at the amount of wealth purportedly being made in the underworld trade in fins, the numbers are truly staggering. By one report, a "medium sized operator" in Hong Kong pulls in almost $800,000 USD per month in illegal trading, and another, one of the "largest dealers," makes at least $12 million U.S. dollars (USD) per year.[381] On its face alone, illegal trading represents a significant economic sector.

The calls to voluntary action for shark management state the gravity of the problem well and, on the data, make a compelling case, while respecting national sovereignty and inter-governmental autonomy. The IPOA-Sharks in particular gives very comprehensive guidelines for plans of action.[382] But the IPOA-Sharks lacks the force of a binding agreement.[383] A nation has discretion to comply with IPOA-Sharks when there is significant economic impact to consider, and the result so far has been only talk—talk about the need to do something, to gather data to decide what to do, to make a plan when that data is evaluated. But taking actual, effective, harvest-limiting, or harvest-controlling measures as recommended by the IPOA-Sharks, in the face of the economic advantages of the trade, has not occurred on any real scale.[384]

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[380] *Id.*

[381] WildAid, *Unrecorded Wastage*, *supra* n. 38, at 13.

[382] *See FAO Tech Guidelines*, *IPOA-Sharks*, *supra* n. 115, at 14 (listing recommended guidelines and goals for the shark plan).

[383] *Id.* at 10, 12.

[384] Oceana, *The International Trade of Shark Fins: Endangering Shark Populations Worldwide*, http://na.oceana.org/sites/default/files/reports/OCEANA_international_trade_shark_fins_english.pdf (Mar. 2010) (accessed Nov. 21, 2010).

B. *Enforcing Enforcement: Political Will and the Purse*

The effectiveness of every law and every regulation comes to one single point of focus: enforcement. The legal structure rests on its corresponding support base of enforcement to ensure its intent is carried out. This is especially true with environmental trade. It is all well and good to adopt a law, but who will ensure compliance, and how? When it comes to international trade, that focus is centralized at ports of entry. Fulfilling the objectives of preventing environmental over-exploitation depends in large part on a nation's ability and willingness to staff its customs authorities to appropriate capacity and to provide the funding to carry out inspections and investigations to the measure necessary to ensure compliance.

In the area of enforcement, political will comes down to the purse in two ways: in the money available to fund enforcement, which in many cases for both developing and developed countries is less than ideal; and in the countervailing forces of the benefits to be gained by establishing regulated shark fisheries vis-á-vis IUU fishing operations' interest in keeping weak compliance rules in place. Spain, the supplier of the largest volume of fins to Hong Kong,[385] would likely use its political clout to keep the current weak EU compliance measures. These measures provide the latitude to continue finning and thereby exceed the limts in fin cargo that storing carcass and fin attached would impose,[386] as is evidenced by some estimates Also, some estimates show that the quantity of fins Spain reportedly delivers to Hong Kong cannot be accounted for by the "declared landings in the EU."[387]

Customs agents the world over are in limited supply when compared to the enormous task the illegal trade presents, not only in fins but in every area of contraband good. Every poacher puts their all into outwitting the law to retrieve their ill-gotten proceeds. The fin traders are no different.[388] Because this is the situation, a global community committed to keeping valuable resources from the maw of extinction has to invest significantly in the resources necessary to implement and conduct a highly functioning enforcement mechanism. As mentioned earlier, Costa Rica is a glaring example of corruption in an enforcement agency, in part due to lack of funding from the government to back its laws.

A recent case in South Africa demonstrates the issues with enforcement between ports of call and the flag state, where violations may be ignored or even defended by the flag state. In March 2009, the South African port authorities, acting on the authority of South Af-

385 *Id.*; *see also* CITES AC18, *supra* n. 376 (containing a table showing exports to Hong Kong are higher for Spain than any other country listed in the table).

386 WildAid, *Unrecorded Wastage*, *supra* n. 38, at 3.

387 *Id.* at 12 (making the same assertion of the UK as well).

388 *Id*. at 8 ("[F]in traders the world over are known for their ability to remain one step ahead of the law.").

rica's Living Marine Resources Act (LMRA),[389] seized a Taiwanese vessel in the port of Cape Town. The vessel, "Chien Jui 102," requested a permit to enter South Africa's EEZ and to enter Cape Town's separated harbor, which by law requires that the requesting vessel comply with the regulations of the host country, and submit to inspection to verify that compliance.[390] Inspection revealed that the captain of the vessel had falsified the documents in violation of international regulations by the IOTC and the ICCAT for fin-to-body weight ratio.[391] Although this appears to be an outright violation of the fin-weight ratio, Taiwan defended the vessel, saying that those on board were not smuggling. This may be supported in part because, according to the regulations TECO reports, the not-to-exceed 5% ratio is only required *up to the first landing*.[392] The IOTC and ICCAT regulations that the port authority claimed were violated also stipulate only "up to the first landing."[393] Taiwan may make a valid argument that these fins were the collected cargo from other vessels' first landings. Alternatively, it might argue that this vessel had the appropriate carcass ratio (thirty tons of shark carcass) on board through its first landing and offloaded the carcass in other ports for processing subsequent to that. Taiwan, however, may not have such a ready argument to explain why the ship's captain falsified the logbook entries. Taiwan's regulations require accuracy in reporting to the port authority in foreign states.[394]

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389 *See* Republic of S. Afr., *Marine Living Resources Act* ch. 6 § 51 ¶ 2(a), (c)–(d), (f)–(h), 3(a), http://faolex.fao.org/docs/pdf/saf15984.pdf (1998) (accessed Nov. 21, 2010) (which is committed to upholding international agreements that South Africa is party to, stating that the port officer may without warrant board and inspect any vessel in South African waters and examine its logbook and cargo to determine if the vessel has engaged in activities that contravene any measures of the Act).

390 *Id.*; *see* Helen Bamford, Indep. Online, *Two Tons of Shark Fins on Taiwanese Boat* (Mar. 15, 2009) http://www.iol.co.za/index.php?set_id=1&click_id=14&art_id=vn20090315062359249C428822 (site no longer available) (on file with *Animal Law*) (describing the specific circumstances in the Taiwanese vessel, Chien Jui 102, case).

391 *Id.* (the captain reported 100 kilograms of fin corresponding to 2.2 tons of shark "trunk" (carcass) on board, but inspection revealed in fact 2 tons of *dried* shark *fin* on board which would have required 30 tons of shark carcass to be in compliance. According to South Africa's Marine Living Resources Act the crew could be fined "R2 million and imprisoned up to five years.") (emphases added).

392 *TECO-Taiwan Shark Conservation*, *supra* n. 291, at § II, ¶ 2.2 (stating that the regulation requires compliance with the "not-to-exceed 5% ratio" up to the first landing) (emphasis added).

393 *See IOTC Resolutions*, *supra* n. 171, at 78 (stating that, as part of the IOTC agreement, fins should not total more than 5% of shark weight onboard, up to the first landing); *see also ICCAT Resolutions*, *supra* n. 163, at 63 (stating that onboard fins cannot total more than 5% of total weight of sharks onboard, up to the first point of landing).

394 *TECO-Taiwan Shark Conserv.*, *supra* n. 291 at § II, ¶ 2.3 ("Fishing vessels should report to the competent authority of the port states about the weight of shark body and fin on board while entering and leaving ports as well as the weight of shark fin and carcass offloaded in port.").

Inspection by Taiwanese port authorities is another area where enforcement appears weak[395] and where the "first landing" stipulation may provide an easy loophole to account for lax or lacking inspections, on the theory that once compliance with catch regulations is established the fish may be processed per industry practices to prepare the catch for sale, and the ability to assess compliance is invalidated because conditions are necessarily altered. Given that Taiwan considers that the majority of its shark catch is first landed in foreign ports and then is partially transported to Taiwan,[396] it may allow this as the legal loophole that eliminates the requirement for inspecting for compliance upon arriving in a Taiwanese port.[397]

The hard questions need to be asked, and answers need to be demanded. Why, in the face of all the available data, are governments and international bodies still so reluctant and so slow to develop corrective action? All evidence points to a dire situation, yet still we lack the ability to sustainably manage this resource, which is valuable to the global economy and ecosystem.

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395 Lisa Ling, CNN, *Shark Fin Soup Alters an Ecosystem*, http://www.cnn.com/2008/WORLD/asiapcf/12/10/pip.shark.finning/index.html#cnnSTCText (updated Dec. 15, 2008) (accessed Nov. 21, 2010). In December 2008, CNN reporters in Taiwan's southern port city of Kaohsiung watched as the fishermen unloaded their catch.

> Thousands of fins were thrown from one of the ships . . . . [Despite Taiwan's NPOA provisions advising against finning] we see more fins than bodies as a forklift scoops up large piles of fins and dumps them into a truck. There are no signs of anyone monitoring the weight ratio or making sure there's no illegal fishing of the five shark species protected under international treaty.

Id.; *see also* Ken Kieke, *Shark's Fin: No Longer on the Menu*, http://www.culture.tw/index.php?option=com_content&task=view&id=891&Itemid=156 (updated Sept. 15, 2008) (accessed Nov. 21, 2010) (citing evidence that Taiwan is not following its regulations. "[T]here are ample photographs of piles of shark fins in Taiwan's fishing ports, including many places selling young shark fins. In addition, Taiwan imported 1,720 tons of shark fins between 2005 and 2007.").

396 *NPOA-Taiwan*, *supra* n. 42, at ¶ 3.3 ("Most [shark catch is] landed . . . at foreigner bases . . . .").

397 See WildAid, *Unrecorded Wastage*, *supra* n. 38, at 7–8. (reporting that, on May 31, 2003, a Taiwanese vessel, the Goidau Roey No.1, was found with 30 tons of fins on board and no carcasses. This cache was found during an off-duty check. The vessel had docked "outside the legal landing hours" to avoid detection. No legal action was taken. No official sanctions occurred as a result of this "inspection." Although there is no data on who owned this particular boat, the connection with Taiwanese regulations lies in the fact that Taiwanese businesses have relatively large fleets that fish in Costa Rican waters. One such business relayed that he owned 200 boats, about half of which go "straight home with their catch." He relayed that his boats target sharks for their fins and that they can each land a few tons of fins without the carcasses on each return trip. He states that although the shark catch is declining in Costa Rica, catches are still large enough to make the investment of fishing Costa Rican waters worthwhile. It seems an obvious point that if such cargo was sanctioned by regulations upon landing in Taiwan they would not justify the business investment.).

C. Grassroots, NGOs, and the Court of Public Opinion: Will PSAs Force the IPOA?

Public awareness is rising, NGOs are publicizing, scientists are informing, and elected officials are listening. Some say that in the U.S. this may stir government to action, but in other countries public opinion is less influential; it cannot be counted on as a force in shaping laws and regulations. However, there is evidence to the contrary.

International trade and business is a powerful trunk line carrying the influential opinion of public preferences across national boundaries. Take, for example, the recent case where two whale sharks, purchased from Taiwan, were housed at the Georgia Aquarium and died.[398] They represent a sizeable investment paid out to Taiwan. They also provided much positive publicity to the more than 5 million visitors to the museum, showing that Taiwan is a "beautiful country that cares about the environment."[399] The aquarium believes that the death of two of the sharks in 2007 was an influencing factor in Taiwan's decision to institute a complete ban on hunting the creatures because of the public awareness it raised with the exhibit.[400] A Taiwanese national involved in the transport of the whales to the aquarium believes that the deaths helped conservation efforts because the Taiwanese, whose awareness is growing regarding the need for protections to conserve these creatures, demanded answers from the government about the deaths and what it was doing to safeguard the creatures.[401] Taiwan disputes these explanations as unfounded speculations and asserts that it was planning a complete ban independent of this event.[402] But, in another report, the Director-General of Taiwan's Fisheries Administration states that he hopes the ban proves to the Taiwanese people that the government is committed to the conservation of the whale shark.[403]

Another example of the influence the international voice can have involving national policy and conservation actions again involves Taiwan. Circa 2001, Taiwan's Fisheries Administration stated that it was instituting certain shark conservation measures "[i]n response to the increasing concern from the international community," including mea-

398 Ron Brownlow, Taipei Times, *Are Whale Sharks the New Panda?*, http://www.wildsingapore.com/news/20070708/070715-1.htm (July 15, 2007) (accessed Nov. 21, 2010); *see generally* Ga. Aquarium, *Visitor Information*, http://www.georgiaaquarium.org/visitUs/ (accessed Nov. 21, 2010) (offering website information on the aquarium where the whale sharks died).

399 Brownlow, *supra* n. 398.

400 *Id*.

401 *Id*.

402 *Id*.

403 The Marine Conserv. Socy., *supra* n. 349.

sures for the whale shark specifically and its commitment to developing an NPOA-Sharks.[404]

The recent 2008 Summer Olympics held in Beijing were a sounding board for a number of environmental issues, and finning was one of them. NGOs filmed public service announcements (PSAs) with athletes, strongly denouncing the practice of finning and calling for people to stop eating shark fin soup.[405] NGOs use PSAs and other consumer awareness campaigns in their strategy to strengthen conservation laws internationally.[406]

VI. WHAT TO DO?

This Part proposes an answer to the question of what should be done. It offers a solution based on a framework of political will, regulation, enforcement, and consideration of livelihoods—a factor gaining prominent consideration in many areas of environmental problem solving.

Averting wholesale extinction requires combining legal and nonlegal frameworks at both the international and national level. The question "what should we do?" finds a solution in these foundational elements: (1) political will, (2) binding commitment, (3) local legislation, (4) enforcement that is enforced, (5) attention to livelihoods, and (6) education.

As with many things, the answer is simple but the execution is complex—complex but not necessarily difficult. The formula is really straightforward—there must exist the political will to develop strong laws to protect the public interest and welfare, and those laws must be enforced consistently. Alternative livelihoods must be provided where the laws remove or greatly limit resources relied on for personal sustenance or commerce. Political will, laws, and enforcement can only provide a stable, sustained solution when livelihoods are not at issue, otherwise the incentive to poach, to beat the system, to fuel an insidious unregulated network, will be constantly at work to undermine the protective management framework.

This Part develops the theory that sustainable management of environmental resources is achieved by building awareness, giving rise to the political will to conserve and effectively manage resources based on scientific data and economic evaluation that considers impacts on livelihoods in the solutions forged that provide for the effective enforcement at the international and national levels. This theory emphasizes that in the case of highly migratory species (HMS) such as sharks, a

404 Web of Fisheries Agency, Council of Agric., Executive Yuan, R.O.C., *Shark Fishery in Taiwan* 3, http://www.fa.gov.tw/eng/guide/sharke.php (site no longer available) (on file with *Animal Law*).

405 WildAid, *Shark Conservation Program*, "Watch Our Shark Conservation Public Service Announcements Here," http://wildaid.org/index.asp?CID=72 (accessed Nov. 21, 2010).

406 *Id.*

solution cannot be found in unilateral decisions by one or several nations but requires international collaboration and cooperation that is binding, not voluntary.[407] This Part develops this theory, focusing primarily on the legal instruments and mechanisms in place today that could be enhanced to avert the trajectory to anthropogenic extinction that many shark species are on.[408]

A. Internationally: It's Time for COFI Members to Commit and to Be Bound

We have spent over a decade with international calls to voluntary action that have stood primarily as impotent witnesses in the face of an unabated decline in the shark populations.[409] This decline is acknowledged by many ocean resource conservation and management organizations to be a crisis not only for the shark, but also for the very balance of the oceans—which, by association, extends to humankind.[410]

It is time to rethink and regroup. International bodies such as Convention on International Trade in Endangered Species (CITES) and Convention on Migratory Species (CMS) have expressed their concern that the International Plan of Action for Sharks (IPOA-Sharks) has not been able to achieve the shark management and conservation needed to ensure long-term survival of the species as a whole.[411] Of

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407 This is an important point, because one of the pivotal factors missing in the shark crises today is the lack of binding commitment. Voluntary international agreements are not galvanizing follow through. The economic forces are too powerful and the gravity of the consequences of stripping the oceans of sharks are too great to leave the outcome to an "if you would like to" decision.

408 *See* Intl. Inst. for Sustainable Dev., *supra* n. 158, at 4 (providing per the FAO that "over 40% of migratory shark species are threatened and 15% are depleted").

409 *See* HSI, *Convention on Migratory Species-Sharks*, http://www.hsi.org.au/index.php?catID=147 (Dec. 11–13, 2007) (accessed Nov. 21, 2010) (reporting that "HSI is keen to see a legally binding agreement negotiated for migratory sharks at future meetings."); *see also* CMS, *UNEP/CMS/MS/CS.2: Meeting to Identify and Elaborate an Option for International Cooperation on Migratory Sharks Under the Convention on Migratory Species "Report Working Group 1"* 2, http://www.cms.int/bodies/meetings/regional/sharks/pdf_docs/Concluding_Statement_2_SharksOutcome_E_rev9Jun08.pdf (Dec. 13, 2007) (accessed Nov. 21, 2010) (encouraging the FAO "to promote greater uptake of the [IPOA-Sharks] . . . as a matter of urgency.").

410 Griffin et al., *supra* n. 7 (explaining why sharks are necessary to a healthy ocean ecosystem).

411 *See* CMS, *UNEP/CMS/Recommendation 8.16: Migratory Sharks*, http://www.cms.int/bodies/COP/cop8/documents/proceedings/pdf/eng/CP8Rec_8_16_Migratory_Sharks_E.pdf (Nov. 20–25, 2005) (accessed Nov. 21, 2010) (calling for urgent action and stronger measures to protect sharks and shark habitat and urgently promoting FAO COFI members to act on the IPOA); *see also* CITES, *Decisions of the Conference of the Parties: Note from the Secretariat*, "Regarding the Biological and Trade Status of Sharks," §§ 10.73–10.74, 138, http://www.cites.org/eng/cop/10/E10-Decisions.pdf (accessed Nov. 21, 2010) (creating procedures to develop and propose a new plan of action to further shark conservation efforts); CITES, *Doc. 11.11.1: Eleventh meeting of the Conference of the Parties: Gigiri (Kenya), 10–20 April 2000: Strategic and Administrative Matters: Committee Reports and Recommendations: Animals Committee: Report of the*

591 species on the World Conservation Union (IUCN) Red List, 126 are "globally threatened,"[412] 107 are "near threatened," and the status of 205 cannot be determined because the data is deficient.[413] Since May 2006, 44 species of shark have been added.[414]

The IPOA-Sharks along with its companion implementation piece, the Farm and Agriculture Organization (FAO) Technical Guidelines (FTG), provide much of what is needed to address and remedy the crisis. The IPOA provides for the following protections: ensuring that both target and non-target catches are sustainable; periodic State review of its NPOA-Sharks (NPOA) for potential to increase effectiveness with cost-effective measures; advising States to cooperate with Regional Fishery Management Organizations (RFMOs) in achieving sustainable shark populations; developing regional or subregional shark plans if necessary; creating subregional or regional shark plans in addition to NPOAs where appropriate; encouraging States to cooperate amongst themselves in developing conservation and management plans where two or more States exploit a given shark stock; advising that NPOAs improve the ability to consult and coordinate with stakeholders across disciplines within State and between States (management, research, and education); providing for habitat protection and sustainable harvest practices by assessing threats to shark populations; protecting critical habitat; implementing sustainable harvest strategies; giving special attention to vulnerable or threatened shark stocks; encouraging the full use of dead sharks; minimizing waste and discards; improving species-specific catch and landings data collection; improving monitoring of shark catches; and improving data collection on shark catches.[415]

The FTG advises States developing their NPOAs to describe the prevailing state of associated fisheries' shark stock and populations. The FTG further advises associated fisheries to develop a management framework including enforcement that will: (1) monitor various activities, (2) collect and analyze relevant data, (3) perform research in the areas mentioned above, (4) build capacity in various areas to perform these functions, and (5) implement management measures. Finally, the FTG advises states to identify possible NPOA objectives, providing examples of model objectives such as: ascertaining control over access of fishing vessels to shark stock; decreasing fishing effort in any shark habitats where catch is unsustainable; improving the utilization of

Chairman ¶¶ 19–20, http://cites.org/eng/cop/11/doc/11_01.pdf (accessed Nov. 21, 2010) (stating that although progress has been made, there are still concerns that need to be addressed).

412 IUCN, *IUCN Red List 2008*, *supra* n. 352 (showing shark species "Critically Endangered, Endangered, Vulnerable").

413 *Id*.

414 IUCN, *Release of the 2006 IUCN Red List of Threatened Species Reveals Ongoing Decline of the Status of Plants and Animals*, http://www.flmnh.ufl.edu/fish/organizations/ssg/2006Mayredlist.pdf (accessed Nov. 21, 2010).

415 *IPOA-Sharks*, *supra* n. 123, at 14–15.

sharks caught; improving data collection and monitoring of shark fisheries; training all concerned in identification of shark species; facilitating and encouraging research on little known shark species; and obtaining utilization and trade data on shark species.[416]

The IPOA-Sharks' primary failing is that it is voluntary and not binding. The United Nations (UN) could reconvene the UN's Food and Agriculture Organization Committee on Fisheries (COFI) Parties and, as encouraged by CMS, promote a binding global instrument capable of protecting migratory sharks[417] by negotiating convincingly in light of the evidence for a binding resolution making its provisions mandatory. In the process, the UN should also include certain provisions that do not currently exist. To be effective in accomplishing the elusive goal of sustainable utilization, the IPOA-Sharks must include an absolute ban on finning. This ban must be achieved by a mandatory fins-attached provision throughout transport until the carcass and fin are actually offloaded for processing. The provision must list acceptable exceptions to the rule that do not allow convenient and easy ways to routinely ignore the fins-attached mandate.[418] When a vessel has fins on board that are separate from a carcass, the ban should dictate that a violation is presumed. In order to avoid penalties, the vessel master should have to produce clear evidence demonstrating how the stated exceptions apply.

In addition to the fins-attached requirement and its enforcement provisions, the IPOA-Sharks should require that only targeted fisheries may land shark catch. This would mean that all shark catch would be regulated, a measure that would significantly reduce the excessive taking of sharks as bycatch. The proposed requirements would remedy a number of ills that exist such as the loss of species-specific data, the ease of illegal taking, and the reduction of unregulated and unreported catches. This would foster the gathering of data needed to effectively manage shark stocks and would allow, among other benefits, regulatory agencies and inter-governmental bodies such as RFMOs to set catch limits. Protective catch limits do not currently exist for most species of sharks, but they are an important element in fishery management.[419]

The IPOA-Sharks should include another important measure for regulating shark population: the return of live incidental or bycatch sharks to the ocean. The data shows that sharks' survival rate is quite high even when hooked for extended periods on a longline.[420]

In addition to these new provisions, the IPOA-Sharks must establish an administrative body, including a secretariat whose duties

416 *FAO Tech Guidelines*, *IPOA-Sharks*, *supra* n. 115, at § C, 33–34.

417 CMS, *Migratory Sharks: Excerpt from CMS Cop Resolution 8.5*, http://www.cms.int/bodies/meetings/regional/sharks/pdf_docs/Inf_04_CMS%20COP_Res_8.5_excerpt_.pdf (July 12, 2007) (accessed Nov. 21, 2010).

418 *See EU 1185*, *supra* n. 246, at § 7 art. 4.

419 *More Oceanic Sharks*, *supra* n. 375.

420 WildAid, *End of the Line*, *supra* n. 6, at 20.

would include cooperating with other bodies to whom the parties are bound. The secretariat should help promote effective coordination and stipulate that where sharks are at issue, the IPOA-Sharks supersedes any other obligation that provides weaker protections than the measures specified in the IPOA-Sharks. The IPOA-Sharks should also establish an advisory committee and working groups as needed for different species or different regions. IPOA should also establish a Conference of the Parties (CoP) to meet at least annually.[421] The administrative structure should further include specific provisions delineating dispute resolution and should identify an existing dispute resolution body or establish one for itself.[422] Like CITES, the IPOA-Sharks binding agreement should include specific procedures and penalties for non-compliance.[423]

B. Nationally: Forge the Model to Follow—Swift Passage of the Shark Conservation Act of 2009

The U.S. is poised to pass into law legislation that would place it in a position of global leadership on shark management. As one of the ten largest suppliers of fins to Hong Kong, the U.S. would provide a strong model to follow.[424]

Rep. Madeleine Bordallo from Guam introduced to the U.S. House on April 9, 2008, a bill to amend the MSA that would close the existing loopholes in the Shark Finning Prohibition Act (SFPA).[425] The bill would remove the language restricting violations specifically to "fishing vessels" and replace the fin-to-carcass ratio compliance measure with a requirement that the shark may only be landed if fins and tail are "naturally" attached.[426] Rep. Bordallo's bill, the Shark Conservation Act, would make the language of the SFPA stronger and more precise by: (1) making it illegal to have a fin on board a vessel that is not naturally attached to the shark carcass; (2) making it illegal to remove

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421 Perhaps the COFI meeting could be reformed to provide this function.

422 *See e.g.* Howard Schiffman, *The Dispute Settlement Mechanism of UNCLOS: A Potentially Important Apparatus for Marine Wildlife Management*, 1(2) J. Intl. Wildlife L. & Policy 293, 293–306 (1998) (available at http://www.jiwlp.com/contents/schiffman.pdf (accessed Nov. 21, 2010)) (examining the UNCLOS dispute resolution procedure and how it may provide guidance for disputes regarding marine wildlife management).

423 CITES, *Conf. 14.3 CITES Compliance Procedures* at ¶¶ 21, 29, http://www.cites.org/eng/res/all/14/E14-03C15.pdf (Mar. 2004) (accessed Nov. 21, 2010).

424 Oceana, *supra* n. 384.

425 H.R. 5741, 110th Cong. (Apr. 9, 2008) (available at http://thomas.loc.gov/bss/; *select* 110th Congress, *search* "shark conservation," *select* H.R. 5741, *select* Text of Legislation, *select* H.R. 5741.RFS (accessed Nov. 21, 2010)).

426 *Id*. at § 3 (Some readers may judge the use of "naturally" attached as unnecessary language because simply stating "attached" is sufficient. However, consider Costa Rica, where operators seeking to circumvent national regulations and continue the practice of finning would land fins tied to a carcass in order to circumvent literal applications of a law that did not specifically require fins to be "naturally" attached); PRETOMA, *supra* n. 38.

the tail as well as the fin (the tail must also be naturally attached); (3) making it illegal to transfer vessel-to-vessel fins or tails that are not naturally attached; (4) creating a rebuttable presumption that, where there are fins separate from the bodies on a non-fishing vessel, they were transferred in violation of the SFPA; and (5) making it illegal to land a fin separated from a carcass or land a carcass without fin and tail attached.[427]

In addition to amending the MSA, Rep. Bordallo's bill would amend the High Seas Driftnet Fishing Moratorium Protection Act (HSDFMPA) so that vessels from nations that do not have a shark conservation program equivalent to the U.S. program, taking into account different conditions,[428] will not be allowed to enter U.S. waters or enter U.S. ports.[429] This amendment includes the requirement that, in order to be allowed access to the U.S., a nation's conservation plan must contain measures that prohibit the removal of a shark's tail or its fins at sea.[430]

Although the bill had good support and passed swiftly through the House, the Senate was slow to move on the bill. Rep. Bordallo first introduced the House bill in April of 2008.[431] It passed the House and proceeded to the Senate on July 9, 2008, where it was referred to committee and sat until after President Barack Obama's inauguration and the start of the new Congressional session.[432] Because of the change in Congressional sessions from the 110th to the 111th, the bill, which had stalled in the Senate committee, had to be resubmitted as a new bill.[433] After being assigned a new House bill number (now H.R. 81 rather than H.R. 5741), Rep. Bordallo once again introduced the bill to the House on January 6, 2009.[434] The House, still firm in its commitment to the passage of this bill and on motion to suspend the rules, passed the bill by voice vote on March 2, 2009.[435] Once again, the bill

427 H.R. 5741, *supra* n. 425.

428 Chris Wold et al., *Trade and the Environment*, 336 (Carolina Academic Press 2005) (conveying that in international trade relations a World Trade Organization (WTO) member may not require other members to adopt the same regulatory program to achieve policy goals without allowing differences in enforcement and regulation due to "different conditions").

429 H.R. 5741, *supra* n. 425 (H.R. 5741 amends 16 U.S.C.A. 1826k(a) to include shark conservation; 1826k(b) points to enforcement of 16 U.S.C.A. 1826j, which includes 16 U.S.C.A. 1826a(a) (nonallowance in U.S. waters or U.S. ports).).

430 *Id*. at § 3.

431 Lib. Cong., THOMAS, http://thomas.loc.gov/bss/; *select* 110th Congress, *search* "shark conservation," *select* H.R. 5741, *select* All Congressional Actions (accessed Dec. 29, 2010)).

432 *Id*.

433 Cleveland-Marshall College of Law, *Types of Federal Legislative History Documents*, http://www.law.csuohio.edu/lawlibrary/resources/lawpubs/LegislativeHistory/TypesofDocuments.html (accessed Nov. 21, 2010).

434 Lib. Cong., THOMAS, http://thomas.loc.gov/bss/; *select* 111th Congress, *search* "shark conservation," *select* H.R. 81, *select* All Congressional Actions (accessed Dec. 29, 2010)) [hereinafter *Congressional Actions on H.R. 81*].

435 *Id.*

passed to the Senate, was introduced on March 3, 2009, and once again was referred to committee.[436] The bill was amended by the Senate and was placed on the Senate Legislative Calendar on February 4, 2010.[437] On December 20, 2010, just two days before the second session of the 111th Congress adjourned, the Senate passed the bill by unanimous consent.[438] On December 21, 2010, the House affirmed by voice vote the bill as amended by the Senate.[439] The bill was presented to President Obama on December 28, 2010 and was signed into law as Public Law 111-348 on January 4, 2011.[440]

Although on whole the Senate amendments strengthen the bill initially passed from the House by mandating that the Secretary work to advance shark conservation on an international level[441] and include shark conservation in efforts to reduce IUU,[442] in the final days before passage the Senate created a concession exempting the Smooth Dogfish, setting an unprecedented 12% fin-to-carcass ratio compliance measure.[443] This creates a loophole in an otherwise uncompromising ban on the practice of finning with a nationwide "fins naturally attached" requirement for landing shark fins.

C. Enforce Enforcement

Enforcement was a main topic at CITES thirteenth Convention of the Parties (CoP13). The conference opened with an urgent call to member countries to strengthen regional cooperation and international law enforcement, recognizing that illegal trade in wildlife is conducted by "organized criminal networks."[444] CITES's Secretary

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436 *Id*. Ocean conservation groups were actively lobbying to pass this legislation. *See e.g.* Oceana, *Sharks: Take Action for Sharks*, http://na.oceana.org/en/our-work/protect-marine-wildlife/sharks/learn-act/take-action-for-sharks (accessed Nov. 21, 2010) (website encouraging citizens to petition their Congressional representatives to support this legislation).

437 Lib. Cong., THOMAS, http://thomas.loc.gov/bss/; *select* 111th Congress, *search* "shark conservation," *select* S.850, *select* All Congressional Actions (accessed Dec. 29, 2010)).

438 *Congressional Actions on H.R. 81*, *supra* n. 434.

439 *Id*.

440 *Id.*

441 Lib. Cong., THOMAS, http://thomas.loc.gov/bss/; *select* 111th Congress, *search* "shark conservation," *select* H.R. 81, *select* Major Congressional Actions, *select* Became Public Law No: 111-348 (accessed Jan. 9, 2011).

442 *Id*.

443 *Id.* The 12% ratio is not supported by scientific findings as within the range of a shark's fin-to-body ratio for any shark species. *See* IUCN, *Shark Finning*, *supra* n. 97 at 3 (stating that the 2–5% ratio currently used to determine compliance already allows a take of fins in excess of the actual sharks kept because the actual average fin-to-body ratio is 1.69%). Such a ratio opens the door for the practice of finning to continue for the Smooth Dogfish, and the possibility of taking other sharks by finning as well. *See id.*; *see also* HSUS, *Shark Conservation Act Wins Final Congressional Approval*, http://www.humanesociety.org/news/press_releases/2010/12/shark_conservation_act_passed_122110.html (Dec. 21, 2010).

444 Env. News Serv., *Illicit Wildlife Trade Organized and Dangerous, CITES Told*, http://www.ens-newswire.com/ens/oct2004/2004-10-05-03.asp (Oct. 5, 2004) (accessed

General stated, "We are in danger of losing the war against wildlife crime . . . unless modern professional law enforcement techniques are directed against criminals who care for nothing but profit, who exploit some of the world's poorest communities and take advantage of periods of civil unrest and instability."[445] Many conditions exist to frustrate the efforts of enforcement: lack of government support, lack of regional cooperation, and the inability to readily exchange data with enforcement agencies in different countries.[446]

Enforcement is costly. Staffing, equipment, and data-sharing systems all require an investment by the government intent on eliminating illegal wildlife trade. CITES CoP14 adopted a resolution calling on nations to increase enforcement capacity.[447] Recommendations contained in the resolution include: develop national plans of action for developing effective enforcement; provide adequate funding and personnel to enforcement agencies; ensure that penalties act as a deterrent; provide adequate training to enforcement personnel; raise public awareness of the issues of illegal wildlife trade.[448]

Some options that should be employed to assist enforcement in controlling shark management regulations include adequate funding for staff and equipment,[449] and the use of international data sharing Internet systems, on-board observers, dock-side observers, and vessel monitoring systems.[450] Certain RFMOs provide a model for how this might be implemented by other RFMOs and national agencies. The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) employs 100% on-board observers who observe fisheries. The observers are assigned a level of authority to engender respect and cooperation.[451] CCAMLR also requires that vessels of

Nov. 21, 2010); *see also* The Fla. Museum of Nat. History, *CITES Shelters Sawfish, Eels, But Enforcement Lacking*, http://www.flmnh.ufl.edu/fish/sharks/InNews/shelters2007.html (site no longer available) (on file with *Animal Law*) (June 12, 2007) (comparing organized environmental crime to drug trafficking, human trafficking, and weapon trafficking).

445 Env. News Serv., *supra* n. 444.

446 Tech. for Conserv. & Dev. Project, *Innovative Alliance Between UN University & Asian Conservation Alliance to Tackle Wildlife Crime*, http://www.t4cd.org/Projects/Project%20of%20the%20Month/Pages/Project%20of%20the%20Month.aspx (accessed Nov. 21, 2010) [hereinafter *Innovative Alliance*].

447 CITES, *CoP14: European Community Action Plan on Cites Enforcement* 4 § II, http://www.cites.org/common/cop/14/inf/E14i-60.pdf (June 3–15, 2007) (accessed Nov. 21, 2010).

448 *Id*. at 4 § II(b).

449 *Id*. (stating that it is necessary to ensure "that all relevant enforcement agencies have adequate financial and personnel resources for the enforcement of Regulation").

450 FAO, *FAO Technical Guidelines for Responsible Fisheries: 9: Implementation of the International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing* § 8, ftp://ftp.fao.org/docrep/fao/005/y3536e/y3536e00.pdf (2002) (accessed Nov. 21, 2010); *see also Innovative Alliance*, *supra* n. 446 (as an example of Internet systems that may be available to use or to build from).

451 CCAMLR, *Text of the CCAMLR Scheme Of International Scientific Observation* (CCAMLR Dec. 2008) (available at http://www.ccamlr.org/pu/e/e_pubs/cm/97-98/

members to the Convention utilize vessel monitoring system technology (VMS) and requires inspection with CCAMLR designated inspectors.[452] Finally, CCAMLR requires that violations found during an inspection carry penalties sufficient to deter continued offense.[453] CCAMLR has a data exchange system and provides convention members with access to all the data maintained by their data system.[454] The IATTC also has 100% observer coverage on vessels operated by members to the convention and requires those vessels to employ VMS technology.[455] The IOTC requires observers to monitor and report on compliance with the 5% ratio for shark landings.[456] NAFO requires all vessels fishing in the Convention area to utilize VMS, carry at least one observer, submit to at-sea inspections—making it a "serious offense"[457] to impede or obstruct inspections—and land at authorized ports.[458] Port authorities are expected to inspect each NAFO vessel landing at port.[459] NGOs provide a potential source of staffing as well as talent for developing tools to assist enforcement.[460] For example, the UN has been engaged with an Asian NGO in developing an Internet database and information exchange system to combat wildlife crime.[461]

Finally, implementing a global fins-attached compliance measure would also enhance the ability to enforce management of threatened or endangered shark species. When fins are mingled together, separated from the body of the shark as the current 5% ratio compliance measure

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sysofobs.pdf (accessed Nov. 21, 2010)) (stating that "[t]he scientific observers shall be given the status of ship's officers").

452 *See* Dept. of Fisheries Can., *Commission for the Conservation of Antarctic Marine Living Resources*, http://www.dfo-mpo.gc.ca/fgc-cgp/documents/meltzer/CCAMLR.pdf (Apr. 2005) (accessed Nov. 21, 2010) (chart depicting CCAMLR enforcement); *see also* CCAMLR, *Text of the CCAMLR System of Inspection* (Dec. 2008) (available at http://www.ccamlr.org/pu/e/e_pubs/bd/pt9.pdf (accessed Nov. 21, 2010)) [hereinafter CCAMLR, *System of Inspection*) (stating that sanctions with "respect to infringements of CCAMLR provisions shall be sufficiently severe as to ensure compliance").

453 CCAMLR, *System of Inspection*, *supra* n. 452, at § XIII.

454 CCAMLR, *Rules for Access and Use of CCAMLR Data* (Dec. 2008) (available at http://www.ccamlr.org/pu/e/e_pubs/bd/pt11.pdf (accessed Nov. 21, 2010)).

455 *See* Dept. of Fisheries Can., *Inter-American Tropical Tuna Commission*, http://www.dfo-mpo.gc.ca/fgc-cgp/documents/meltzer/IATTCfinal.pdf (Apr. 2005) (accessed Nov. 21, 2010) (providing a chart depicting IATTC enforcement).

456 *IOTC Resolutions*, *supra n.* 171, at 156–57.

457 N.W. A. Fisheries Org., *Annual Compliance Review*, http://www.nafo.int/fisheries/compliance.html (accessed Nov. 21, 2010).

458 N.W. A. Fisheries Org., *Monitoring, Control and Surveillance*, http://www.nafo.int/fisheries/regulations/monitoring.html (accessed Nov. 21, 2010).

459 *Id*.

460 *Innovative Alliance*, *supra* n. 446 (referring to CITES CoP13 Resolution Conf. 11.3, and recommending that parties use information from NGOs to assist enforcement while advising also specific measures for confidentiality in the exchange of information).

461 *Id*. The project is called the Wildlife Enforcement Monitoring System (WEMS). Technologies for Conserv. and Devel. Project, *Wildlife Enforcement Monitoring System (WEMS)*, http://www.t4cd.org/Resources/ICT_Resources/Projects/Pages/WildlifeEnforcementMonitoringSystem(WEMS).aspx (accessed Nov. 21, 2010).

allows, it is almost impossible for inspections agents to determine the species of shark that hosted the fin.

D. Livelihoods—Attend the Unattended

That which is disregarded undermines that which is considered. The dictionary in part defines "unattended" as that which is "not cared for" and "not tended to."[462] These observations collectively provide a reasonable composite of the condition of many who are involved in finning. Economically, those who are practicing finning are severely on the margins, and when it comes to developing proposals to cure overexploitation they are seldom provided with an alternative livelihood to replace income that is removed or gravely limited. This situation is one of the main contributors to perpetuating the current cycle of swimming against the tide when it comes to attempting to manage and control shark populations—or any environmental resource, for that matter, that requires managing while at the same time providing strong economic incentives for its consumptive use. For example, a ban on hunting whale sharks by the Philippine government was met with opposition by subsistence fishers. "Give us livelihood or we won't stop hunting the whale sharks. . . . If the government will prohibit us from hunting, we would rather go to jail. Can the government give us food and send our children to school?" [one fisher] lamented. Many other fishermen agreed.[463]

In another example, Indonesian fishers arrested by Australian officials for illegal, unregulated, and unreported (IUU) fishing and finning in Australian waters declared that they would continue to return.[464] In 2002 alone, Australia intercepted 108 Indonesian vessels illegally fishing for fins in Australian waters.[465] The incentives for subsistence fishers that survive on an otherwise meager existence are too high and options for alternative livelihoods are not available.

Taiwan provides an example of government responsibility to fishers as part of an overall plan to implement conservation measures. When the death of the two whale sharks at the aquarium stirred adverse public opinion against the Taiwanese government internationally as well as domestically, the Taiwanese government ordered the release of the captured whale sharks awaiting sale and paid the fishers the equivalent of $104,000 USD for their cooperation in releasing the

462 *Webster's Third New International Dictionary* at 2482.

463 Marilyn G. Baldo, Whale Watching Web, *Whale Shark Hunters Seek New Livelihood*, http://www.helsinki.fi/~lauhakan/whale/asia/philippines/whalesha.html (accessed Nov. 21, 2010) (demonstrating the intense pressures that abject poverty and the concerns of livelihood pose in the face of efforts to implement conservation measures for threatened and endangered species).

464 WildAid, *Unrecorded Wastage*, *supra* n. 38, at 5.

465 *Id*. at 4–5.

sharks.[466] The government notified the fishers that, if more whale sharks were accidentally caught in nets, fishers should inform the government immediately and in order to receive a "cash-reward" to keep the whale sharks alive for release.[467]

The link between livelihoods and effective conservation has gained attention in the last decade. Community based conservation (CBC) (or community centered conservation) programs aim to retool and involve local communities in conservation objectives while providing non-consumptive alternative means of income.[468] CBC data shows that the programs promote conservation goals and achieve sustainable conservation outcomes.[469] For example, in June 2008 the IUCN conducted a workshop in Senegal, an African country connected with the shark trade.[470] The Senegalese eat shark meat and supply the fin trade.[471] As part of a CBC, the IUCN trained thirty-five Senegalese women who worked in shark meat processing plants to shift from processing endangered shark to Sardinella, an abundant and traditional staple in the country that provides a commercially viable substitute for shark meat.[472]

Other CBC projects for non-shark fisheries demonstrated positive socio-economic changes over time.[473] The fishers' lives and incomes improved significantly, production increased dramatically, and some fish species that had not been recorded for many years returned, substantiating the proposition that where the communities are involved in sustainable practices and ecologically sound harvesting, those communities benefit more than expected.[474]

In addition to the work being done with CBCs, CITES has turned its focus to the issue of livelihood not as a substitute for necessary conservation measures but as a recognized element in the success of conservation measures.[475] CITES emphasized that, while it does not

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466 Fla. Museum of Nat. History, *COA Bans Fishing for Whale Sharks*, http://www.flmnh.ufl.edu/fish/sharks/InNews/ban2007.html (May 27, 2007) (site no longer available) (on file with *Animal Law*).

467 *Id*.

468 The Jane Goodall Institute, *About JGI: Mission and History*, http://www.janegoodall.org/about-jgi (accessed Nov. 21, 2010).

469 *Id.*

470 *See* IUCN, *Learning a New Trade to Save Sharks in Senegal*, http://www.iucn.org/about/work/programmes/species/about_ssc/sir_peter_scott_fund/psf_projects/psf_shark_meat_trade/?1374/Learning-a-new-trade-to-save-sharks-in-Senegal (June 25, 2008) (accessed Nov. 21, 2010) (discussing a workshop aimed at teaching Senegalese shark consumers alternative methods of food production).

471 *Id*.

472 *Id*.

473 The WorldFish Ctr., *Fisheries and Coastal Resources Co-Management in Asia: Selected Results From a Regional Research Project* pt. 2, ch. 6, at 151 (The WorldFish Center 2006) (available at http://www.povertyenvironment.net/node/632 (accessed Nov. 21, 2010)).

474 *Id.*

475 CITES, *CoP Doc XX.XX: Interpretation and Implementation of the Convention: CITES and* Livelihoods § 12 (June 3–15, 2007) (available at http://www.cites.org/com-

intend to compromise necessary conservation measures,[476] it does recognize the benefits to the conservation objectives in mitigating the impacts to the poor or even taking steps to improve their situation as a result of a conservation measure.[477] Members debate whether these considerations belong under the auspice of CITES because of the potential to compromise its fundamental purpose—the protection of flora and fauna from extinction as a result of over-exploitation due to international trade. Members also debate whether such considerations are better addressed by another convention such as the CBD, or, perhaps, whether developing a CITES-CBD synergy would be the proper channel.[478] While there is much debate about how CITES should go about enacting this amendment, or whether it should, the international community is realizing a connection between successful implementation of conservation initiatives, the preservation and sustainable utilization of valuable resources, and maintaining livelihoods, particularly of the poor in developing countries who depend on the consumptive use of those resources to survive.

CITES's recent attention to livelihoods addresses the concerns of the poor.[479] Livelihoods considerations, however, do not only apply to the poor, subsistence, or artisanal fishers. Livelihoods considerations should include impacts of conservation measures on the resource dependent communities in developed countries' fisheries as well. This is not to indicate that avoiding the decisions needed to conserve declining resources or that economic evaluations should cancel the conservation necessary to sustain the resource in question. This would serve no gain because, in the long run, the resource would be exhausted and any concerns of economic loss or reduction would be irretrievably proven correct.

Recognizing that sustainable solutions rely on public support, economics is a significant factor when developing conservation plans. Developing and maintaining the political will to implement conservation management measures requires the support of people whose livelihoods depend on the resource potentially being limited. Governments must consider the impact of proposed legislation on the communities affected and work with those communities to develop alternatives for

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mon/cop/14/raw_docs/E-DE03-AR-CN-NI-Livelihoods.pdf (accessed Nov. 21, 2010)) ("The primary goal of CITES is and should remain to conserve biodiversity. . . . Nevertheless, there are ethical, political, and pragmatic reasons why this aim should be pursued in ways that contribute to the livelihoods of poor people affected by CITES trade regulation.").

476 CITES, *Workshop Report: CITES and Livelihoods Workshop: Centre for Biodiversity Conservation, Kirstenbosch Botanical Garden, Cape Town, South Africa: SC54 Inf. 7* 9 (Sept. 5–7, 2006) (available at http://www.cites.org/common/com/SC/54/E54i-07.pdf (accessed Nov. 21, 2010)) ("[I]t is important not to assume that downlisting is [the] only way to help livelihoods; there are a broad range of ways to address livelihoods.").

477 *Id*. at 10 ("[I]f CITES listing can be made positive for people, then [there] would be much greater cooperation.").

478 *Id*. at 9.

479 *Id*. at 1.

the income that may be diminished or eliminated by conservation restrictions.

This basic concept is codified in the MSA National Standards:

> Conservation and management measures shall, consistent with the conservation requirements of the Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.[480]

The MSA National Standards also realize that economics cannot be an end in themselves when determining whether and what conservation measures are warranted:

> Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose . . . .[481]

While exactly how to achieve the objective of developing conservation measures—to what extent the government has a duty to minimize the economic impact and how it should accomplish that end—is not specified, the MSA provides a statutory basis from which to work.

Reports show that marine life is worth more alive than dead.[482] Especially where conservation measures are needed and implementing them has an adverse economic impact, developing tourism and recreational industries is an option that can replace the income lost, oftentimes with the potential to exceed the income from the prior consumptive use of the threatened resource. One report shows that a survey of divers indicates that they will pay more to view wildlife where conservation efforts rehabilitate such valued species as sharks.[483] The survey indicated that divers would be willing to pay an additional annual total of $212 million USD.[484] This is in addition to the more than $4 billion USD that divers contribute to coastal communities. Another report relays that, over the past decade, the countries that are the most outspoken advocates for shark conservation are those that have or are developing "marine tourism."[485] Economic assessments show that people are willing to pay significant amounts of money to see or dive with sharks. The numbers indicate that sharks quantifiably are worth more to those who make a living from them in their natural state than on a plate. For example, a single reef shark in

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480 *NPOA-U.S.*, *supra* n. 90, at § 1.2.

481 *Id.*

482 *See* Oceana, *New Survey Finds Economic Incentive for Protecting Ocean Resources*, http://na.oceana.org/en/news-media/press-center/press-releases/new-survey-finds-economic-incentive-for-protecting-ocean-resources (Aug. 21, 2008) (accessed Nov. 21, 2010) (discussing the economic incentive in healthy marine ecosystems with respect to scuba diving).

483 *Id.*

484 *Id.*

485 WildAid, *End of the Line*, *supra* n. 6, at 14.

the Maldives retrieves a renewable income of $35,500 USD annually, whereas a reef shark will only provide a Maldives fisherman $32 USD.[486]

The important element in this potential for economic well-being based on "non-consumptive" uses lies in engaging the people of the region who would otherwise fish for sharks. For the benefits to result in an incentive not to continue fishing, by legal means or by poaching, economic structures must provide for wealth distribution of the increased tourism revenue to those affected. The conservation objectives will be undermined if increased tourism only provides extra revenue to a handful of already well-off operators who serve the tourists. Without the means to spread the benefits of the increased income within the many segments of the community that support the industry—by, for example, abstaining from harvesting—there is no incentive to comply. One approach to revenue distribution can be accomplished by directly engaging those who make their living by the consumptive use of the resource, such as fishers, in the tourism trade. For example, in the Donsol regions of the Phillipines, local fishers of whale sharks were retrained as guides for tourist excursions to experience the sharks in their natural habitat, contributing to a growing tourism industry during the whale shark season.[487] Another approach involves government, federal, state, and local investment in community development. Developing these topics lies outside the scope of this Article: suffice it to acknowledge that a rise in revenue does not naturally flow to those who are most affected by the conservation regulations. Attention must be given to how the revenue is distributed and an intentional investment in community development is required in order to ensure that those who are negatively impacted have reasonable economic options to replace a source of income that is eliminated or significantly reduced. Sharks are worth far more alive than dead.[488]

E. Raise Public Awareness—Stoke the Political Will

Raising public awareness can be a bottom-up[489] or a top-down[490] flow, and it is generally not one or the other, but both. Leadership is inspired or informed by its constituency of areas that need its attention. Leadership inspires or informs its constituents of areas that need public support. It is this synergistic mechanism that contributes to developing the political will necessary to develop, implement, and enforce

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486 *Id.*

487 *Id*.

488 *Id.*

489 Seismological Socy. of Am., *Breaking Omori's Law of Public Awareness*, http://www.seismosoc.org/publications/SRL/SRL_76/srl_76-3_op.html (July 23, 2005) (accessed Nov. 21, 2010) (suggesting that public interest incites political will).

490 UN-Habitat, *Political Will and Awareness*, http://mirror.unhabitat.org/content.asp?typeId=19&catId=461&cId=2254&activeId=2252# (accessed Nov. 21, 2010) (suggesting that the leaders of the UN Habitat group strategize developing political will by developing public awareness campaigns).

the laws and regulations needed to solve a global problem such as the shark crisis.[491]

Developing "public awareness," as used here, includes informing not only the general public through a variety of means but also the "leadership," which includes, inter alia, policy makers, governmental agents, inter-governmental entities, and international bodies that seek to influence the public on a particular issue, as well as social, economic, and environmental entities that work to influence the leadership on the one hand and the general public on the other.[492] Referring to the model presented at the start of this Part, public awareness is the juncture for combining economic and scientific data to call the necessary attention to pressing needs that must be addressed for the public's interest and welfare.

In order for change to occur, there first has to be awareness of the situation giving rise to the need for change. Once that is established, there has to be an understanding of why the situation requires change, the consequences of that situation staying as is, and the benefits of making the effort to move to a "desired state." Given that, the preferred course of action has to be developed with input from all who have insight and from all who stand to be affected by the change. This starts with building public awareness, exchanging information, and developing the means by which to come to a solution. Public awareness is the essential component to moving into action. Without awareness there can be no understanding of potential outcomes and consequences.[493] Without that understanding there can be no motivation to galvanize action. The consequences of actions, often unintended, are not clear without access to information resulting from scientific observation and economic evaluation. So much of what affects the quality of

491 Seismological Socy. of Am., *supra* n. 489 (Omori's law states that aftershocks diminish in some predictable manner after the main earthquake. This article proposes that, with regard to taking preemptive measures to mitigate damage from earthquakes, there is an Omori's Law of Public Awareness; as with aftershocks, public interest in finding solutions peaks then wanes in a predictable amount of time after an earthquake disaster strikes. This article notes that "political will . . . wanes with decreasing public interest."); *see also* UN-Habitat, *supra* n. 490 (calling for "rapid mobilization of political will," which in part is assisted by public awareness campaigns).

492 Annette Scheunpflug & Ida McDonnell, *Policy Brief No. 35: Building Public Awareness of Development: Communicators, Educators and Evaluation* 6 (OECD 2008) (available at http://www.oecd.org/dataoecd/39/38/41043735.pdf (accessed Nov. 21, 2010)) (report recognizing the importance of public awareness in developing the political will to fulfill a development agenda: "They want to increase the effectiveness of public awareness and learning activities about development because much-needed political will for an ambitious agenda for reform requires informed public support.").

493 John Burman, *Public Awareness Combats Poverty*, http://www.thespec.com/news/article/6667—public-awareness-combats-poverty (Dec. 8, 2005) (accessed Nov. 21, 2010) (making a point by analogy, addressing mitigating poverty by stating that in order for there to be a change for the better in the welfare system and the makeup of society people have to understand why they should care. Further it notes that "[w]ithout public awareness, there is no political will.").

life for us plays out in a manner that is not necessarily obvious in our everyday existence.

With sharks, this certainly is the case. For many of us, they exist in a world almost as remote as another planet. They get little sympathy on a mass scale because they are so feared. What endangers them, and the understanding that it may therefore endanger us, is understood by relatively few.

Widespread public awareness is critical to solving the shark crisis because widespread public demand has created the crisis. The more people that know about the danger of shark extinction, and the more that people know about what is occurring, its impacts, and what can be done, the more likely it is that constructive measures can and will be taken by the governing bodies in place to enact laws and regulations for sound management of this important resource.

VII. CONCLUSION

The global shark crisis is a dire situation. The negative implications affect not only shark species, but also the human species. Despite growing international attention and a network of national and international laws and agreements, the situation worsens.

Yet, we have the ability to craft solutions. And the solutions are on our doorstep. We do not lack the knowledge, ideas, or specifics necessary to develop and implement solutions. The U.S., thanks to the efforts of Congresswoman Bordallo, sponsor of the Shark Conservation Act of 2009, is poised to lead the way to resolving this crisis. Many tools are within our grasp to put into effect: effective national laws; international cooperation based on binding agreements for conservation measures and sustainable harvesting; and commitment to enforcement and to the development of livelihood alternatives to combat the forces of poverty and greed sustaining the current "race to the bottom." Political will is the key, and public awareness is the motivator.

This Article hopefully serves to stir ambition in others dedicated to the concept that we can affect a world in balance, where conscientious attention to the various and seemingly competing needs of economy and ecology can be addressed, not at the detriment of one or other but to the benefit of both.