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Note

International Management of a High Seas Fishery: Political and Property-Rights Solutions and the Atlantic Bluefin

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INTRODUCTION

The Tsukiji market, just north of Tokyo Bay, is the largest fish market in the world.¹ Each day, over 40,000 licensed buyers and sellers crowd the fifty-acre market to trade over 400 species of fish, shellfish, roe, and every other type of seafood.² From the tiniest shrimp to the largest bluefin tuna, nearly every ocean species can be found at Tsukiji. But it is this last item, the bluefin, one of the largest and most prized fish at the market, that has created not just an international controversy, but a threat to the relations of some of the world's most powerful nations. For the tuna — particularly the large, migratory Atlantic bluefin — is, despite its large size, a microcosm of sorts for the general environmental and species degradation exacerbated by global trade, commerce, and industry.³ And the management (or lack thereof) of

1. See Kathryn Tolbert, *A Seafood Drama, From Start to Fin*, WASH. POST, Sept. 6, 2009, at F1.

2. See *id.* For a more detailed discussion of the Tsukiji market, see generally THEODORE C. BESTOR, *TSUKIJI: THE FISH MARKET AT THE CENTER OF THE WORLD* (2004).

3. For a discussion of why tuna in particular represents many of the problems of commons resource management, see R. Quentin Grafton et al., *Regional Fisheries Management Organizations*, in CONSERVATION AND MANAGEMENT OF TRANSNATIONAL TUNA FISHERIES 155 (Robin Allen et al. eds., 2010) [hereinafter CONSERVATION AND MANAGEMENT] (“Highly migratory fish stocks, such as tuna, are perhaps the last great frontier in terms of capture fisheries in which neither the countries nor the fishers involved have sufficient incentives to invest in their conservation and management. These fish roam between the exclusive economic zones (EEZs) of coastal states and the high seas, and are thus vulnerable to overexploitation in the absence of effective cooperation.”).

bluefin stocks represents much of what is wrong with current environmental treaty systems and international protection mechanisms.

The Atlantic bluefin presents a classic commons dilemma: one valuable resource, few real property rights. Moreover, the bluefin's highly migratory nature takes it through multiple jurisdictions and the high seas, allowing any fisherman with modern fishing equipment and a spotter plane to take what he can from the now diminishing stocks. Such easy access has proved devastating: Stocks in the eastern and western Atlantic have crashed to below twenty percent of pre-industrial biomass, yet nations still permit their fishermen to fish well above scientists' recommended catch limits. Worse yet, illegal, unregulated, and unreported (IUU) fishing has, by some assessments, doubled the annual catch that regulators have deemed acceptable. Though the international bodies that are supposed to regulate Atlantic bluefin fishing have lowered quotas in recent years, this has done little to stem the stock's decline. As of 2009, scientists wonder whether even a complete ban will allow the Atlantic bluefin to recover.⁴ Yet fishing persists.

The global failure to enact any meaningful treaties protecting the Atlantic bluefin reveals as much about the current state of international species protection as it does about the tuna's fate. The current treaty regimes that protect the bluefin are, as this Note will demonstrate, both inefficient and improperly designed, and they afford too much voting power to those nations with little stake in the bluefin's long-term survival. Moreover, the treaty organizations do not represent the will of those nations that actually fish the bluefin in high quantities, and the organizations' decisionmaking thus fails to internalize the political costs of overfishing.

Interestingly, the bluefin market operates in almost the same way: Those buying and consuming the Atlantic bluefin — particularly Japanese consumers, who comprise eighty percent of the total consumer market⁵ — have failed to internalize the *economic* costs of overfishing, and instead push these externalities onto the bluefin stocks and the long-term fishing interests of all bluefin-fishing nations. This problem is by no means unique to the Atlantic bluefin. Hundreds of other commons species have been unnecessarily hunted to extinction.⁶ Recently,

4. Anjali Nayar, *Bad News for Tuna is Bad News for CITES*, NATURE NEWS, Mar. 23, 2010, <http://tinyurl.com/yawcsrd> (“[ICCAT’s] scientific committee had recommended a quota of 8,000 tonnes, to give bluefin stocks a 50% chance of recovering by 2023.”).

5. See Juliet Eilperin, *Global Conference Rejects Bans on Trade in Bluefin Tuna, Polar Bear*, WASH. POST, Mar. 19, 2010, at A03.

6. The problem is particularly acute among fisheries because of the difficulty in demarcating and policing boundaries and the problem of the high seas, in which every nation is free to fish. Notable near-extinctions include the right whale and the Atlantic cod. See, e.g., SYLVIA A. EARLE & LINDA K. GLOVER, OCEAN: AN ILLUSTRATED ATLAS 130 (2008). A non-fisheries example in

however, international agreements such as the Convention on International Trade in Endangered Species (CITES) and a number of other regional management treaties have attempted to force international cooperation to overcome this commons tragedy. Unfortunately, for reasons that this Note will discuss, such measures have not met great success.

The Atlantic bluefin provides an important test case for a number of reasons. First, it has been well studied, and there exists substantial scientific literature on its biomass and the detrimental effects of overfishing. Second, the International Convention for the Conservation of Atlantic Tunas (ICCAT) — the forty-eight-nation treaty organization responsible for overseeing the management of the fish — provides, in the case of the bluefin, a perfect example of international coordination gone wrong and reveals an inherent problem of environmental treaty organizations that attempt to do too much without realizing their own structural and political limitations. Third, unlike other commons situations, the nature of the bluefin market may actually lend itself to a market-based, property-rights solution. This Note will discuss each of these issues in turn.

Part I provides a brief introduction to the Atlantic bluefin, its market, and the reasons why nations have been unable to adequately protect this commons species. Part II then assesses attempts at international management and looks at the political and structural reasons why these institutions are failing in their mission. Part III turns to fisheries management theory and offers several property-rights regimes that may help mitigate the problem of Atlantic bluefin overfishing. Finally, Part IV returns to political and implementation problems of property management regimes, looks at whether an international property-rights regime can be instituted for the Atlantic bluefin, and then argues that, because of the unique features of the bluefin market, there does exist the possibility for such an implementation.

I. THE BLUEFIN

The Atlantic bluefin, *Thunnus thynnus*, is a remarkable fish. It is almost entirely muscle, and its dark flesh is built for long-distance swimming. It can grow upwards of fifteen feet in length, weigh as much as 1400 pounds, and swim at speeds of up to fifty-five miles per hour.⁷

the Americas is the passenger pigeon. See generally A.W. SCHORGER, THE PASSENGER PIGEON: ITS NATURAL HISTORY AND EXTINCTION (1955).

7. See EUGENE H. BUCK, CONG. RESEARCH SERV., 95-367 ENR, ATLANTIC BLUEFIN TUNA: INTERNATIONAL MANAGEMENT OF A SHARED RESOURCE (2005), available at <http://tinyurl.com/2cgkfs8>.

It possesses advanced navigational tools that allow it to travel great distances,⁸ and it has developed schooling abilities and adopts slipstream formations similar to those of Canadian geese.⁹ It can travel both close to the surface to take advantage of surface currents, or below or alongside other schools of fish (or even sharks) for both protection and access to food.¹⁰ It is also one of the few species of warm-blooded fish, which allows it to easily regulate body temperature and, more importantly, permits viability in almost any sea climate.¹¹ Unfortunately, this mobility and adaptability has proven, in its struggle with modern man, to be the bluefin's greatest weakness.

The bluefin's various strengths have enabled it to thrive for millennia at the top of the Atlantic food chain. Yet in the past decades, these strengths have created problems for the bluefin, for two reasons: First, its proclivity to travel near the surface and close to other schools of fish has provided easy access to airplane- and sonar-equipped fishermen. Second, the bluefin's cross-border and transoceanic migration has for years allowed it to evade domestic regulatory nets. This Note focuses on this second issue. Because the Atlantic bluefin's migration takes it through the high seas as well as the exclusive economic zones (EEZs) of multiple nations, and because international law in general permits freedom of fishing in international waters, individual states cannot restrict bluefin fishing on their own — resulting in a classic tragedy of the commons scenario.

A. *Bluefin Fishing: More Profitable than Illegal Drugs*

In early 2009, a single bluefin, weighing just under 300 pounds, sold at auction for over \$100,000.¹² Other, larger bluefin, flown in from Canada, the Mediterranean, and Cape Cod, have in the past fetched even more.¹³ These prices drive a global marketplace that extends from the fishermen — purse seiners in the Bay of Biscay, tuna ranchers in Libya and Tunisia, spear fishermen in Massachusetts, and longliners in the

8. DOUGLASS WHYNOTT, *GIANT BLUEFIN* 23–25 (1996) (noting that bluefin are responsive to temperature, light, and ocean currents).

9. *Id.* at 26.

10. *Id.* at 26–27.

11. See Paul McFarlane, *Warm Blooded Fish*, MONTHLY BULLETIN OF THE HAMILTON AND DISTRICT AQUARIUM SOCIETY, Jan. 1999, <http://tinyurl.com/2alfkna> (“A fish with the ability to raise and maintain body temperature has several definite advantages over its less fortunate brethren. Such a fish need not be selective in its range because of different water temperatures.”).

12. See Robert Frank, *The \$100,000 Tuna Fish*, *The Wealth Report*, WALL ST. J. (Jan. 5, 2009, 5:15 PM), <http://tinyurl.com/2dj5wm8>.

13. See, e.g., Leo Lewis, *Giant Bluefin Tuna Sells for £111,000 in Japan*, TIMES (London), Jan. 6, 2010, <http://tinyurl.com/y8tkg97>.

Gulf of Mexico¹⁴ — to the buyers that wait on docks, Japan Airlines flights that transport the frozen fish alongside passengers' luggage,¹⁵ the famous Tsukiji tuna auctions, and the high-end sushi bars spread across Japan and, more recently, New York, Paris, and Moscow. That a single species can drive such a marketplace is in itself incredible. That this market is pushing the fish to extinction, on the other hand, comes as little surprise.

Bluefin tuna was not always so prized. In the early 1900s, American fishermen referred to it as “‘horse mackerel,’ and its red, strong-flavored flesh was considered suitable fare only for dogs and cats.”¹⁶ But as the demand for canned tuna fish increased in the postwar years, the major industrialized seagoing nations — notably Japan and the United States — began to fish it more heavily. By the end of the 1950s, both nations had rediscovered the abundant Atlantic schools, and, with the advent of freezing technology, Japanese, American, and European fishing fleets began to flock to the international Atlantic waters.¹⁷

The most important development in the bluefin trade occurred in the 1970s, with the opening of the Japanese sashimi market. The high price for bluefin sashimi in Japanese sushi restaurants, combined with further advances in transportation and the development of quick-freezing, transformed the bluefin from a commodity product into a luxury good, and “by the early 1970s, with the development of air freight, fresh giant Atlantic bluefin could reach Japan’s lucrative sushi market overnight.”¹⁸ Over the course of a few years, the price per pound skyrocketed over one thousand percent, and, by the mid-1980s, fishermen could expect to receive nearly eight dollars per pound for bluefin — unquestionably the

14. Purse seiners are large boats that use smaller speedboats to drag opposing ends of net around an entire school of fish. Once the school is enclosed, the net is sealed at the bottom, and the “purse” is drawn in. Purse seining has been held to be “the most important and most effective [method] to catch aggregating species near the surface.” *Purse Seiners*, FOOD & AGRIC. ORG. OF THE UNITED NATIONS [FAO], FISHERIES & AQUACULTURE DEP’T, <http://tinyurl.com/2a6nmlg> (last visited Dec. 23, 2010). In longline fishing, boats release a single long line with smaller, baited hooks attached to peripheral lines at various intervals. The main lines can extend for miles.

15. “Tuna emerges . . . from practically every plane that arrives at [Tokyo’s] Narita [Airport]. The coffins carrying the fish glide off Air France freighters coming from Paris, Singapore Airlines flights from Adelaide, China Airlines planes originating in Vietnam. But no airline has been so deeply committed to the art of transporting high-quality seafood as JAL, which invented the modern tuna economy as a means of filling the holds of its jets returning from North America and now serves as de-facto flag carrier.” Sasha Issenberg, *The Sushi Economy*, THE AMERICAN, July/Aug. 2007, at 49, 51.

16. Richard Ellis, *The Bluefin Tuna in Peril*, SCI. AM., Mar. 2008, at 72; see also WHYNOTT, *supra* note 8, at 7 (noting that well into the twentieth century, Cape Cod fisherman saw little profit in bluefin and were lucky to receive “five cents a pound” for it).

17. See FAO, Fisheries & Aquaculture Dep’t, FAO Fisheries Technical Paper 467, *Historical Trends of Tuna Catches in the World* § 1.1.2 (2004), available at <http://tinyurl.com/26n4nn2> [hereinafter *Historical Trends*].

18. BUCK, *supra* note 7.

highest price (per pound) for any food animal on earth.¹⁹ As a Congressional Research Service report noted, the market price for bluefin began to “rival that of some illegal drugs.”²⁰

The same congressional report made an equally important observation: The high price of bluefin, combined with its now-predictable migratory patterns and behavior (such as traveling just below schools of yellowfin), allowed fishermen to “locate and profit from catching bluefin tuna at very low population densities.”²¹ Even today, off the coast of Cape Cod, fishermen in two-man boats, guided by small spotter planes, can make a living tracking and harpooning the giant bluefin one at a time.²²

While the most prized and expensive bluefin are caught via harpoon, the most significant damage to bluefin stocks is done by the purse seiners, which target entire schools.²³ As stocks have dwindled, however, some of the largest fishing fleets — in France, Italy, Malta, Spain, Turkey, and the North African nations — have begun targeting even less mature stocks, capturing them, and then towing the fish to large “farms” in the Mediterranean to fatten them before slaughter.²⁴ This relatively new method of “farming” — “ranching” may be a better term — not only increases yields, but importantly disguises catch amounts, as those fish caught and transported to farms are not necessarily counted by state regulators.²⁵ The farming operations also upend scientific attempts to monitor fish stocks. As one Greenpeace report notes:

The “unknowns” introduced by tuna ranching activities include: the size composition of the tuna that is introduced in the catches; where and when have they been caught; how many fish die during the transport and transfer operations; or how much fish

19. See Theodore C. Bestor, *Supply-Side Sushi: Commodity, Market, and the Global City*, 103 AM. ANTHROPOLOGIST 71, 78 (2001) (“The Atlantic bluefin tuna fishery has been almost exclusively focused on Japanese consumption, and indeed, until the 1970s when Japanese markets were accessible to North American producers, there was no commercial fishery for Atlantic bluefin in North American waters; bluefin were trophy fish or by-catches[.]”).

20. BUCK, *supra* note 7.

21. *Id.*

22. For a video of spotter-plane harpoon fishing in action, see John LoGioco, *Aerial Video: Big Bluefin Tuna Schooling at the Surface* (Aug. 17, 2009, 2:49 PM), <http://tinyurl.com/25vdgmc>.

23. For a discussion of purse seiners, see *supra* note 14.

24. See *Tuna ‘Ranches’ Feed Appetite for Bluefin*, MSNBC.COM, <http://tinyurl.com/23bqmt8> (last updated Apr. 2, 2007) (discussing bluefin ranching operations).

25. While attempts have been made to breed bluefin and raise them entirely in captivity, such science remains in its infancy. See Brandon Keim, *Tuna Ranch Hormone Cocktail Could Save Bluefin*, WIRED (July 22, 2009, 3:59 PM), <http://tinyurl.com/14vny9>; see also Kyung Lah, *‘Ranching’ Tuna the Eco-Friendly Way*, CNN (Feb. 8, 2010), <http://tinyurl.com/23os2bv> (discussing improving Japanese attempts to hatch and raise bluefin).

grow during the farming process. These essentially represent a loophole in the management of the fishery — a loophole that is being exploited by the industry.²⁶

And this still assumes that fishermen are accurately reporting their catches. One 2007 study noted that the number of reported purse seine tonnage caught in the Mediterranean was actually *less* than the reported imports by Mediterranean bluefin farms²⁷ — a physical impossibility, and evidence that numbers are being manipulated.

B. *The Impact of Overfishing*

The combined growth of the Japanese sashimi market and the widespread use of unregulated purse seiners in the 1970s had an immediate and long-lasting effect: Within a decade, the Atlantic bluefin population declined by nearly a third in terms of biomass, while the western population — ICCAT divides the Atlantic bluefin tuna stock into two populations, eastern and western, divided by the 45° west longitude line; the much larger and more heavily fished eastern population winters in Mediterranean waters, while the western group migrates south, towards the Gulf of Mexico — dropped by nearly eighty percent.²⁸

This eastern–western distinction is important only because ICCAT makes different quota recommendations for the two stocks, though recent evidence indicates that there is significant intermixing between the groups.²⁹ What remains important, however, is the very real

26. GREENPEACE, WHERE HAVE ALL THE TUNA GONE? 19 (2006), available at <http://tinyurl.com/2fzbyseq>.

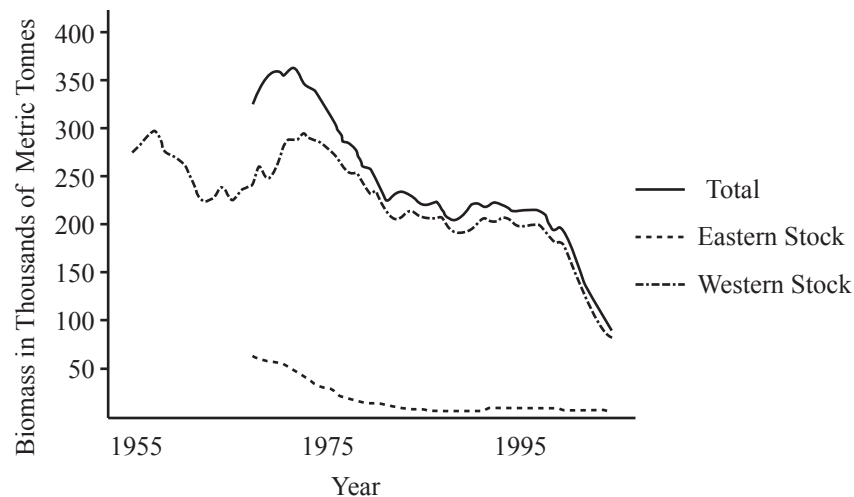
27. Vincenzo de Stefano & Peter G.M. Van Der Heijden, *Bluefin Tuna Fishing and Ranching: A Difficult Management Problem*, 2 NEW MEDIT 59, 63 (2007), available at <http://tinyurl.com/2udoe6a> (“While exports of farmed tuna to Japan — and therefore inputs for tuna farming — grow, declared purse seine catches decrease. There is only one way to explain that: unreported — and overall illegal — catches are increasing.”).

28. See *Stock Status of Atlantic Bluefin*, TAG-A-GIANT FOUNDATION, <http://tinyurl.com/38lvjf2> (last visited Mar. 1, 2010). For a complete and more detailed report, presented by ICCAT at the 2008 ICCAT summit, see Int’l Comm’n for the Conservation of Atl. Tunas [ICCAT], *Report of the 2008 Atlantic Bluefin Tuna Stock Assessment Session* (Sept. 29–Oct. 3, 2008), <http://tinyurl.com/27stnrf> [hereinafter *ICCAT Bluefin Report*]. For an in-depth discussion of bluefin migratory patterns and the distinctions between the two stocks, see Barbara A. Block et al., *Electronic Tagging and Population Structure of Atlantic Bluefin Tuna*, NATURE, Apr. 28, 2005, at 1121.

29. See *International Fishery Management of Atlantic Bluefin Tuna*, TAG-A-GIANT FOUNDATION, <http://tinyurl.com/2vtm4qh> (last visited Mar. 1 2010) (“The current management structure assumes limited mixing of the two populations over the 45 degree stock boundary line. Tagging data, [however, has] provided evidence for substantially more mixing of the two populations than previously thought.”); see also *Historical Trends*, *supra* note 17, § 2.4.1 (“Tagging evidence indicates that movement of bluefin across the current east/west management boundary in the Atlantic does occur, and that it can be extensive (including trans-Atlantic) and

evidence that bluefin tuna stocks are down across the board. And the global community is not oblivious to this problem. But unlike other international environmental concerns, many interested states — including those with large bluefin fleets — not only accept the science, but in fact also support radical steps to address the significant decline in bluefin population.³⁰ As the next sections demonstrate, acceptance of the science is not, in the case of the bluefin, what really matters in preventing the bluefin's extinction.

FIGURE 1: ATLANTIC BLUEFIN SPRAWLING BIOMASS 1955–2007³¹



II. THE PROBLEM: FAILURES OF INTERNATIONAL MANAGEMENT

The history of bluefin fishing is by no means unusual, and the regulatory approaches taken by the fishing nations have been similar to regulations of other environmentally destructive human activities. Like the proposed regulation of pollution and carbon emissions, the resulting harm generally falls on poorer developing nations that are just now beginning to exploit resources that may no longer be as profitable for developed states.³² An Organization for Economic Cooperation and

complex.”).

30. In 2009, the nations of the European Union agreed to support the CITES ban and issued the following statement: “From a scientific and technical point of view, the criteria for the listing of Atlantic bluefin tuna [as an endangered species] appear to be met There is no doubt about the link between international trade and overexploitation of the species.” Stanley Pignal, *Brussels Moves to Protect Bluefin Tuna*, FIN. TIMES, Sep. 9, 2009, <http://tinyurl.com/399p4un> (quoting passages from a draft European Commission report).

31. The data in this figure are derived from ICCAT *Bluefin Report*, *supra* note 29, at 154–55, 189–90.

32. See, e.g., Rolf H. Weber & Aline Darbellay, *Regulation and Financial Intermediation in*

Development (OECD) report nicely summarizes this scenario as it applies to the Atlantic bluefin:

Tuna fishing was pioneered by entrepreneurs in capital-rich countries such as Japan, the United States, Spain and France, due to the highly capital-intensive nature of the activity. However, poor management and the open access nature of the fishery lead to overcapitalization. Over time, such barriers to entry were less significant, allowing fleet development in developing countries where capital is less abundant but labour and other operating costs are cheaper. New entrants intensified competition on diminishing stocks of fish, often to the detriment of historically dominant fleets. These economic losses eventually motivated the early fishing states to respond politically through [Regional Fisheries Management Organizations] to protect their interests. As a result, management measures to protect and conserve the stocks exploited were introduced and promoted by developed countries.³³

As the number of market entrants increased, regional approaches to fisheries management became less effective. Thus, there was a need for a joint effort by all tuna-fishing nations, which resulted in the creation of the treaty-based International Commission for the Conservation of Atlantic Tunas, or ICCAT. Since its founding, this treaty-based organization has assumed near sole responsibility for studying and managing Atlantic bluefin stocks.³⁴

Fisheries science generally manages stocks by setting maximum sustainable yields (MSYs), “defined as the largest average fish catch that a population can support over time without declining.”³⁵ Overfishing thus occurs when the annual catch exceeds the MSY. Quotas, or, in industry parlance, total available catch (TAC), should be no greater than the MSY. However, as is frequently the case in high seas fisheries, TACs and MSYs rarely correspond (and this does not even include IUU fishing). As ICCAT scientists admitted in 2009, the bluefin TAC for the previous years was “more than three times the level

the Kyoto Protocol's Clean Development Mechanism, 22 GEO. INT'L ENVTL. L. REV. 271, 275 (2010) (“Developing countries thus far have focused on building and strengthening their economies, and climate change commitments could preclude them from rapid economic growth.”); Eric A. Posner & Cass R. Sunstein, *Should Greenhouse Gas Permits Be Allocated on a Per Capita Basis?*, 97 CALIF. L. REV. 51, 53–54 (2009) (“If the status quo is the baseline for allocating emissions rights, poor nations are likely to have great difficulty in achieving the levels of development already attained by wealthy nations.”).

33. ORG. FOR ECON. CO-OPERATION & DEV. [OECD], STRENGTHENING REGIONAL FISHERIES MANAGEMENT ORGANISATIONS 53 (2009).

34. See *infra* note 40 and accompanying text.

35. *Stock Status of Atlantic Bluefin*, *supra* note 28.

which would permit the stock to stabilize at the MSY level,” and recent ICCAT proposals, while “a step in the right direction, . . . [are] unlikely to fully fulfill the objective of the plan to rebuild the stock to the MSY level by 2023.”³⁶ Yet, given ICCAT’s history of mismanagement, even these findings resulted in little more than a collective shrug.

A. *Regional Management: ICCAT*

The management of Atlantic bluefin stocks is not a new problem. Nor have nations only recently begun to realize the extent of the problem. Even before the opening of the Japanese sashimi market, fishermen realized that the combination of longline and purse-seine fishing was having a real effect on stock sustainability.³⁷ Tuna-fishing nations recognized declines in the mid-1960s, and, cognizant of the finite resource, created ICCAT, an international consortium of forty-eight countries (though roughly half became members in the past decade).³⁸ Though there are four other Regional Fisheries Management Organizations (RFMOs) regulating the fishing of tuna,³⁹ ICCAT is, per its charter, “the only fisheries organization that can undertake the range of work required for the study and management of tunas and tuna-like fishes in the Atlantic.”⁴⁰ Importantly, ICCAT was not developed as a conservation organization; rather, its purpose is to ensure that party states can harvest the maximum amount of tuna without permanently damaging the base stocks.⁴¹ And ICCAT makes no effort to hide this purpose. Its charter states:

The Governments . . . considering their mutual interest in the populations of tuna and tuna-like fishes found in the Atlantic

36. ICCAT, *Report of the 2008 Atlantic Bluefin Tuna Stock Assessment Session, Executive Summary*, at 75 (Sept. 28–Oct. 3, 2008) available at <http://tinyurl.com/2g559ez> (emphasis added).

37. See RICHARD ELLIS, *TUNA: A LOVE STORY* 121 (2008).

38. Member states include, in the order in which they joined, the United States, Japan, South Africa, Ghana, Canada, France, Brazil, Morocco, Korea, Ivory Coast, Angola, Russia, Gabon, Cape Verde, Uruguay, São Tomé and Príncipe, Venezuela, Equatorial Guinea, Guinea, United Kingdom, Libya, China, Croatia, European Union, Tunisia, Panama, Trinidad & Tobago, Namibia, Barbados, Honduras, Algeria, Mexico, Vanuatu, Iceland, Turkey, Philippines, Norway, Nicaragua, Guatemala, Senegal, Belize, Syria, St. Vincent & the Grenadines, Nigeria, Egypt, Albania, Sierra Leone, and Mauritania. See *Contracting Parties*, ICCAT, <http://tinyurl.com/2785huw> (last visited Mar. 22, 2010). Note that the European Union nations, particularly France and Spain, possess the largest Atlantic bluefin fleets.

39. The United Nations has generally recommended regional approaches to fisheries management. The other four RFMOs are the Commission for the Conservation of Southern Bluefin Tuna, Inter-American Tropical Tuna Commission, Indian Ocean Tuna Commission, and the Western and Central Pacific Fisheries Commission.

40. *Introduction*, ICCAT, <http://tinyurl.com/273lx5v> (last visited Mar 22, 2010).

41. International Convention for the Conservation of Atlantic Tunas pmbl., *opened for signature* May 14, 1966, 673 U.N.T.S. 63, 20 U.S.T. 2887.

Ocean, and desiring to co-operate in maintaining the populations of these fishes at levels which will permit the maximum sustainable catch for food and other purposes, resolve to conclude a Convention for the conservation of the resources of tuna and tuna-like fishes of the Atlantic Ocean⁴²

ICCAT itself has no enforcement powers. Rather, it produces recommendations that it sends to member states, which must then agree to the Commission's proposals.⁴³ Thus, its primary function is to provide a forum for aggregating various studies of tuna stocks, and then formulate rulings by which member states will hopefully agree to abide.⁴⁴ As one critic thus noted at the time ICCAT was set to make its first bluefin recommendations, "[one] outstanding weakness of ICCAT which cannot go unnoted is the total absence of specific enforcement provisions for the ICCAT regulations."⁴⁵ Remarkably, per the ICCAT charter, member states need not even agree on fishing restrictions, but rather only "agree to agree on enforcement measures."⁴⁶

ICCAT made its first finding on bluefin sustainability in 1974, and duly proposed "(a) an Atlantic-wide minimum size limit of 6.4 kilograms (about 14 pounds) with a 15 percent tolerance [this allows 15 percent of a total catch to fall outside this limit], and (b) [that] all fishing nations cap entry into the fishery and limit fishing mortality."⁴⁷ The dual purpose of this regulation was to allow adolescent bluefin to develop to spawning age and to limit the size of nations' fishing fleets. However, as was painfully obvious even then, the ruling, which was recognized and accepted by ICCAT member states in 1975, did little to reduce bluefin fishing.⁴⁸ By the early 1980s, the bluefin population in

42. *Id.*

43. See NAT'L RESEARCH COUNCIL ET AL., AN ASSESSMENT OF ATLANTIC BLUEFIN TUNA 6 (1994) ("The commission is responsible for formulating regulatory proposals, which are approved by ICCAT and submitted to member governments for approval. If there are no objections from any concerned contracting government within approximately six months, each party to the convention is then responsible for implementing and enforcing the regulations recommended by ICCAT.").

44. For example, the United States passed the Atlantic Tunas Convention Act (ATCA) of 1975, 16 U.S.C. § 971 (2006), which gave effect to the convention. The ATCA authorizes the Secretary of Commerce to "administer and enforce all of the provisions of the Convention, . . . [and] utilize . . . the Coast Guard . . . insofar as such utilization involves enforcement at sea." *Id.* § 971d(a).

45. Michael J. Jacobs, *United States Participation in International Fisheries Agreements*, 6 J. MAR. L. & COM. 471, 495 (1975).

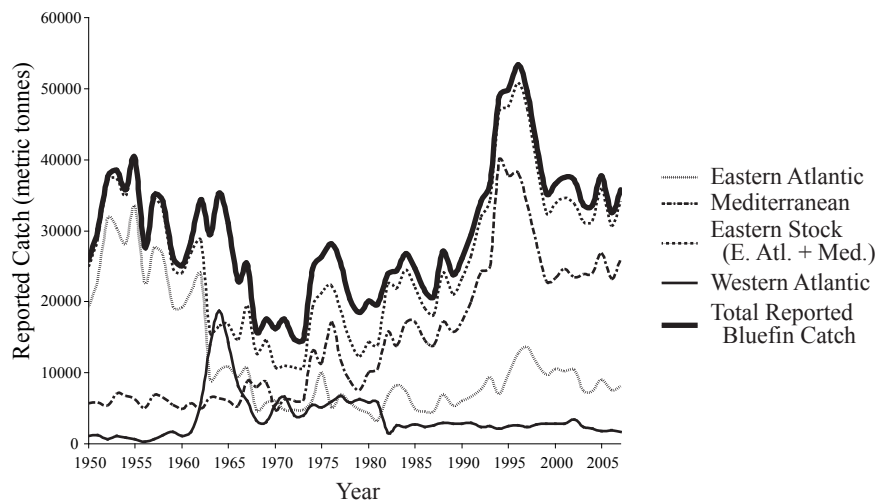
46. *Id.* at 496.

47. BUCK, *supra* note 7, tbl.1.

48. Trond Bjørndal & Ana Brasão, *The East Atlantic Bluefin Tuna Fisheries: Stock Collapse or Recovery?*, 21 MAR. RESOURCES ECON. 193, 197 (2006) ("In spite of the recommendations being officially implemented in 1975, they had no or little impact, as they were not respected.").

the western Atlantic had crashed,⁴⁹ yet fishing continued to *increase*. As Figures 1 and 2 demonstrate, the 1974 ICCAT proposals had almost no long-term effect on increasing stock sizes, and overall bluefin fishing increased dramatically in the years following the recommendations (although the brief downtick in fishing yields in the late 1970s may have been at least somewhat related to the proposals).

FIGURE 2. ATLANTIC BLUEFIN CATCH⁵⁰



In response, ICCAT made its second set of bluefin proposals, this time dividing the species into the aforementioned eastern and western stocks. More importantly, the commission recommended an immediate cessation of bluefin fishing in the western Atlantic, though the recommendation was nonbinding and consisted merely of an agreement to “take measures to prohibit the capture of bluefin tuna for a period of two years in the western Atlantic”⁵¹ — another “agree to agree” type of solution. Moreover, despite the scientific evidence indicating the need for a ban on such fishing, the commission still could not agree on a complete ban, and thus allowed the catch of 1160 metric tonnes for “scientific purposes.” This quota was then raised to 2660 metric tonnes

49. See *supra* Figure 1.

50. The data are from ICCAT, STATISTICAL BULLETIN VOL. 38, at 38 tbl.16 (2009), available at <http://tinyurl.com/2elt5ww>. For additional analysis, see *Historical Trends*, *supra* note 17, § 2.4.1 (2004), available at <http://tinyurl.com/26n4nn2>.

51. ICCAT, REPORT FOR BIENNIAL PERIOD, 1980–81, PART II (1981) 87 (1982), available at <http://tinyurl.com/258fpj9>.

the following year, despite a lack of any evidence of improvements in biomass.⁵²

And still the devastation continued. “By 1991 commission scientists estimated spawning biomass at 22% of the 1975 reference level,”⁵³ around the time ICCAT issued its first bluefin recommendations. A separate ICCAT report indicated that the western Atlantic population had been reduced to 27,000 adult bluefin.⁵⁴ Despite the subsequent threat (and then withdrawal) of a CITES listing in 1991, ICCAT did little to cut back on fishing. Though quotas were introduced, “ICCAT scientists later regarded the quota reduction as being sufficient only to halt further stock declines, but not sufficient to rebuild the stock.”⁵⁵

Over the next decade, ICCAT made some efforts to reduce fishing, including limiting for the first time catches in the eastern Atlantic (though it simultaneously increased western quotas, albeit only slightly). Purse seining was prohibited in certain areas during peak spawning times and quotas were slowly lowered, though until 2008 the quotas for the eastern stock remained well above 20,000 metric tonnes per year,⁵⁶ or close to twenty percent of the spawning-age populations. But even then, the quotas existed only on paper. Numerous reports, including a 2009 Commerce Department report to Congress, revealed the extent of overfishing and underreporting⁵⁷ — yet ICCAT quotas still remain well above those recommended by scientists.⁵⁸

B. *Monitoring and Enforcement*

Offshore fishing is by its nature nearly impossible to monitor. First, and most importantly, the ocean is, to put it simply, huge. Short of

52. See ELLIS, *supra* note 37, at 124–25.

53. Carl Safina & Dane H. Klinger, *Collapse of Bluefin Tuna in the Western Atlantic*, 22 CONSERVATION & POL’Y 243, 243 (2008).

54. WHYNOTT, *supra* note 8, at 154. To provide reference, ICCAT estimated the 1991 western stock size to be 7505 metric tonnes, though this includes both adults and juveniles. See ICCAT *Bluefin Report*, *supra* note 28.

55. BUCK, *supra* note 7.

56. *International Fishery Management of Atlantic Bluefin Tuna*, TAG-A-GIANT FOUNDATION, <http://tinyurl.com/35jn5qz> (last visited Dec. 29, 2010).

57. See DEP’T OF COMMERCE, REPORT TO CONGRESS PURSUANT TO SECTION 403(A) OF THE MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT REAUTHORIZATION ACT OF 2006, at 89–97 (2009) (finding that five major tuna-fishing countries, including France, the world’s largest, had exported more bluefin than their quotas permitted them to harvest); see also GREENPEACE, INCONSISTENCIES BETWEEN CATCH AND TRADE DATA FOR SPANISH RECORDED EXPORTS OF MEDITERRANEAN BLUEFIN TUNA IN 2006 (2007) (finding that Spain had exceeded its quota by over 2000 tons, or nearly 35 percent).

58. See, e.g., Safina & Klinger, *supra* note 53, at 244 (“In sum, in the 1980s through 1990s the commissioners implemented much larger catch quotas than the scientific committee recommended. When the population continued declining, they blamed environmental change and implemented several quota increases.”).

placing a regulator on every commercial fishing vessel, there is simply no way for countries to adequately monitor what each boat takes from the water. Ensuring that each boat lands its prescribed quota is similarly difficult, requiring regulators and monitors at every port — and this still does not prevent fishermen from throwing overboard bycatch⁵⁹ or normal catch in excess of their allotted amount.

Further, as mentioned, ICCAT does not have its own enforcement apparatus, but rather must rely on member states to monitor their own fishermen.⁶⁰ Yet regulatory resources are finite even in developed countries. For example, the more affluent Australia relies on a combination of electronic monitoring (generally via GPS) and fisherman reporting, whereby trawlers must radio in their catch so that regulators can (if they choose) meet them at the dock and ensure quota compliance.⁶¹ Similar methods are practiced in the United States and other developed countries, though these frequently still force regulators to rely on fishermen's reports, and fishermen often have little incentive to ensure accurate data keeping. As the World Bank noted, "[m]onitoring and enforcing limits on fishing can be problematic, because fishers understandably are reluctant to provide information that can affect their competitiveness. Some fishermen report data to national authorities under confidentiality agreements that prohibit release to international authorities."⁶² Yet such reporting is the only viable deep-sea monitoring mechanism; there simply are not sufficient resources to monitor ships out on the open seas. The U.S. Coast Guard admits as much, and explains that it cannot even prevent the incursion into U.S. territory of foreign fishermen, and must instead rely on "intelligence-based [reports] or . . . opportunistic enforcement while patrolling on other missions."⁶³

Put simply, compliance requires active participation by fishermen, which by its very nature is both costly and anathema to greater profitability in the industry. As one commentator aptly explains:

59. "Bycatch" constitutes the other species of fish that are caught alongside the targeted catch, many of which are commercially insignificant and thus discarded overboard.

60. FAO, Office of Director-General, FAO Legislative Study 71, *Fisheries Enforcement: Related Legal and Institutional Issues National, Subregional or Regional Perspectives*, pt. 3 (2001) (by Erik Franckx), available at <http://tinyurl.com/3yaaop> ("The ICCAT doesn't have its own inspectors, but has to rely on the inspectors of the Contracting Parties. This may cause limitations.").

61. See *Compliance Monitoring Programs*, AUSTL. FISHERIES MGMT. AUTH., <http://tinyurl.com/386kxjb> (last visited Mar. 29, 2010).

62. The World Bank, *Global Economic Prospects 2007: Managing the Next Wave of Globalization* 148 (2007) (internal citation omitted).

63. U.S. COAST GUARD, OCEAN GUARDIAN: FISHERIES ENFORCEMENT STRATEGIC PLAN 2004–2014, at D-4 (2004).

Ocean fisheries suffer the classic ‘tragedy of the commons’ The result is that a fisher’s strongest incentive is to pre-empt his or her rivals by capturing as many fish as they can, as fast as possible. The fisherman has little incentive to conserve fish for tomorrow or to expend resources to enhance future stocks.⁶⁴

And as fishing fleets from developing countries have begun competing more heavily with those from developed countries, regulation and monitoring becomes an even greater concern. A World Bank report explains:

Developing countries, important participants in large-scale commercial fishing, confront particular weaknesses in managing fishery resources. In 2001, 6 of the top 10 marine fishing nations were from the developing world, with China and Peru (numbers 1 and 2) alone accounting for more than a quarter of total marine capture in metric tons. Developing countries also account for the vast majority of the increased trade in highly migratory species since the 1970s.⁶⁵

Further, as many developing countries have joined ICCAT, they have demanded slices of the fishing pie, which in turn would lower the quotas available to previous members.⁶⁶

ICCAT’s one possible success is its institution of a documentation regime, whereby all Atlantic bluefin caught and sold must reported. Rather than attempt to patrol the actual fishing, ICCAT instead adopted a trade-based self-compliance regime, whereby all international trade in Atlantic bluefin must be accompanied by certified documentation indicating country of origin, capturing vessel and its port of origin, method caught, and requisite national permits.⁶⁷ However, though ICCAT rules hold that “improperly documented bluefin tuna will be suspended . . . into the customs territory of a Contracting Party or

64. David R. Griffith, *The Ecological Implications of Individual Fishing Quotas and Harvest Cooperatives*, 6 FRONTIERS ECOLOGY & ENV’T 191, 191 (2008) (citation omitted).

65. The World Bank, *supra* note 62, at 148 (citation omitted).

66. “Just as the industrialized countries are starting to realize the need for more sensible management of the high seas, developing countries are heading in the opposite direction. ‘Developing countries firmly believe they have a right to expand their fisheries and that developed countries should reduce their fishing effort to compensate In the process of trying to resolve the conflict of interest, the stocks become overfished, and overall fishing effort grows to an unacceptable level. . . . It’s really just another example of the North-South problem, just like CO2 emissions.’” Paul Greenberg, *Tuna’s End*, N.Y. TIMES MAGAZINE, June 27, 2010, at MM28, <http://tinyurl.com/2f6nrxo>.

67. For a full overview of the ICCAT Bluefin Tuna Catch Documentation Program, see ICCAT, *Recommendation By ICCAT Amending the Recommendation 08-12 on an ICCAT Bluefin Tuna Catch Documentation Program*, available at <http://tinyurl.com/2w6z6ep>.

subject to administrative or other sanctions,”⁶⁸ severe sanctions have rarely been approved. At the time of writing, the only punitive measures taken have been slightly decreasing national quotas or, in one case, forcing a few Mediterranean farms to release their catch.⁶⁹ Moreover, though the organization does have the authority to board and inspect fishing vessels of its member states, it lacks the institutional capacity to do so, and thus must rely on domestic monitoring.⁷⁰ On its own, ICCAT has few viable enforcement mechanisms.⁷¹

C. Importance of Japan in the Bluefin Market

No discussion of the Atlantic bluefin can ignore the importance of Japan in the bluefin trade. Vilified in the western media,⁷² particularly after the March 2010 CITES meeting in which Japan lobbied to prevent the listing of Atlantic bluefin, Japan unquestionably drives the bluefin market and imports nearly eighty percent of bluefin caught worldwide.⁷³ Japan has thus been critical of any attempts at further bluefin regulation.⁷⁴

As previously discussed, the Japanese sushi and sashimi market — in which a two-inch piece of fatty tuna can cost upwards of twenty dollars⁷⁵ — drives the price of bluefin. While other developed countries

68. See ICCAT, *Bluefin Statistical Document Instruction Sheet*. The copy for American fisherman is available at <http://tinyurl.com/2fy69y3>.

69. Several trap farms in the Mediterranean have been forced by ICCAT to release their fish, though penalties have only been meted by ICCAT in a few instances. See Rich Ruais, *American Bluefin Tuna Association*, FISHERMAN’S VOICE, Jan. 2010, <http://tinyurl.com/2amc23g> (noting that recently in the Mediterranean, “two bluefin traps and two farms were forced to release fish already in captivity once it was determined that country quotas had been reached”).

70. Almost all RFMOs rely on domestic resources for inspection. For a discussion of various inspection regimes, see Chris Wold et al., *A Review of Monitoring, Control, and Surveillance Programs of International Fisheries Agreements with a View to the IWC’s Inspection and Observation Scheme of the RMS* (Dec. 2, 2010) (unpublished manuscript) (on file with the Virginia Journal of International Law Association).

71. See, e.g., David Jolly & John M. Broder, *U.N. Rejects Export Ban on Atlantic Bluefin Tuna*, N.Y. TIMES, Mar. 18, 2010, at A8.

72. The British press has been particularly harsh. See, e.g., George Monbiot, *Bluefin Tuna Loses out Simply Because Scarce Fish Make a Profit*, *George Monbiot’s Blog*, GUARDIAN.CO.UK (Mar. 19, 2010, 10:12 AM), <http://tinyurl.com/yerbdoh> (“Idiots. Morons. Blockheads. Numbskulls. Nothing quite captures the mind-withering stupidity of what has just happened in Doha. Swayed by Japan and a number of other countries, some of them doubtless bought off in traditional fashion, the members of [CITES] have decided not to protect the Atlantic bluefin tuna.”).

73. See *supra* note 5 and accompanying text.

74. See e.g., Stuart Biggs & Takashi Hirokawa, *Japan’s Prime Minister Welcomes Vote Against Bluefin Tuna Ban*, BLOOMBERG BUSINESSWEEK, Mar. 18, 2010, available at <http://tinyurl.com/23744kt>.

75. See *id.* (“The bluefin is the most prized among tuna for making sushi or sashimi in Japan. A 5-centimeter (2-inch) piece of the fattiest part of the fish, called otoro in Japanese, can cost more than 2,000 yen (\$22) in a Tokyo restaurant.”).

do participate in the market,⁷⁶ Japanese demand is primarily responsible for the astronomical prices, and remains the main reason why the fishing of diminished Atlantic bluefin stocks remains so profitable.

For the Japanese, international attempts to restrict bluefin fishing may have greater significance than other trade restrictions. Sushi and sashimi are integral symbols of Japanese culture: As one well-known sushi chef noted, “one could hardly call a sushi restaurant a sushi restaurant if it doesn’t serve [bluefin tuna].”⁷⁷ One anthropologist explains:

[S]eafood occupies a special symbolic niche because it is so frequently marked — by both foreigners and Japanese alike — as a distinctive element of Japanese cuisine. And so, when seafood or fishing turn up on the global stage, . . . [c]uisine — in the broad sense — itself becomes the crux of the matter [F]rom a commonplace Japanese perspective, environmental criticism of their nation’s fishing policies and of their society’s eating habits is a stinging assault on Japan itself. . . . They see themselves and their cuisine vilified as barbaric and regard the unending sets of foreign demands — stop whaling, classify bluefin tuna as an endangered species, protect dolphins — not as well meaning but, at best, as capriciously ethnocentric carping by Europeans and North Americans.⁷⁸

Japanese politicians and delegations have thus questioned many of the scientific studies of bluefin,⁷⁹ and Japan has indicated that it will do everything within its power to resist calls for banning the harvest or trade of Atlantic bluefin.⁸⁰ In a recent interview, Japan’s delegate to CITES explained “that Japan ‘would have no choice but to take a reservation’ — in effect, to ignore the ban and leave its market open to continued imports — if the bluefin tuna were granted most-endangered species status. ‘It’s a pity,’ he said, ‘but it’s a matter of principle.’”⁸¹ As such, Japan maintains that ICCAT — not CITES — should be solely

76. See *US Trade Embargo Could Save Bluefin Tuna*, THE END OF THE LINE BLOG (Jan. 17, 2009), <http://tinyurl.com/2g6rtun>.

77. Philip Brator, *Japan’s Press Play the Food Card in Bluefin Tuna Row*, JAPAN TIMES ONLINE, Mar. 21, 2010, <http://tinyurl.com/2ed5cz5>.

78. BESTOR, *supra* note 2, at 143.

79. The Japanese CITES delegation “considered tuna populations in the Eastern Atlantic and the Mediterranean to be healthy and did not believe the species was endangered.” Convention on International Trade in Endangered Species of Wild Fauna and Flora [CITES], 8th Sess., 15th mtg. at 2, CoP15 Com. I Rec. 8 (Rev. 1) (Mar. 18, 2010) [hereinafter CITES Fifteenth Meeting].

80. David Jolly, *Japan Plans to Ignore Any Ban on Bluefin Tuna*, N.Y. TIMES, Feb. 20, 2010, at B8.

81. *Id.*

responsible for the management of Atlantic bluefin stocks. Yet, to date, ICCAT has refused to ban the entire trade of single species.

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

CITES is the most comprehensive international treaty involving the protection of living species. It “has become a battleground because it is a strong convention,” as “[i]t is one of the few places where global environmental laws are made.”⁸² By focusing entirely on trade, it works to prohibit commerce in specifically listed species,⁸³ and the 175 states party meet every three years to consider limiting the trade in individual species. CITES’s most potent regulation is an “Appendix I” listing, in which a species is determined to be “threatened with extinction” and trade is “permitted only in exceptional circumstances.”⁸⁴ Notable examples of Appendix I species include the Asian elephant, giant panda, and almost all species of rhinoceros. At present there are fewer than one thousand species listed on Appendix I.⁸⁵

There has been substantial debate as to the effectiveness of the convention. A 2000 report to the United Nations, for example, noted the difficulty in assessing the effectiveness of CITES as a distinct factor in the extinction of species (though it did point to some successes, particularly regarding species that are legally traded and highly visible in the global marketplace).⁸⁶ Another report, however, notes the particular difficulties with CITES’s regulation of marine species, explaining that “CITES lacks expertise in marine issues . . . [and] does not have specific expertise in management of marine species.”⁸⁷

In early 2010, representatives from around the world met in Doha for the triennial CITES meeting and debated for the first time an Appendix I motion on the Atlantic bluefin. Many scientists expressed their approval: One noted that “[w]hat’s needed to save the stocks is a

82. *Fishy Business: How the Elephants’ Success Hurt the Bluefin Tuna*, ECONOMIST, Mar. 25, 2010, at 90.

83. See generally Convention on International Trade in Endangered Species of Wild Fauna and Flora, Mar. 3, 1973, 27 U.S.T. 1087, 993 U.N.T.S. 243 [hereinafter CITES]; *How CITES Works*, CITES.ORG, <http://tinyurl.com/y8lfvs> (last visited Apr. 2, 2010).

84. *How CITES Works*, *supra* note 83.

85. See CITES, *supra* note 83, app. I, available at <http://tinyurl.com/2bg5t8w>.

86. See generally Int’l Union for Conservation of Nature [IUCN], *Trade Measures in Multilateral Environmental Agreements, A Report by IUCN - The World Conservation Union on the Effectiveness of Trade Measures Contained in The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)* 37–50, IUCN Report 09/11/00 (Sept. 11, 2000) (discussing various CITES successes and failures).

87. Laura Little & Marcos A. Orellana, *Can CITES Play a Role in Solving the Problem of IUU Fishing?: The Trouble with Patagonian Toothfish*, 2004 COLO. J. INT’L ENVTL. L. & POL’Y 20, 77 n.287 (2004).

suspension of fishing activity and a suspension of international commercial trade,”⁸⁸ while another explained that the “measure . . . will eliminate the main cause of overfishing: high sushi and sashimi market demand of countries such as Japan or United States.”⁸⁹ A *Scientific American* report summarized the proposed listing:

If adopted, the proposal would be the first time a major commercial fishery was targeted by CITES for restriction and would arguably be one of the most visible and far-reaching interventions by the convention ever. CITES is most famous for its protections of African elephants and Asian tigers, and proposed protections for marine animals have only recently come up. It would also be a blow to the Atlantic bluefin’s current managers, [ICCAT].⁹⁰

The lead up to the convention was quite dramatic. The United States, France, Spain, and the rest of the European Union all supported the ban, despite being home to substantial tuna fishing fleets. On the other side, however, sat Japan, China, and most of the developing world, including such landlocked nations as Afghanistan, Bolivia, and Mongolia.⁹¹ Japan is reported to have lobbied heavily, especially poorer nations,⁹² and to have struck a deal with China by which they would reciprocally oppose a CITES listing for species of shark.⁹³

At the actual meeting, with the opposing sides lined up, there was little need for discussion. Before the parties could even discuss scientific rationale for the CITES listing, the Libyan delegation condemned the proceeding as a farce and demanded an immediate procedural vote.⁹⁴ Seventy-two nations then voted against the ban, with

88. Richard Black, *Tuna Ban “Justified” by Science*, BBC NEWS, Oct. 29, 2009, <http://news.bbc.co.uk/2/hi/8331113.stm> (quoting Sergi Tudela, head of fisheries for the Mediterranean region with the environmental group WWF).

89. See *Monaco Seeks Global Bluefin Tuna Trade Ban*, AFP, July 28, 2009, <http://tinyurl.com/2d42ztv> (quoting Maria Jose Cornax, a marine scientist at Oceana).

90. Nathaniel Gronewold, *Is the Bluefin Tuna an Endangered Species*, SCI. AM., Oct. 14, 2009, <http://tinyurl.com/ykxmj55>.

91. See *infra* note 94 and accompanying text.

92. See generally Justin McCurry, *How Japanese Sushi Offensive Sank Move to Protect Sharks and Bluefin Tuna*, GUARDIAN (UK), Mar. 26, 2010, at 32; Editorial, *The Fishing Lobby Wins Again*, N.Y. TIMES, Mar. 19, 2010, at A16.

93. See Gavin Blair, *Japan Win on Bluefin Tuna Showed Deft Hand at CITES Endangered Species Meeting*, CHRISTIAN SCIENCE MONITOR, Mar. 26, 2010, <http://tinyurl.com/234yceg> (“Rumors also circle of a quid pro quo arrangement at CITES with China, to exploit its growing international influence. ‘The Japanese government did a deal with China. They agreed to support China on the shark fishing ban — because shark fin soup is the most important thing to the Chinese — if China would support Japan on the bluefin tuna issue,’ [said] a source familiar with the negotiations.”).

94. See *Eaten Away: A Ban on the Trade in Bluefin Tuna Is Rejected*, ECONOMIST, Mar. 18, 2010, <http://tinyurl.com/3yjqrda> (“[E]yewitnesses report[ed] that the Libyan delegation made an

only fifty-three supporting it.⁹⁵ And thus, with almost no discussion, the CITES listing was rejected. As the *New York Times* reported, this “was a terrible day for bluefin tuna.”⁹⁶

E. Looking Forward

With the failure at Doha, and the apparent failures of ICCAT, the future does not bode well for the Atlantic bluefin. A 2009 World Wildlife Fund report estimated that spawning stocks in the Mediterranean could disappear in as little as three years.⁹⁷ And even as ICCAT scientists recognize the problem — their most recent assessment called for dramatic decreases in permissible catches⁹⁸ — the organization itself seems loath to take dramatic action. And while proposals have been offered to have the United States ban exports, such tactics may violate separate trade obligations under the General Agreement on Tariffs and Trade (GATT) and the World Trade Organization (WTO) (which, per the *Tuna/Dolphin* case, prohibit nations from unilaterally administering trade sanctions in order to force other countries to change behaviors).⁹⁹ As such, international cooperation, to the extent that it can be cobbled together, remains the only viable solution.

The one silver lining of the CITES vote was that it focused incredible attention on the bluefin industry. On the eve of the CITES vote, ICCAT, in an attempt to demonstrate its relevance, cut its quota by the largest amount ever, to 13,500 tonnes for 2010.¹⁰⁰ Though many environmental

unusual intervention. According to David Allison of OCEANA, a marine charity, the Libyan delegate started ‘screaming and calling everyone liars . . . He said the science was no good and that it was part of a conspiracy of developed countries. It was theatre. Then he stopped screaming and called for an immediate vote.’ Another witness, Sergi Tudela, a fisheries expert with the WWF, agreed: ‘The Libyan representative accused the FAO of serving political interests and said there was no scientific basis for the listing.’”

95. See CITES Fifteenth Meeting, *supra* note 79, at 4–8. These numbers actually represent the procedural vote on ending debate, with seventy-two nations voting to end debate.

96. *The Fishing Lobby Wins Again*, *supra* note 92, at 1.

97. See Ben Harding, *Overfishing to Wipe Out Bluefin Tuna in 3 Years: WWF*, REUTERS, Apr. 14, 2009, available at <http://tinyurl.com/3a76bfv>. But see Stefan Lovgren, *Bluefin Tuna in Atlantic Nearing Extinction, Conservation Group Says*, NAT’L GEOGRAPHIC NEWS, July 24, 2006, <http://tinyurl.com/34rvv9a> (quoting a tuna expert who thinks that WWF exaggerates its reports).

98. See generally ICCAT, *Report of the Standing Committee on Research and Statistics*, at 75 (Oct. 4–8, 2010), available at <http://tinyurl.com/2dwysep>.

99. See generally Report of the Panel, *United States — Restrictions on Imports of Tuna* (Aug. 16, 1991), GATT B.I.S.D. (39th Supp.) at 155 (1993). The *Tuna/Dolphin* case is a 1991 WTO panel report involving U.S. restrictions on the importation of Mexican-caught tuna because Mexican fishermen did not follow the same stringent dolphin-protection requirements forced on American fishermen. The WTO panel found such restrictions violated GATT rules. See *id.* at 201.

100. See Press Release, ICCAT, ICCAT Fortifies Its Management of Bluefin Tuna Fisheries (Nov. 16, 2009), available at <http://tinyurl.com/2e4r3u3>.

groups still criticized the move as too little too late,¹⁰¹ the decrease does perhaps indicate a new movement afoot at ICCAT. The question however remains: Is this new quota realistic or enforceable? And what effects will it have on the overall market? As with many scarce goods, how will a decrease in supply affect end-user cost? And, more importantly, can those increased costs be channeled back into conservation mechanisms, and not into the pockets of black-market traders? Though the answers to these questions are inherently unknown, the next Parts discuss alternate solutions — legal and political — through which ICCAT might still remain effective.

III. PROPERTY RIGHTS AND HIGH SEAS FISHERIES

This Part begins with the premise — established in Parts I and II of this Note — that current international management regimes and treaties have failed to properly manage Atlantic bluefin stocks. Despite the UN preference for regional management, ICCAT, with its current hands-off approach, has proven completely ineffective. This Part then proposes alternative management structures that might provide ICCAT with greater enforcement abilities, looks at various property rights solutions, and then applies these solutions to the unique features of the Atlantic bluefin fishery. It also operates on the single guiding principle that the conservation of the species is the most important consideration, and that the negative externalities produced by the status quo bluefin market outweigh the positives. This is of course controversial, as it perhaps undervalues the importance of fishing communities¹⁰² or potential fairness concerns that might result from the transferring of fishing rights from one community (or country) to another,¹⁰³ not to mention the consuming public's enjoyment of eating sushi. Yet, for the sake of this

101. For example, the conservation group WWF noted: "The Atlantic tuna commission today came up with only inadequate or delayed actions to ensure the recovery of the eastern Atlantic bluefin tuna . . ." *Atlantic Bluefin Trade Ban Now Vital as Tuna Commission Fails to Take Action Again*, WWF (Nov. 15, 2009), <http://tinyurl.com/39uhshv>.

102. See generally Seth Macinko, *Fishing Communities as Special Places: The Promise and Problems of Place in Contemporary Fisheries Management*, 13 OCEAN & COASTAL L.J. 71 (2007) (discussing the importance of fishing communities and arguing for "place-based" management regimes).

103. See, e.g., Will Walsh, *Fishy Business*, 59 ALA. L. REV. 1661, 1681 (2008) (discussing downsides of property rights allocations, including the transfer of rights to a few large companies and the destruction of some well-established fishing communities); see also Z. Wu, *The Fishing-Rights on Marine Resources in China* pt. 3, in FAO, Fisheries & Aquaculture Dep't, FAO Fisheries Technical Paper 404/2, *Use of Property Rights in Fisheries Management* (Ross Shotton ed., 1999), available at <http://tinyurl.com/2awckcr> (describing the fishing needs of a developing China, noting that unfair management of fish stocks could "trigger a social and political crisis," and concluding that "a proper and effective management system must resolve the conflicts between fishers, fishing-capacity imbalance and fisheries resources productivity").

Note, and for the Atlantic bluefin, conservation remains the paramount concern. Despite the beneficial economic activity and sushi-eating enjoyment produced by bluefin fishing, the detrimental impact on the species, as discussed in the previous Parts, is, in the eyes of this author, of greater importance. In other words, this Note proceeds with the idea that bluefin fishing, as it currently stands, is a net negative externality producing activity.

A. *The High Seas and Commons Theory*

The idea that property rights can and should emerge in an otherwise open commons is traced back to Professor Harold Demsetz, who in his seminal 1967 essay noted that “the main allocative function of property rights is the internalization of beneficial and harmful effects.”¹⁰⁴ In other words, property rights need to emerge to serve as a corrective force when the negative impact of an activity is not accounted for — internalized — in the performance of that activity.¹⁰⁵ The problem, however, is that the transition to a property rights regime is not a simple flip of a switch. In many cases, such a transition can take decades, if not longer.¹⁰⁶ While this may be beneficial in some situations, as it allows actors to slowly become accustomed to new forms of property ownership, it can be a problem when a negative externality emerges quite quickly. And in the case of fisheries, population collapse can occur with little warning.

The transition to property rights regimes remains difficult to study because, as has been noted, such implementations “are fraught with difficulty.”¹⁰⁷ Problems include “contracting costs and political

104. Harold Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. REV. 347, 350 (1967).

105. *Id.* (“[P]roperty rights develop to internalize externalities when the gains of internalization become larger than the cost of internalization.”); accord Michael A. Heller, *The Tragedy of the Anticommons: Property in the Transition From Marx to Markets*, 111 HARV. L. REV. 621, 678 (1998) (“Demsetz suggests that communities move to private property in a resource when technological or population pressures increase the differential between individual gain and social cost. When the effects of resource use are fairly localized, private property better aligns each owner’s interest with the efficient level of use because each owner faces the full costs of overconsumption.”).

106. See Demsetz, *supra* note 104, at 350 (“These adjustments have arisen in Western societies largely as a result of gradual changes in social mores and in common law precedents.”).

107. Heller, *supra* note 105, at 679. “[M]arkets may fail because of transaction costs and strategic bargaining, and governments may fail because of the cost and administrative complexity of compensation and the fear of demoralizing potential investors by reforming property rights without compensation. Although some anticommons resources may make the transition to private property, many other valuable resources may remain stuck on a poorly-performing path.” *Id.*

incentives that arise among claimants with heterogeneous interests.”¹⁰⁸ The latter, of course, is the major problem within ICCAT.¹⁰⁹

Little has been written (at least in the legal academy) about management regimes for *high-seas* fisheries. This is primarily due to established international law and the United Nations Convention on the Law of the Sea (UNCLOS), which prohibits restrictions on high-seas fishing,¹¹⁰ as well as the fact that enforcement and prevention of new entrants into high-seas fishing markets is relatively unfeasible. Proposals for dealing with such situations are admittedly utopian. Some have argued that the only way to ensure proper management is to extend national exclusive economic zones beyond the continental shelves,¹¹¹ while others have advocated the replacement of RFMOs with multinational commercial fishing organizations.¹¹² What is generally understood, however, is that some form of international cooperation is necessary to address the externalities that result from unfettered access to limited ocean resources.¹¹³

While management models involving catch restrictions or fishing limitations have been suggested (and even implemented, to some degree), these have generally applied to coastal fisheries, thus allowing the coastal nation complete regulatory authority over the stocks and reducing the commons problem. In other cases, such as the cod-fishing grounds that fall within overlapping U.S. and Canadian territorial jurisdiction, an extension of EEZs (which had the effect of driving non-U.S. and Canadian fishermen out of the market), combined with a subsequent bilateral moratorium and payouts to fishermen, has proven effective in reducing fishing—though in this and other cases, the agreement arrived after the fish stock had crashed.¹¹⁴ Cooperation in

108. Dean Lueck, *The Extermination and Conservation of the American Bison*, 31 J. LEGAL STUD. 5609, 5611 n.10 (2002).

109. See *infra* Part IV.B.

110. Convention on the Law of the Sea art. 116, Dec. 10, 1982, 1833 U.N.T.S. 397 (declaring “[a]ll States have the right for their nationals to engage in fishing on the high seas subject” only to treaties and other conditions imposed by regional management organizations (such as ICCAT)).

111. See, e.g., Rögnvaldur Hannesson, *Rights Based Fishing on the High Seas: Is It Possible?*, (Nov. 2010) (unpublished manuscript) (on file with Virginia Journal of International Law Association).

112. See G.T. Crothers & Lindie Nelson, *High Seas Fisheries Governance: A Framework for the Future?*, 21 MARINE RESOURCE ECON. 341 (2006).

113. See, e.g., Eric A. Posner & Alan O. Sykes, *Economic Foundations of the Law of the Sea*, 104 AM. J. INT’L L. 569, 571 (2010) (noting that “[i]nternational externalities commonly result from activities at sea,” and that “international cooperation is necessary to address these externalities”).

114. For a discussion of this and other U.S.–Canadian fisheries cooperation, see Ted L. McDorman, *Canada-United States Cooperative Approaches to Shared Marine Fishery Resources: Territorial Subversion*, 30 MICH. J. INT’L L. 665, 677–82 (2009).

these cases is easier, however, because the dual-party nature of negotiations inherently limits transaction costs.

In general, however, high-seas fisheries retain all the problems endemic to the classic common-pool conundrum — what Garrett Hardin famously called the “shibboleth of the ‘freedom of the seas.’”¹¹⁵ And Hardin limited the solutions to the few and obvious:

We might sell [the commons] off as private property. We might keep them as public property, but allocate the right to enter them. The allocation might be on the basis of wealth, by the use of an auction system. It might be on the basis of merit, as defined by some agreed-upon standards. It might be by lottery. Or it might be on a first-come, first-served basis, administered to long queues. These . . . are all the reasonable possibilities. They are objectionable. But we must choose — or acquiesce in the destruction of the commons¹¹⁶

Though Hardin’s prognostication has been called into question by certain management regimes, especially in the local and coastal contexts,¹¹⁷ it has unquestionably remained true for high-seas fisheries. Yet, as discussed below, the very features that make the Atlantic bluefin market so valuable may in fact provide for the species’ salvation. The following sections, in applying several property-allocation management models to the particularities of the Atlantic bluefin, perhaps reveal a glimmer of hope, thanks mostly to the one-directional Japanese market forces.

B. Operative Guidelines for Potential Solutions

Commons problems can be mitigated in three ways: through political agreements, economic solutions (such as privatization), or, as Elinor Ostrom has recently demonstrated, through custom.¹¹⁸ Regarding the Atlantic bluefin, we can dismiss custom because it has been shown to work only in small, local contexts in which the market actors know or

115. Garrett Hardin, *The Tragedy of the Commons*, 162 *SCIENCE* 1243, 1245 (1968).

116. *Id.* Note that although Hardin here refers specifically to national parks, the same principles apply to high seas fisheries. Hardin himself drew the analogy as well. *See id.*

117. Elinor Ostrom, winner of the 2009 Nobel Prize in economics, has written extensively on local customs and institutions used (generally in small-scale situations) to overcome commons problems. *See, e.g.*, Elinor Ostrom & Edella Schlager, *Property Rights Regimes and Coastal Fisheries: An Empirical Analysis*, in *POLYCENTRIC GOVERNANCE AND DEVELOPMENT* 87 (Michael D. McGinnis ed., 1999); accord Fikret Berkes, *Revising the Commons Paradigm*, 1 *J. NAT. RESOURCES POL’Y RES.* 261, 263–64 (2009) (arguing that the creation of multilateral management institutions and property rights regimes has altered the traditional tragedy of the commons model).

118. *See* Ostrom & Schlager, *supra* note 117.

have direct connections to one another.¹¹⁹ Moreover, ICCAT has demonstrated that its heterogeneous member states have been unable to reach a political agreement that truly protects the bluefin population. An economic-modeled market-based remedy thus appears to be the best remaining solution.

The central tenet of most market-based solutions to commons problems is the Coasian elimination of transaction costs so that goods can more easily flow to those who can best utilize or value them¹²⁰ — and best internalize the goods' costs. In the case of Atlantic bluefin, such a management system would allow those who most value the right to fish — Japanese importers, Spanish fishermen, or even American conservationists — to be able purchase those rights. Conversely, the current ICCAT quota system permits only the trading of quotas between states (as opposed to between fishermen), requires ICCAT permission for each trade,¹²¹ and thus does not at present easily facilitate the transfer of quotas to those that most value them, be they fishermen, nations, or conservationists. This in turn provides individual fishermen with little incentive to discourage IUU fishing, as their own rights to fish lack any monetary value, and they thus have little reason to protect them.

For these reasons, a new management structure that overcomes these barriers must be considered. At the same time, any new structure has to contend with an important and nagging feature of treaty organizations and international law: Any country can pull out at will. Thus, any new management regime must take into account Japanese concerns, or else it runs the risk of forcing Japan out of the system and allowing it to resume fishing and importing outside of any quota arrangement.

Because of the nuances of the bluefin market — notably the significance of Japanese demand — a successful stock management structure that seeks to protect the species above all other considerations requires, at minimum, the following four elements:

- (1) A regulated and enforced market for the Atlantic bluefin that permits the free transfer of fishing quotas to any interested party. This will have the dual effect of (a) allowing those nations in favor of a complete ban to bid up the cost of fishing

119. *See id.*

120. *See generally* Ronald Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1 (1960) (discussing how transaction costs interfere with optimal resource allocation).

121. *See* ICCAT, *Recommendation Amending the Recommendation by ICCAT to Establish a Multiannual Recovery Plan for Bluefin Tuna in the Eastern Atlantic and Mediterranean*, ¶ 16, (May 2008), available at <http://tinyurl.com/2fonztm> [hereinafter *ICCAT Recommendation*] (“Private trade arrangements and or transfer of quotas/catch limits between CPCs shall be done only under authorization by the CPCs concerned and the Commission.”).

rights, and (b) internalizing the true exploitation costs in the actual end-user price.¹²²

- (2) Some mechanism to discourage new fishermen from entering the market and reduce the size of the current fishing fleet.
- (3) Some way to recouple Japanese demand with that of the bluefin-stock maintenance — in other words, make Japan or its consumers pay for monitoring and enforcement — while convincing Japan to remain in the system.
- (4) A reduction in IUU fishing.

The following sections look at several possible legal- and property-rights management models and then consider their effectiveness in the case of the Atlantic bluefin.

C. Fisheries Management and Legal Theory

Fisheries experts are increasingly coming to terms with the fact that diplomatic management of migratory species is proving untenable,¹²³ and are beginning to accept that alternative, property-allocation regimes might provide the only real solution.¹²⁴ Forcing some sort of property-rights regime onto a commons good is never an ideal solution, and, in the context of the open oceans, seems anathema for several reasons: The high seas are legally free, open to all, by both custom and the universally signed Convention on the Law of the Sea;¹²⁵ property regimes artificially disrupt natural ecosystems;¹²⁶ and property-rights management philosophically “contradicts the proposition that common pool natural resources should be open to all and not subject to individual

122. However, this increased price may then actually have the unintended effect in increasing IUU fishing.

123. See, e.g., Grafton et al., *supra* note 3, at 158 (“[C]apacity limits, vessel day limits, and even restricted vessel registries at best provide ‘stopgap’ measures to the ‘race to fish’. . . Fishers are always ‘one step ahead’ of the regulators in finding ways to overcome the rules attempting to curb increased fishing effort.”).

124. See Jon M. Van Dyke, *Allocating Fish Across Jurisdictions*, in CONSERVATION AND MANAGEMENT, *supra* note 3, at 175 (“[I]t is almost inevitable that the allocation schemes will evolve into something akin to a ‘rights-based’ system, and that countries will view their allocation quotas as a vested property right that they are entitled to maintain in future years.”).

125. Convention on the Law of the Sea art. 87, Dec. 10, 1982, 1833 U.N.T.S. 397 (“The high seas are open to all States, whether coastal or land-locked.”).

126. See, e.g., Brent M. Haddad, *Property Rights, Ecosystem Management, and John Locke’s Labor Theory of Ownership*, 43 ECOLOGICAL ECON. 19, 20 (2003) (noting “that advocates of strong property rights are promoting amoral and asocial attitudes that can be traced back to Locke’s ‘general contempt’ for the quality of the natural products of the earth”); Allison Reiser, *Property Rights and Ecosystem Management in U.S. Fisheries: Contracting for the Commons?*, 24 ECOLOGY L.Q. 813, 814 (1997) (looking generally at ecological critiques of property rights fisheries management regimes and focusing particularly on “two traditionally touted property rights regimes: private and communal ownership”).

appropriation.”¹²⁷ Yet conservationists need only look to the failed diplomatic management by regimes such as ICCAT to argue that some other form of protection is required.

Most literature on international fisheries management has generally focused on state cooperation — which, as this Note has demonstrated, has not yet worked for the Atlantic bluefin.¹²⁸ The literature that does touch on property-rights allocation for marine high-seas fisheries generally falls into two camps.¹²⁹ One side argues for an expansion of national EEZs to cover the entire migratory grounds of certain species, so that the nations through whose territory the fish pass have more incentive to advocate for their survival.¹³⁰ The downside to this approach, of course, is that states still then need to manage the stocks *within* their EEZs, and they do not always do this well.¹³¹ Moreover, in the Atlantic bluefin context, the problem is not so much about EEZs, as the bluefin migrates through multiple EEZs and the high seas, creating a situation in which every nation has an incentive to take as much as possible before others have their shot.¹³²

The second approach looks to market-based mechanisms and seeks to internalize the costs of long-term stock degradation among those harvesting (and consuming) the species. While there are several ways this can be done, all involve the creation of some sort of controlled market mechanism in which the right to fish can be priced and traded,¹³³ similar to cap-and-trade models. The important requirements of these systems, however, are minimal barriers to the pricing and trading of fishing rights and mechanisms through which the price of fishing rights

127. Hope M. Babcock, *Grotius, Ocean Fish Ranching, and the Public Trust Doctrine: Ride 'Em Charlie Tuna*, 26 STAN. ENVTL. L.J. 3, 45 (2007).

128. This argument is by no means unique and is more or less the consensus opinion of major fisheries observers and economists. See, for example, R. Quentin Grafton et al., *Incentive-Based Approaches to Sustainable Fisheries*, 63 CANADIAN J. FISHERIES & AQUATIC SCI. 699 (2005), which was written by nineteen of the most established members of the field.

129. This dovetails with Demsetz's notion that “some societies would tend to evolve toward state ownership, whereas others would tend to prefer private ownership, and he attributed this to cultural differences (community tastes).” Thomas W. Merrill, *The Demsetz Thesis and the Evolution of Property Rights*, 31 J. LEGAL STUD. 331, 335 (2002).

130. See, e.g., Hannesson, *supra* note 111, at 10 (arguing that the “RFMO-based management regime for the high seas is much inferior to a regime based on closing the remaining high seas by extending the EEZ”).

131. See Rögnvaldur Hannesson, *Exclusive Rights to Fish: Towards a Rational Fisheries Policy*, 39 GEOJOURNAL 179, 183 (1996) (discussing domestic successes and failures of managing cod stocks within EEZs).

132. For a deeper discussion of the weakness of EEZ-based property management for migratory species, see Robin Allen et al., *Rights Based Management in Trans-National Tuna Fisheries*, in CONSERVATION AND MANAGEMENT, *supra* note 3, at 75 (noting that the “nationalization of the EEZs [has] proved ineffective”).

133. Methods include limiting and then trading quotas, the right to fish on certain days, or the right to fish in certain areas, among others.

accurately represents the market price at whatever supply level regulators determine to be ecologically sustainable. While such a system still requires regulators (and thus political actors) to establish quotas, it provides a mechanism for the fishing rights to flow to those who value them the highest. Further, it encourages those in possession of fishing rights to better police the system, as illegal entrants devalue those rights (and thus their possessors' investments).

1. *Market Scenarios*

In a normal open market situation, involving a standard *inexhaustible* good with zero value-added costs (for example, raw apples), the market price of the harvested resource would be the growing/harvesting costs plus production, transportation, and other fixed-cost expenses, plus whatever premium the harvester can demand for his profit. Additional growers will enter the market (and grow more apples) until that premium reaches a point low enough to discourage new market entrants. The advantages of this system are obvious: Prices are forced downwards (benefiting consumers), and supply and demand reach an equilibrium point where both sellers and consumers produce and consume at the optimal level. In an open market for an *exhaustible* commons good (such as in fisheries), there is no problem so long as the demand (which suppliers are able to freely meet) remains less than the maximum sustainable yield (MSY). However, in an open market, when demand remains higher than the MSY, exhaustion is inevitable.

Contrast these now to a *capped* market for an exhaustible good. In this scenario, a regulator caps supply, ideally at a point no higher than the MSY. With an end-user market price quickly established by supply and demand, participants are now able to properly value the cost of the right to harvest that good — end user price minus intermediary costs plus harvester profit premium.

This cap-and-trade system can be further divided into *closed* and *open* models. In a *closed* system, entry barriers are established to prevent new players from entering the system. This is useful when the harvesting or use of a resource produces net positive externalities. Conversely, in cases where the harvesting or use of a resource produces net negative externalities, a closed system can sustain the activity by preventing those who more highly value its use (or nonuse) from entering the market. And some of the prime examples of negative-externality-producing closed systems are, as will be discussed, managed by RFMOs, including ICCAT.

In an *open* cap-and-trade system, on the other hand, the barriers to entry disappear and anyone can enter a market to bid on harvesting or

use rights. Like closed systems, there are positive- and negative-externality open systems. In a *positive*-externality-producing open system, in which the use of a resource has net positive effects, an open system is generally detrimental, as it allows those who may not fully utilize the resources to take possession of them. Conversely, in a *negative*-externality-producing open system, the low barrier to entry allows for entrants to easily bid for the right *not* to utilize that resource or continue that activity. So, in such a system, a town could purchase a factory's right to pollute if the townspeople valued clean air more than the amount that the factory owners were profiting from it. Similarly, as will also be discussed, a party could purchase another's right to fish *to prevent* harmful fishing from occurring.

Through most of human history, high-seas fisheries were open and, eventually, exhaustible markets. Recently, however, the creation of RFMOs has, for the more scarcer fish, changed these markets by essentially seeking to enclose them. Quotas, catch-restrictions, fishing time-limits, and other fishing-reduction regulations all increase entry barriers and limit the size of the market. Different fisheries have tried different techniques. In the Alaskan halibut fishery, regulators first limited catches to twenty-four hour "derbies," in which fishermen raced to catch as much as possible in these short windows.¹³⁴ However, this system resulted in an excess number of boats participating in those two days and produced dangerous fishing conditions.¹³⁵ Other techniques involve limiting the technology permitted in the fishery. ICCAT, for example, now bans the use of spotter planes¹³⁶ and limits catch size to bluefin of greater than thirty kilograms.¹³⁷

Recently, the most commonly discussed management system has been the individual transferable quota (ITQ), in which fishermen can freely trade their allocated quotas. Canadian fisheries have implemented this system with some success, though it has also been criticized for "encouraging speculative buying and leasing of quota," which then drives up the cost of fishing¹³⁸ (though from a conservation perspective,

134. See Walsh, *supra* note 103, at 1674–75 (describing the halibut fishery regulations and subsequent aftereffects). The derby system resulted in the additional problem of resigning seafood patrons to frozen halibut for most of the year. The Discovery Channel's television series *Deadliest Catch* similarly depicts the dangers of limited fishing windows.

135. *Id.*

136. "Spotter planes were banned by the International Commission for the Conservation of Atlantic Tunas (ICCAT) because they make over-fishing too easy." Charles Clover, *Illegal Bluefin Tuna Fishing Carries On*, TELEGRAPH (UK), June 28, 2007, <http://tinyurl.com/2ws7ksu>; see also ICCAT Recommendation, *supra* note 121, at 26. ("[Contracting parties] shall take necessary measures to prohibit the use of airplanes or helicopters for searching for bluefin tuna in the Convention area.")

137. See ICCAT Recommendation, *supra* note 121, at 27.

138. Ecotrust Canada, Press Release, Study Cautions Against Repeating Mistakes of B.C.'s

this is a good thing). But there are relatively few international examples of successful ITQ implementations, as most of the successes have occurred in smaller, national fisheries.¹³⁹ This makes some sense, as national fisheries can be regulated by a single domestic regulatory regime, and all fishermen possess the same rights and remain subject to the same jurisdictional penalties.

Conversely, in an international fishery, the question of jurisdiction becomes more complicated. Which nation's laws must a Maltese-owned, Spanish-built, Panamanian-flagged, Italian-captained, and Turkish-crewed ship landing its catch in Morocco follow? How can ICCAT, with no independent enforcement powers, regulate such operations? Moreover, under ICCAT's current quota system, each nation receives a share of the total allowable catch (TAC) and is then free to distribute its quota to fishermen in whatever manner it chooses — limited only by ICCAT's registry of approved ships.¹⁴⁰ And further, nations must decide how to allocate quotas between commercial and sport fishermen, and they must contend with lobbying from both parties. Put simply, ICCAT's current bluefin quotas — which, on paper, are transferable — are, in reality, not.

D. Potential Property-Rights Solutions for Atlantic Bluefin Management

1. An ITQ System?

Applying the principles developed above, the optimal solution to prevent overfishing (a negative-externality activity) of the exhaustible Atlantic bluefin is, in the absence of expanded EEZs or a complete moratorium on fishing, the construction of a capped-but-open market for bluefin fishing rights. This would allow any entity — a nation, fishing company, environmental organization, or speculator — to purchase fishing rights and then do with them what it wants. Again, I stress that this requires a base assumption that overfishing carries negative externalities — jobs, income, and enjoyment of sashimi are all no doubt positive benefits of the tuna trade, and some might argue that these benefits actually outweigh the overexploitation costs and result in

Speculative Fishing Quota Markets, July 21, 2009, available at <http://tinyurl.com/2aobbay>.

139. See generally, FAO, Fisheries & Aquaculture Dep't, FAO Fisheries Technical Paper 411, *Case Studies on the Allocation of Transferable Quota Rights in Fisheries* (2001) (by Ross Shotton) (documenting over ten examples of ITQ implementations).

140. For a breakdown of the most recently allocated 2009 quota, see ICCAT, *Recommendation Amending the Recommendation by ICCAT to Establish a Multiannual Recovery Plan for Bluefin Tuna in the Eastern Atlantic and Mediterranean* (Dec. 18, 2008). Every bluefin fishing vessel must also register with ICCAT. See *id.*

net positive externalities. Of course, in this scenario, the bluefin will eventually disappear.

Assuming then that our primary goal is to prevent the collapse of the Atlantic bluefin population, but recognizing that a complete worldwide ban is unavailable post-CITES, a market mechanism must necessarily ignore the commercial and equity benefits of the status quo bluefin market, in which quotas were traditionally allocated by historical catch amount (though recently they have been divided more equitably among developing nations).¹⁴¹ Because equitable considerations distort (or, in other words, hide) the true cost of fishing, they actually encourage more fishing and discourage fishing rights from moving to the most interested party.¹⁴²

An effective ITQ system would then begin with a scientifically approved TAC no higher than the MSY. Yet, we know that ICCAT has been unable to vote the TAC down to scientifically recommended levels. This, however, might be less of a problem than it seems. Let us begin with ICCAT's revised 2010 TAC of 13,500 tonnes,¹⁴³ which could then be distributed using either of two methods.

First, they could be distributed as they are at present, as rents, to states, but once in the hands of individual fishermen they could be swapped and sold at will. This has the advantage of maintaining popular support, as those who are currently fishing are still granted the right to continue fishing but with the option to sell to others, including conservationists or a conservationist government. The downside, however, is that potential transaction costs may make trading difficult (and certainly more expensive), and some might simply choose not to sell. Given the already decreased total supply, these fishermen would likely still be able to find fishing profitable, even if they could make more money simply by selling their quotas, and they might continue to do so in order to maintain their lifestyles. Or, as is more likely, a nation

141. See, e.g., ALEX G. OUDE ELFERINK & DONALD R. ROTHWELL, OCEANS MANAGEMENT IN THE 21ST CENTURY: INSTITUTIONAL FRAMEWORKS AND RESPONSES 81 (2004) (explaining that ICCAT, for example, is moving away from historic catch and towards a more democratic allocation system).

142. This can be viewed as a simple fairness/efficiency dichotomy. The fairness of either (a) allowing those nations that traditionally harvested bluefin, or (b) equitably distributing fishing rights to all nations regardless of their history of bluefin fishing, is contrasted with the efficiency of a truly open market in which any country or organization could bid for the right to fish. In other words, by preventing those who most value quota (either to fish *or* conserve) from obtaining access to it — or, conversely, by affording quota to fishermen/nations who choose to fish even though it is in their economic self interest to sell the quota — non-economic distribution decreases market efficiency and leads to increased (and inefficient) fishing.

143. Note that this is only for the eastern stock — another 1900 tonnes are allocated for the western stock — but for simplicity's sake we will analyze only the eastern stock.

would prefer to protect its own fishing industry even if, in a macro sense, it was more beneficial to that nation to sell its quota to others.¹⁴⁴

Second, the rents (quotas) could be sold off by ICCAT. Under this system, the 13,500 metric tonnes could be auctioned, with the proceeds going towards enforcement and other regulatory measures, or perhaps back to other industry groups or fishermen in developing nations to mitigate the sting of losing their quotas (as they would likely be outbid by wealthier nations or fishermen). The advantage of this approach is twofold: Not only are costs immediately internalized — the price paid per fishing right likely represents, at a minimum, the actual cost of fishing — but governments and conservationists are immediately able to bid up prices and restrict capacity.

Let us assume an average market price in Japan of \$30 per kilogram for bluefin tuna (similar to the average 2009 price of \$32.26 per kilogram).¹⁴⁵ This would mean that the total 2010 Atlantic bluefin market would be worth approximately \$400 million.¹⁴⁶ But this price was calculated in a market in which quotas were assigned politically, and thus not necessarily representative of true market price, and in which IUU fishing greatly increased the supply. In a free market, and one in which proceeds of the initial sale of fishing rights were immediately allocated towards catch documentation and IUU policing, the 13,500 tonnes of quota would likely sell for a substantial part of that \$400 million, if not more. And the proceeds would allow ICCAT to drastically expand its compliance regime — its current budget of €2.71 million (\$3.5 million)¹⁴⁷ pales in comparison to the potential money raised — and perhaps compensate those fishermen put out of business.¹⁴⁸ Further, depending on how the quotas are structured, they could be worth significantly more. Instead of one-year rights, ICCAT could sell multi-year permits, which would both sell for more and permit a more dynamic market, as the extended length of the quotas would permit more complex financial arrangements — and thus, as the

144. Because ITQ implementation has been shown to harm fishermen, they might understandably be reluctant to move from the status quo, even if doing so might help battered fish stocks. For a brief discussion of ITQ regimes and their effect on fishermen, see ECOTRUST CANADA, A CAUTIONARY TALE ABOUT ITQ FISHERIES 6 (2009), available at <http://tinyurl.com/2gyw4fd>.

145. The reported average 2009 price, \$32.36, was down from even higher prices in 2008. Chris Loew, *Tuna Prices in Japan Fall on Weak Holiday Demand*, SEAFOODSOURCE.COM (Dec. 31, 2009), <http://tinyurl.com/378ykn1>.

146. $13,500 \text{ metric tons} \times 1000 \text{ kilograms/metric ton} \times 30 \text{ \$/kilogram} = \$405,000,000$.

147. See *Finances*, ICCAT, <http://www.iccat.int/en/finances.htm> (last updated Mar. 11, 2010).

148. For a discussion of how auction proceeds can be used, see Robert N. Stavins, *Policy Instruments for Climate Change: How Can National Governments Address a Global Problem?*, 1997 U. CHI. LEGAL F. 293, 306 (1997).

law and economics argument posits, permit greater efficiencies.¹⁴⁹ Because rights could be freely traded, the market might encourage speculation, which would further increase the price — not necessarily a bad thing if the goal is to decrease harvests. A secondary market would also allow price readjustment and further efficiencies.

Auctions are not without their problems.¹⁵⁰ Furthermore, there has yet to be a single successful implementation of an international ITQ auction system, mostly because established fishing interests understandably object to new restrictions on their currently discounted rents.¹⁵¹ And, in the case of the Atlantic bluefin, developing nations would likely push back against any system that might threaten their increasing fishing interests.

However, returning to our four criteria for adequately managing the bluefin stock, we can examine whether the different types of ITQ systems satisfy all elements.¹⁵² First, the auction model: (1) It is a regulated market that lets those interested in banning bluefin fishing bid for rents and drives up end-user price by further limiting harvests and increasing the costs of fishing; (2) the limited and transferable nature of the quotas should allow them to flow to those who value them most and price many fishermen out of the market; (3) Japanese demand is aligned with stock preservation only if the bluefin keeps flowing to the point where Japan is willing to remain in the system — which may not occur if conservation nations bid up the price beyond where the fish can profitably be harvested — or pay the high amounts to keep harvesting; and (4) the income from selling fishing rights could theoretically be used for enforcement, though the increased commodity price brought about by decreased supply might then re-encourage further IUU activity.

The quota-allocation model produces slightly different results: (1) It is regulated, but it does not guarantee that fishing rights matriculate to

149. *See id.* (“To date, most tradeable permit systems have used perpetuities, but there are several reasons why a system of time-limited permits could be used for climate change. First, if permits are initially grandfathered, time-limited permits can reduce the anti-competitive effects of entry barriers. Second, time-limited permits can facilitate any potential future changes of emissions targets in response to new information. The government can retain ownership of permits, leasing them to firms for fixed periods.”); *see also* Dale Squires et al., *Individual Transferable Quotas as a Fisheries Management Tool*, 3 REVS. FISHERIES SCI. 141, 147 (1995) (“Periodic auctions protect against market concentration and market thinness.”).

150. As discussed, auctions can both be unfair and concentrate market power in the hands of a few players. But again, from a conservation standpoint, this is not necessarily a bad thing.

151. “Such an approach . . . is likely to incur resistance from current fishers who would feel, correctly, that their previous catch histories used to determine quota shares would be compromised.” DONALD R. LEAL, FENCING THE FISHERY 34 (2002), *available at* <http://tinyurl.com/2fy7ecx>.

152. *See supra* Part III.B.

those who may want to limit fishing; (2) it does discourage fishing, and it should make some fishermen abandon fishing as they will find selling their fishing rights to be more profitable; (3) it makes it easier for Japan to ensure that bluefin are still caught, as they can use other diplomatic persuasion to secure fishing rights (instead of being forced to rely on the auction), though it does little to force them to police IUU fishing; and (4) it probably does little to prevent IUU fishing, as nations have little incentive to provide resources to police, and there is no increased ICCAT revenue available to increase monitoring.

There is, however, one additional outcome that might emerge from each of these scenarios. Because Japanese demand drives the bluefin market, we would assume that Japan, or Japanese companies, would pay a premium to ensure a continued supply. Especially after the CITES vote, in which previously allied bluefin-fishing nations (such as France and Spain) were willing to put aside their own economic interests and curtail bluefin fishing, Japan might want to ensure that it retains control over the bluefin stock — to guarantee both continued supply and long-term sustainability. As the next section discusses, there may in fact be an entirely different model that results in this outcome: the monopsony.

2. *A Monopsony Solution?*

In the absence of a complete Atlantic bluefin fishing moratorium, and so long as the fish continues to command such high prices in the Japanese market, the fishing community will have little incentive to abide by quotas and catch restrictions. While developed nations can to some extent police their fleets or pay their fishermen to remain idle, such newly created voids are easily filled by fleets from less-developed nations that lack the regulatory strength to prevent IUU fishing. Unlike codfish or other species of tuna, however, the profit-driving market for Atlantic bluefin is relatively one-directional, and thus there exists a weak link in the chain that can be exploited: Japanese demand.¹⁵³

The bluefin market is not a true monopsony — a market in which there are many sellers but only one buyer. Japan imports only 80 percent of the total Atlantic bluefin catch, with the remaining exports spread amongst the developed world. Moreover, the market is

153. That Japanese demand drives the entire bluefin market cannot be overstated. *See, e.g.,* Eilperin, *supra* note 5. Consider the case of Algeria: Although Algeria has had an ICCAT quota of roughly 1500 tons per year since 2002, it not only lacks the fleet and processing facilities to handle such a catch but, according to one report, had demonstrated little proof that any of its vessels even fish bluefin. Rather, though Algeria claimed to have caught its quota, it appeared that it was illegally selling the right to its catch to foreign fishermen, including many from Japan and East Asia. *See A Troubled Bluefin in North Africa*, N. AFR. J., Feb. 21, 2009, <http://tinyurl.com/26tj8v8>.

comprised of multiple importers, shipping companies, and resellers, and the vast majority of these — especially the ICCAT-licensed cargo ships transporting frozen bluefin — are not Japanese, but rather come from the major ICCAT fishing states with large allocated bluefin quota.¹⁵⁴ Yet in large-scale fisheries, both open (high seas) and closed (domestic), there is frequently one relatively unique link in market chain: “the often monopsonistic character of fish processing.”¹⁵⁵ For example, the Mitsubishi Corporation in Japan reportedly controls up to 40 percent of all Japanese Atlantic bluefin imports and is looking to increase its position.¹⁵⁶ As such, the monopsony is more of an oligopsony — a small group of processors that behave in a monopsonistic manner.¹⁵⁷ Studies have also shown that monopsonistic (or oligopsonistic) fish processors actually have a conservation effect on fish stocks, though only when the barriers to entry for fishermen are relatively high.¹⁵⁸

Monopsonistic theory involves a market in which all of the power is concentrated on the demand side, and in which a monopsonist is able to “exercise[] its market power by reducing its purchases of an input, thereby decreasing its input price below competitive levels.”¹⁵⁹ A typical monopsony operates as follows: Suppose that in a certain small closed economy there exist several logging outfits but only one sawmill. In a monopsony situation, the single sawmill will not have to compete with others on price and can thus pay less to the loggers. This will have the subsequent effect of decreasing the number of trees cut and potentially even drive some loggers out of the market. Like monopolies, monopsonies are non-ideal artificial markets that distort true supply and demand. In the United States, for example, the Supreme Court recently held that monopsonies should be treated like monopolies for antitrust

154. For example, of the 405 ships with ICCAT licenses to transport Atlantic bluefin, only four are Japanese flagged. See *ICCAT Record of Vessels*, ICCAT, <http://tinyurl.com/277796d> (last updated Dec. 3, 2010).

155. Kenneth R. Stollery, *Monopsony Processing in an Open-Access Fishery*, 3 *MARINE RES. ECON.* 331, 332 (1987).

156. Martin Hickman, *Revealed: The Bid to Corner World's Bluefin Tuna Market*, *INDEPENDENT (UK)*, June 3, 2009, at 10, <http://tinyurl.com/r9l4pm>.

157. For the sake of this article, monopsonistic and oligopsonistic can be read interchangeably. Both systems work in a similar fashion. See, e.g., Joyce Mazero & Suzie Loonam, *Purchasing Cooperatives: Leveraging a Supply Chain For Competitive Advantage*, 29 *FRANCHISE L.J.* 148, 158 (2010) (“Depending on its size, however, a purchasing cooperative could accumulate so much power (sometimes referred to as oligopsony power) that it is in a position to drive pricing from vendors to an uncompetitive level.”).

158. See Stollery, *supra* note 155, at 348 (reaching this conclusion and citing to a previous study that reached the same conclusion); accord Colin W. Clark & Gordon R. Munro, *Fisheries and the Processing Sector: Some Implications for Management Policy*, 11 *BELL J. ECON.* 603 (1980).

159. Natalie Rosenfelt, *The Verdict on Monopsony*, 20 *LOY. CONSUMER L. REV.* 402, 403–04 (2008).

purposes.¹⁶⁰ However, because monopsonies are generally good for consumers because they tend to depress prices, they have not attracted the same attention as have monopolies.

3. *Problems Unique to the Atlantic Bluefin Market: A Near Monopsony*

The Atlantic bluefin market, on the other hand, is only what I will call a near monopsony, at least when distilled only to states (as opposed to corporations). There is essentially one buyer (Japan) and multiple sellers (ICCAT members). But, because the Atlantic bluefin trade is conducted by private fishermen, importers, and sellers, all of whom are regulated by ICCAT, the potential monopsonistic effect of decreasing price (and thus fishing) is thus mitigated.

But what if Mitsubishi (or another firm) dramatically expanded its operations to where it became the monopsonistic importer, or if several other large corporations took over the entire trade? Or what if, hypothetically, Japan nationalized its entire bluefin sector? In the first scenario, if a single private company (or small group of companies) controlled Japanese bluefin importation, and assuming it operated on basic market principles (and in the absence of political pressure or domestic regulation), it would keep raising domestic prices by decreasing supply (through its new monopolistic power) until it found the point of maximal profit. It would then both import less and, through its converse monopsonistic power, be able to pay fishermen less, further shrinking demand. This would have the effect of allowing this sole firm to manipulate the entire market; it would have both monopolistic (in its sale to consumers) and monopsonistic (in its purchases from fishermen) power. And this combination should, theoretically, decrease both demand *and* supply.

In the second scenario, the Japanese government, under political pressure to keep the price of bluefin as low as possible, would likely demand lower prices from its sellers, the fishermen — similar to the way Walmart reportedly forces its suppliers to constantly cut prices and costs.¹⁶¹ While the slack might be picked up by the other twenty percent of the international import market, Japan's dominance (and demand) likely sets the price, so prices would tumble across the globe. While this might drive developed-country fishermen out of the market, the

160. See *Weyerhaeuser Co. v. Ross-Simmons Hardwood Lumber Co.*, 549 U.S. 312, 325 (2007) (concluding that predatory monopsony powers are legally problematic).

161. See Charles Fishman, *The Walmart You Don't Know*, FAST COMPANY, Dec. 1, 2003, available at <http://tinyurl.com/2d79n5o> (describing the pressure Walmart puts on its suppliers to keep costs down).

question then becomes whether the price is low enough to prevent new entrants as well. Another theoretical advantage to a Japanese national monopsony is that the government conceivably has an interest in long-term bluefin survival, and can thus purchase in quantities that allow for the stocks' survival. And while it opposed the CITES ban and would likely continue to purchase bluefin, Japan's control over its long-term interest may then push it towards importing much less. Finally, a national monopsony would allow Japan to choose its suppliers — and per treaty obligations, it could only buy from registered ICCAT vendors. This might have the added benefit of eliminating the importation of IUU catches, as foreign governments could directly pressure the Japanese government to ensure proper monitoring.

There are downsides, however, to a nationalized monopsony. Not only would the Japanese government be immune from lawsuits, whereas a private monopsonistic company would be potentially liable for violations under a variety of regimes, but the government might also face domestic political pressure to increase supply beyond sustainable levels.

While these two monopsony scenarios remain hypothetical, they do provide a valuable analytical tool and reveal that private management of bluefin stocks, even in the best monopsonistic scenario, might still not prevent overfishing. On the other hand, a complete government takeover of the industry might have substantially greater benefits, but, given Japan's recent history of privatization,¹⁶² this is a relatively unlikely possibility. Yet, the monopsonistic effects of discouraging production should be considered when formulating a solution to the bluefin problem. And, when paired with an ITQ system, they might just allow for a viable — and acceptable — management regime.

E. Assessment of Viable Management Solutions

So far, we have looked at three models in isolation: the two ITQ regimes (auction and allocation of initial quotas) and the monopsony model. The following table summarizes each with regard to the proposed optimal bluefin-management criteria.

From this analysis, it becomes clear that, on paper, the auction ITQ model is preferred (again, from a purely conservationist perspective) to the allocated quota method. There remains, however, the ITQ models' glaring weaknesses: They ignore Japanese demand and may potentially

162. Japan recently privatized Japan Post, the country's largest employer. Hideyuki Sano, *Japan Scales Back Japan Post Privatization*, REUTERS, Mar. 24, 2010, available at <http://tinyurl.com/32qyc0f> (noting, however, that the new government may push back on complete privatization).

TABLE 1. DIFFERENT MANAGEMENT REGIMES

Element	Current ICCAT Quota Allocation	ITQs with Allocated Quotas	ITQs with Auctioned Quotas	Monopsony (state-run)	Monopsony (corporate)
1. Regulated market?	No. Politically driven, no market considerations.	Yes. ICCAT controls quota cap and distribution.	Yes. ICCAT controls quota cap and distribution.	Yes. Single national buyer controls price and demand.	No. Market controls price and demand, but entity could control price.
2. Discourages fishermen and reduces fleet size?	No. Requires domestic quota enforcement, which is de minimis.	Yes, to the extent that fishermen decide to sell quotas.	Yes. Fishing rights flow to anyone willing to pay, even those who may not want to fish.	Yes. Because buyer can force lower prices, some fishermen will leave market.	Yes. Because buyer can force lower prices, some fishermen will leave market.
3. Couples Japanese demand with stock maintenance?	No. Little incentive to limit imports; since stock appears to be crashing, Japan may maximize imports now.	No. Japanese have little market control over fishing.	No. Japan may worry that this system will further erode its control of the stock.	Maybe. Japan has long-term interest in maintaining stock, but politics might force overfishing.	Maybe. If corporation has long-term property rights, it has interest in ensuring long-term viability.
4. Reduces IUU fishing?	No. Japanese demand encourages fishing beyond quotas.	Somewhat. Fishermen have some incentive to protect their quota, but may not have incentives to prevent others from fishing.	Yes. Because parties must pay initially for the right to fish, they have incentive to make sure IUU activity does not occur.	Yes. Japanese government could be held responsible for not buying from licensed fishermen.	Yes. Corporation could be penalized for illegal fishing and would have incentive to go after those harming its monopsony.

restrict fishing so much that Japan would pull out of the system altogether. The question then becomes how to implement an ITQ system while maintaining Japan's involvement and providing a mechanism whereby Japan maintains some stake in the stock's long-term survival. A monopsony — giving Japan near-total control over the market — would theoretically address this weakness and force Japan to bear much of the cost of enforcement.¹⁶³ But how can an open market

163. In fact, many modeling and market proposals are simply ways to force Japan to import

ITQ system be reconciled with a relatively closed-market monopsony? The following discussion addresses several possibilities.

1. *ITQ Auctions Restricted to Fishermen or Fishing Corporations*

In an ideal ITQ system in which fish conservation (beyond the quota limitation) is *not* a concern, Japanese companies will bid up the right to fish beyond what other countries (or their fishermen) are willing to pay. Not only would the Japanese companies have incentives to ensure that IUU fish are not flowing into the country, as this would devalue their investments and profits, but the proceeds from the auction could also be used to monitor IUU activity. Further, because Japanese corporations would possess the fishing rights, Japan would likely remain content with the regime and have no desire to leave ICCAT. On the other hand, if the goal of the system is to reduce fishing below the quota limit, and if conservationists are allowed to bid and are successful in pulling some or all of the quota off the market, Japan might be upset enough to leave the system.

One way to ensure Japanese involvement would thus be to limit the market to active fishermen or corporations. While this would not decrease fishing below the TAC, it would keep the bluefin flowing, maintain Japanese involvement, raise revenue to put towards enforcement (and potentially paying off those fishermen put out of business), and provide incentives to the winning companies to help enforce total quota limits. The new limited supply of bluefin (which, because monitoring and enforcement would theoretically be increased, would actually represent the TAC) would force the supply to those that most demand it: This would likely further increase the percentage of Atlantic bluefin that ends up in Japan, on the assumption that Japanese consumers would demand (and thus pay more for) bluefin than would consumers in other nations. Moreover, because ITQ regimes tend to result in market consolidation¹⁶⁴ — only the large firms are able to bid

less and agree to pay for the costs of enforcement. Given that Japanese demand drives IUU bluefin fishing, Japan should naturally shoulder the costs of enforcement, especially given that it continues to advocate for ICCAT to remain the sole Atlantic bluefin management authority.

164. See, e.g., Katrina Wyman, *From Fur to Fish: Reconsidering the Evolution of Private Property*, 80 N.Y.U. L. REV. 117, 175 n.151, 193 n.202, 209–10 (2005) (noting that “tradable days-at-sea may promote industry consolidation;” “New England fishers long have feared the consolidation that individual transferable quotas likely would bring;” and “opposition to tradable rights may come from third parties ineligible to receive tradable rights under a free distribution, such as suppliers to the fishing industry, who may suffer if their customers in the harvesting sector consolidate after rights are granted”); Jonathan H. Adler, *Conservation Through Collusion; Antitrust as an Obstacle to Marine Resource Conservation*, 61 WASH. & LEE L. REV. 3, 46 (2004) (noting that the introduction of an ITQ system “could well produce some consolidation within the fishery to the detriment of smaller fishing firms”).

high enough, thus driving the smaller firms out business — the quotas would flow either to a few large fishing companies,¹⁶⁵ or else to the few large Japanese importers¹⁶⁶ who could then subcontract out the actual fishing (though this might present additional problems, as subcontracted firms might have an incentive to overfish and then sell only their most valuable catches — but this discussion is beyond the scope of my analysis). Or it could result in a combination of the two. But as the following table demonstrates, any of these scenarios is good for stock management.

As Table 2 demonstrates, all of these results both decrease the size of fishing fleets and provide for relatively easy enforcement, as only a few corporations — fishermen or importers — need to be monitored. The third scenario, in which the quotas are split between a few large fishing and importing companies, may actually be optimal, as regulators can then monitor both the fishing and the importation with greater ease. Moreover, in this scenario, the monopolistic effects of the sellers and the oligopsonist effects of the buyers essentially cancel each other out, resulting in a sort of collusion situation in which the large fishing companies and importers must necessarily work together to maximize profits from consumer sales — and in the process limit supply.

2. *ITQ Auctions Open to Anyone*

The results of a truly open auction cannot necessarily be predicted. Depending on the TAC, and the market value of the fish in Japan, conservation groups or conservation-minded governments may or may not be able to afford to bid for quota. If the prices reach a point where only those who are going to profit from the bluefin trade will bid, then we return to the scenario discussed in the previous section, and Japan remains content that no political roadblocks stand in the way of bluefin importation. On the other hand, if some of the quota is bought by those who do not plan to fish, then Japan might push back or, depending on the level of supply, pull out entirely. So, while an open ITQ auction might likely best decrease the amount of fish caught, it does not necessarily guarantee Japanese participation.

165. The experience of introducing ITQs in the Australian southern bluefin fishery had this effect, as smaller-operation fishermen exited the industry and left it to the bigger fishing concerns. See David Campbell et al., *Individual Transferable Catch Quotas: Australian Experience in the Southern Bluefin Tuna Fishery*, 24 MARINE POL. 109, 111 (2000).

166. See *supra* note 156 and accompanying text.

TABLE 2. POTENTIAL RESULTS OF ITQ SYSTEM LIMITED TO FISHING COMPANIES

	Consolidation of Bluefin Fishing Industry	Importer Oligopsony	Both Fisherman Oligopoly and Importer Oligopsony
Effect on Fishing Fleet	Fleet Reduction.	Fleet Reduction	Fleet reduction.
Why?	Consolidation drives out smaller fishermen. Economies of scale win out.	Importers hold permits and subcontract to fishermen, driving down wages ¹⁶⁷ through monopsony or oligopsony power.	Large fishing companies are most efficient, but have limited sales outlets. Importers can only hire only a few firms. Net result eliminates smaller fishermen.
Where Money Is Made	Fishermen charge importers high amounts to cover cost of quotas.	Importers charge end users high amounts to cover cost of quotas, and can save money by paying fishermen less.	Fisherman and importers forced to work together essentially cancel out, resulting in one large consortium. Costs of quotas passed to consumers.
Ease of Regulation	Easy to monitor the few large fishing concerns.	Easy to monitor the importers, though potentially more difficult to monitor subcontractors.	Easy to monitor the few large fishing concerns and the few large importers.

3. *Other Variations*

There could perhaps exist middle ground between the open and fishermen-only auction systems. For example, the initial auction could be open only to fishing-related corporations, but the secondary market could be open to anyone. This would ensure that fishing companies are not immediately priced out of the market, but would perhaps give them additional incentives not to fish, as they could always sell their quotas later. Alternatively, ICCAT could release two tiers of quotas — one that

167. “Wages” represents the amount that the large importing companies pay to the fishermen to fish the importing companies’ permits. Again, the monopsony effect has the result of depressing wages, and thus the incentives to fish.

only fishing-related corporations can bid for (and which can only be traded among those in the business), and another set with no restrictions. This would ensure that a percentage of the quota is still caught — and that percentage could then be tailored to ensure it was sufficient to maintain Japanese involvement in the management regime. A final variation might establish a fixed quota amount to sell to Japan at a negotiated price, and reserve the rest to sell off in one of the aforementioned methods. This too would guarantee a certain amount of fishing and hopefully secure Japanese involvement.

F. Summary

The principal goal of each property-rights solution discussed herein is threefold: decrease fishing to, at most, the allocated TAC; eliminate IUU fishing; and keep Japan involved in the system. Without Japan's involvement in ICCAT, it is free to purchase Atlantic bluefin from any other country. And, if Japan leaves the organization, many other developing nations might see this as further reason to leave, so that they can now fish and sell unregulated catches directly to Japan. That other nations must follow Japan is an unfortunate necessity. However, it should not preclude the adoption of some sort of management structure that seeks to internalize costs and decrease fishing.

A hybrid ITQ-monopsony model, in which there exists a Japan-dominated market with freely tradable permits, might keep all parties content and simultaneously raise funds to police IUU fishing properly and compensate for the harm to some countries' fishing industries. The problem, however, is how to implement such a regime diplomatically. Yet, as Part IV discusses, Japan may not be overly disinclined to reject some form of property regime, and those nations that supported the CITES ban might be able to convince Japan and institute changes in an ICCAT that is not accustomed to taking drastic measures.

IV. IMPLEMENTING A PROPERTY RIGHTS REGIME

This final Part returns to ICCAT and the Atlantic bluefin, and looks at ways in which an economic management regime may be implemented. First, it dismisses any likelihood of a complete moratorium on bluefin trade/fishing. Second, it touches on further flaws of the RFMO model and on overly inclusive treaty regimes in general. Finally, it argues that, despite these flaws, and because of particular features of the Atlantic bluefin market, there may in fact be a way to implement one of the management regimes discussed in Part III.

A. *Is a Complete Ban Feasible?*

The failure to list the Atlantic bluefin at the 2010 CITES meeting immediately calls into question any hope for a complete ban on fishing in the near future. With the next CITES convention three years away, ICCAT is the only logical treaty institution with the power to extend such a prohibition. But given its history, as well the political maneuvering that guides many of its purportedly scientific decisions, it too does not seem likely to institute such a moratorium. Also, an ICCAT ban would still do little to prevent non-ICCAT nations from fishing the bluefin stock, nor would such a ban be completely enforceable, as individual member states would be required to police their own fishermen — and reports suggest that this is not entirely effective.¹⁶⁸ Moreover, Japan expressed that, had the CITES listing passed, it would take a reservation,¹⁶⁹ which would have allowed it to continue importing Atlantic bluefin from other nations that have similarly opted out of the CITES listing. And CITES does not prevent nations from harvesting for their own domestic markets.¹⁷⁰ Put simply, after the 2010 CITES meeting, any ban on all fishing or trade of Atlantic bluefin is unlikely. While a complete ban (by all nations) on fishing would meet the four criteria discussed in the previous Part, such a move remains extremely unlikely. As such, any political or economic fixes must accept a baseline truth: Atlantic bluefin tuna will still be caught, a market for them will exist, and ICCAT (or some other treaty organization) will likely continue to manage them.

B. *Property Rights and the Inherent Structural Weaknesses of ICCAT and RFMOs*

For economists like Demsetz, property rights and their corresponding markets emerge organically in response to changing societal needs and desires.¹⁷¹ Recently, however, some legal scholars have pushed back

168. See, e.g., Richard Harris, *Lower Tuna Limit Still Too High, Researchers Say*, NATIONAL PUBLIC RADIO, available at <http://tinyurl.com/24bqeyp> (“[F]isheries, particularly around Europe, have a dreadful track record in implementing tuna quotas.”).

169. See, e.g., Yuka Hayashi, *World News: Tokyo Carps About Bluefin Ban*, WALL ST. J., Mar. 9, 2010, at A15, <http://tinyurl.com/2875tu2> (“‘Japan would have no choice but to take a reservation if the CITES vote to include bluefin in Appendix 1,’ Hisashi Endo, a negotiator from Japan’s Fisheries Agency, said . . .”).

170. “An [Appendix] I listing grants species the highest level of protection, allowing for the continuation of a domestic market but banning all imports or exports of animals and their parts on the list.” Gronewold, *supra* note 90. In theory, a Japanese reservation would actually benefit Japanese fishermen, as they would be allowed to fish the Atlantic bluefin for domestic consumption.

171. Demsetz, *supra* note 104, at 350 (“Changes in knowledge result in changes in production functions, market values, and aspirations. New techniques, new ways of doing the same things,

against this thesis, arguing that positivist property regimes are sustainable and, more importantly, beneficial.¹⁷² Cap-and-trade and ITQ regimes can help internalize the negative externalities of pollution or overfishing; the problem, of course, remains in their implementation. Professor Katrina Wyman, in an analysis of the development of various property-right management regimes, notes the spectrum of organizational decisionmaking and rightly points out the difficulty in securing support in a democratic organization for any widespread change.¹⁷³ She then looks at fisheries management and, though focusing on domestic fisheries, notes that “one of the reasons that tradable rights have been slow to develop in [fisheries] is that the political institutions through which these rights typically must be created are highly inclusive.”¹⁷⁴ Most importantly, however, Wyman questions the standard assumption that heterogeneity and large numbers of voters are necessarily barriers to property regime implementation, and she argues that some situations, notably fisheries, call for “private property [to be] formed primarily through political rather than private ordering.”¹⁷⁵ She also notes that, for fisheries organizations, there exist two major impediments to property rights implementation: the existence of organizational vetoes, or choke points, and disagreement over allocation of the sale of property rights proceeds.¹⁷⁶ Any assessment of the viability of pushing some major change through ICCAT must address these considerations.

The Law of the Sea Convention, while permitting free use of the high seas, explicitly “encourages states to cooperate through or to establish subregional or regional fisheries organizations for [conservation] purposes.”¹⁷⁷ RFMOs — independent treaty organizations — thus face a

and doing new things—all invoke harmful and beneficial effects to which society has not been accustomed. It is my thesis . . . that the emergence of new property rights takes place in response to the desires of the interacting persons for adjustment to new benefit-cost possibilities.”).

172. For example, a number of theorists from across the political spectrum see value in cap-and-trade property-rights regimes as a way to curtail the emissions of greenhouse gasses and other pollutants. *See, e.g.*, RICHARD H. THALER & CASS R. SUNSTEIN, *NUDGE* 187–89 (2008) (supporting cap and trade but discussing political roadblocks to its implementation); Jonathan H. Adler, *Betting Blind on ACES*, *NAT’L REV. ONLINE* (June 29, 2009, 12:00 PM), <http://tinyurl.com/2cbaocw> (discussing problems with current attempts at cap-and-trade implementation but noting that, “[i]n theory, cap-and-trade should be a more affordable way to reduce emissions, as less efficient emitters can purchase credits from those capable of reducing emissions at less cost”).

173. *See* Wyman, *supra* note 164, at 134 (“The primary reason why diffuse processes involving multiple decisionmaking bodies give rise to higher decisionmaking costs is that the multiple bodies tend to have different preferences on an issue.”).

174. *Id.* at 135.

175. *Id.* at 150.

176. *See id.* at 225 (discussing two major impediments).

177. FAO, Gen. Fisheries Comm’n for the Mediterranean, *Implementation of the*

dilemma: How can they maximize membership and simultaneously limit nations' autonomy by restricting their fishing (which is really their *raison d'être*¹⁷⁸)? Rather than confront this dilemma, however, ICCAT has taken the easy way out by expanding membership without significantly restricting fishing. Even recently, and even with dramatically lowered quotas, IUU fishing still undermines the organization's efforts.¹⁷⁹

Because RFMOs are treaty organizations, the participation of member states is completely voluntary. At the same time, RFMOs must promote membership, so all fishing states can be part of the same management scheme. Unfortunately, this results in what a pair of economists calls "the new-member threat" — whereby the attempts of "new members to join a fishery generally threatens the long-run viability of the cooperative agreements."¹⁸⁰ And, in an open fishery with many potential markets, very few solutions exist to manage this problem.¹⁸¹ There is also the "problem of possible shifts in relative bargaining strengths over time."¹⁸² As new nations enter a RFMO, they will slowly demand a greater quota share, thus harming the grandfathered interests of earlier members. As mentioned, ICCAT has failed to properly tackle this issue regarding the Atlantic bluefin, even though only a relatively small percentage of members currently have large allocated commercial bluefin quotas.

While ICCAT voting procedures do not permit individual vetoes, the requirement that every ICCAT decision be approved by a majority vote — and that every stock-management or quota-allocation decision requires a *two-thirds* majority¹⁸³ — acts almost like a veto. A handful of

International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing § 2.1 (2005) (by Judith Swan), available at <http://tinyurl.com/2vb6dnt>.

178. See, e.g., Erik Jaap Molenaar, *Regional Fisheries Management Organizations: Issues of Participation, Allocation and Unregulated Fishing*, in OCEANS MANAGEMENT IN THE 21ST CENTURY: INSTITUTIONAL FRAMEWORKS AND RESPONSES 69, 77 (Alex G. Oude Elferink & Donald R. Rothwell eds., 2004) (noting that "a . . . RFMO's core objective is to avoid over-exploitation of the target stocks").

179. For example, in 2007, "the scientific advice was to catch at most 15,000 tonnes of tuna. ICCAT imposed a limit of 30,000 tonnes. The actual catch was 60,000 tonnes. Little wonder the bluefin is vanishing fast." *Fin Times*, ECONOMIST, Mar. 18, 2010, <http://tinyurl.com/2b53wf3>; accord Steve Roest, *Bluefin Tuna Ban Fails, Sea Shepherd Steps Up*, SEA SHEPHERD CONSERVATION SOCIETY (Mar. 24, 2010), <http://tinyurl.com/yac8zrf>.

180. Pedro Pintassilgo & Clara Costa Duarte, *The New-Member Problem in the Cooperative Management of High Seas Fisheries*, 15 MARINE RESOURCES ECON. 361, 363 (2001).

181. See generally *id.* Professors Pintassilgo and Duarte propose a number of potential solutions, including waiting periods, ITQ regimes, and equitable distribution of quota, but they also note that each of these carries significant drawbacks.

182. Veijo Kaitala & Gordon R. Munro, *The Management of High Seas Fisheries*, 8 MARINE RESOURCES ECON. 313, 325 (1993).

183. See ICCAT, *Basic Texts*, at 14 (2007) ("Decisions of the Commission shall be taken by a majority of the members of the Commission."); *id.* at 7 (discussing the two-thirds voting

the forty-eight member states can band together to prevent almost any change.

The large number of members, each with a variety of different economic and social interests, has made ICCAT particularly ungovernable. A recent OECD report on this naturally resulting problem found that as a result of formal mechanisms to implement and enforce rules,

risk has generally been transferred to the stock rather than to members' short-term fishing interests; this, of course, can result in long term costs to all parties. Maintaining high quota levels for stocks that do not have the necessary biological capacity [such as the bluefin] is due to a lack of willingness to see short-term profits reduced in order to maintain the viability of the stock. ICCAT is yet to properly address the root causes of political will by addressing the incentives that govern the actions of states and their vessels¹⁸⁴

Put simply, ICCAT, at present, can do little to influence both Japanese demand for bluefin and fishing nations' export-driven incentives to keep fishing. Yet, a significant reduction in Japanese demand is crucial to save the bluefin, and it would have a much greater impact on the number of fish caught than would an ICCAT TAC decision. But because ICCAT does not currently regulate the market for the fish, only the amount that are (legally) caught, the disconnect between Japanese demand and stock management persists. Until now, for both structural and political reasons, ICCAT has refused to address this itself. It is no wonder then that scientists have come to call ICCAT the International Conspiracy to Catch All Tuna.¹⁸⁵

C. *Implementing a Property Rights Management Regime for Bluefin Tuna*

The institution of a property management regime discussed in Part III can take place either through ICCAT or outside of it, though the threat of working outside the RFMO would likely persuade reluctant nations to sign on and keep it within ICCAT. The key here is to entertain Japanese involvement. If Japan is willing to adopt a property-rights regime, then every other country that fishes or hopes to fish Atlantic

requirement).

184. OECD, STRENGTHENING REGIONAL FISHERIES MANAGEMENT ORGANISATIONS 56 (2009).

185. See, e.g., Nayar, *supra* note 4 ("ICCAT has been criticized for ignoring its scientific advisers when fishing quotas are set, and doing little to prevent illegal fishing. Conservation groups have nicknamed it The International Conspiracy to Catch All Tuna.").

bluefin must sign on, because without access to the Japanese market (or the markets of the other developed nations that import smaller amounts of bluefin), their catch is worth almost nothing. Right now, when “one country or region more aggressively acts to deter IUU fishing, activities are displaced to another which is less willing or able to do so.”¹⁸⁶ But Japanese refusal to accept IUU fish would immediately curtail such behavior. Thus, the question remains: How does the global community ensure Japanese involvement and entice Japan into accepting an ITQ-style property-rights regime?

1. *Japan Could Be Willing to Participate in an ITQ Regime*

Importantly, Japan is not conceptually opposed to property-rights-based management of marine fisheries. In fact, Japan has relied on various forms of property-rights fishery management for centuries.¹⁸⁷ In the past century, however, “the federal government [began to set] broad management policies, particularly biologically determined TACs” for Japanese fisheries, but then granted to local consortiums of fishermen — known as Fishery Cooperative Associations (FCAs) — the “responsibility for managing all of the fishery resources within their jurisdictions.”¹⁸⁸ The FCAs have “a strong historical sense of ownership over the resources within their” territories and were often “formed in response to declining fish stocks.”¹⁸⁹ Some FCAs even attempt to manage stocks of highly migratory fish.¹⁹⁰ FCAs, which manage specific territories, have created Fisheries Management Organizations (FMOs) to manage the fishing of individual species,¹⁹¹ and these organizations have used all sorts of regulations — including all of the usual management techniques, such as days at sea, seasons, fishing gear, and the like — to manage threatened fish stocks.¹⁹²

186. KELLY RIGG ET AL., HALTING IUU FISHING: ENFORCING INTERNATIONAL FISHERIES AGREEMENTS 31 (2003), available at <http://tinyurl.com/244zcvwt>.

187. See H. Uchida & M. Makino, *Japanese Coastal Fishery Co-Management: An Overview*, in CASE STUDIES IN FISHERIES SELF-GOVERNANCE 221, 223 (Ralph Edwin Townsend et al. eds., 2008) (noting that the origins of Japanese fisheries property rights emerged in the seventeenth century when villages were granted “territorial rights” for offshore fishing; these rights then evolved in the twentieth century into fishery cooperative associations).

188. José P. Cancino et al., *TURFs and ITQs: Collective vs. Individual Decision Making*, 22 MARINE RESOURCES ECON. 391, 394 (2007).

189. *Id.* at 395, 396.

190. See *id.* at 397 (noting that six Japanese Fisheries Management Organizations, subsets of Fishery Cooperative Associations, “target[] migratory species”).

191. See *id.* at 393 (“In order to collectively manage the fisheries within their TURFs, members of FCAs have further spontaneously subdivided into smaller and more specialized Fishery Management Organizations (FMOs).”).

192. See Uchida & Makino, *supra* note 187, at 225 tbl.4 (noting the many regulatory methods used by Japanese FMOs).

As demonstrated by Professor Elinor Ostrom¹⁹³ and observers of Japanese coastal fishing arrangements,¹⁹⁴ small territorial consortia can manage a finite commons resource. For example, some Japanese FCAs require that entrants into a fishery have lived in the community for at least a generation,¹⁹⁵ while others have joined together to manage migratory species better.¹⁹⁶ While effective, these systems are designed for coastal and offshore fishing; high-seas, or distant-water fishing, as this Note has shown, requires entirely different management techniques such as ITQs. Fortunately, however, Japan is not categorically opposed to ITQ systems, and has in fact participated in similar arrangements in the past.

One of Japan's other main sources of bluefin imports is the southern bluefin, which spawns (and is thus easily caught) in the waters off Australia. Prior to the formation of the Commission for the Conservation of Southern Bluefin Tuna (CCSBT), an RFMO similar to ICCAT, the Japanese fishing industry actually engaged directly with its Australian counterparts to purchase Australian nationally-allocated quota.¹⁹⁷ At first, Japanese fishermen simply paid Australian fishermen not to fish.¹⁹⁸ Soon, however, Japanese fishermen began to fish leased Australian quota, and by 1993, "Japanese vessels [were fishing] 65% of the Australian quota."¹⁹⁹ Yet the aggregate fishing was still decimating the fishery, and so in 1994, Australia, Japan, and New Zealand created CCSBT,²⁰⁰ which, like ICCAT, assigns bluefin quotas to each member states.

CCSBT has been relatively successful. The member states have, for the most part, limited fishing to their allocated quotas, and when Japan

193. See *supra* notes 117–19 and accompanying text.

194. See generally Cancino et al., *supra* note 188; F.T. Christy, *Common Property Rights: An Alternative to ITQs*, in *USE OF PROPERTY RIGHTS IN FISHERIES MANAGEMENT* 118, 125 (Ross Shotton ed., 2000) (noting how Japanese fishing communities are able to regulate entrants into fisheries through communal and customary mechanisms).

195. See Christy, *supra* note 194, at 124 n.3 (quoting FAO, Fisheries & Aquaculture Dep't, FAO Fisheries Technical Paper 273, *Administration and Conflict Management in Japanese Coastal Fisheries* (1987)).

196. *Id.* at 126 (noting that in one case, "15 separate fishermen's cooperatives organized an overall body to deal with migratory fish").

197. In the absence of a controlling RFMO, individual nations could only regulate, and assign quota to, their own fishermen.

198. See D. Campbell, *Change in Fleet Capacity and Ownership of Harvesting Rights in the Australian Southern Bluefin Tuna Fishery*, in *CASE STUDIES ON THE EFFECTS OF TRANSFERABLE FISHING RIGHTS ON FLEET CAPACITY AND CONCENTRATION OF QUOTA OWNERSHIP*, 134, 141–42 (Ross Shotton ed., 2001). In 1986–1987, Japanese fishermen paid Australian fishermen to fish only 80 percent of their quota, likely to keep prices higher.

199. *Id.* at 144.

200. South Korea, Indonesia, and Taiwan have since joined the organization. See *About the Commission, COMMISSION FOR THE CONSERVATION OF S. BLUEFIN TUNA*, <http://tinyurl.com/274ql8y> (last visited May 12, 2010).

was shown to be exceeding its quota, Australia and New Zealand brought and won a legal action before the International Tribunal for the Law of the Sea to enjoin Japan from exceeding its quota.²⁰¹ Japan has since accepted the ruling.

Each CCSBT member nation can also allocate its quota domestically as it sees fit, and Australia chose to continue its ITQ system, “in which its share of the overall quota was partitioned among various Australian fishing companies.”²⁰² Yet Japan remains involved, as Japanese bluefin fishing concerns now directly fund Australian tuna farming operations; at present, most of the Australian quotas have matriculated to Japanese-backed fishing corporations.²⁰³ Commentators have thus noted the presence of “strong indications that the ITQ system has led to a substantial increase in economic efficiency in the Australian bluefin tuna fishery” as well as “a large reduction in the fleet size.”²⁰⁴ Were Australia to allow foreign operators to directly purchase or lease quotas (instead of funding Australian operations) — an elimination of transaction costs and a move towards greater market efficiency — it is thus likely that Japanese fishing companies would cut out the Australian middlemen altogether and bid directly for quota.

Contrast this now to the situation outside the Pacific. Just as Japanese fishing companies wanted (and continue) to get as close to the actual fishing of the southern bluefin as possible, so too would they want to fish, or at least control the rights to fish, the Atlantic bluefin as well. Simple profit-seeking behavior predicts the eventual removal of as many middlemen as possible, and, to keep costs down, Japanese fishing companies will try to control as much of the industry as possible. This is already occurring. The past decade has seen massive consolidation in the fishing industry, with Japanese corporations at the forefront: Today, the two largest seafood companies in the world, Maruha-Nichiro²⁰⁵ and

201. See Press Release, International Tribunal for the Law of the Sea, Southern Bluefin Tuna Cases: Tribunal Prescribes Provisional Measures (Aug. 27, 2009), available at <http://tinyurl.com/232eult>.

202. James Joseph et al., *Requirements and Alternatives for the Limitation of Fishing Capacity in Tuna Purse-Seine Fleets*, in *METHODOLOGICAL WORKSHOP ON THE MANAGEMENT OF TUNA FISHING CAPACITY* 153, 168 (W.H. Bayfiff & J. Majkowski eds., 2006).

203. See *id.* (“[Since t]he closure of the [pre-CCSBT] Australia-Japan joint-venture [quota sales,] most of Australia’s quota [has shifted] to the SBT grow-out ranching operations off Port Lincoln in South Australia. These farm operations were assisted by Japanese finance and technology.”).

204. RAGNAR ARNASON, *A REVIEW OF INTERNATIONAL EXPERIENCES WITH ITQS* (2010), available at <http://tinyurl.com/268susd>.

205. Maruha-Nichiro controls over twenty other seafood and fishing companies around the world. See *Corporate Profile, Group Companies*, MARUHA NICHIRO HOLDINGS INC., <http://tinyurl.com/2cp2rmb> (last visited Dec. 29, 2010).

Nissui,²⁰⁶ both Japanese, collectively run companies on all five continents, including such well-known names as Gortons and Peter Pan.²⁰⁷ The transition towards an international quota-trading regime would only hasten this process, and thus would likely be supported by Japanese fishing corporations.

2. *Convincing Japan*

In summary, Japanese willingness to engage in an ITQ system as a purchaser of quota, combined with seafood industry consolidation and cultural and market incentives for Japan to control the bluefin trade, all imply a Japanese readiness to expand its Atlantic bluefin operations. A monopsony-inducing ITQ system that allows Japan greater direct control over the Atlantic bluefin stocks would seem to satisfy Japanese political concerns, while a market structure that favors large fishing corporations — the very corporations that are already consolidating and scooping up market share — would incentivize Japanese seafood companies to participate. And it should, in the process, decrease supply and increase costs, which would be good for the bluefin.

The nations that supported the CITES ban — which currently control sixty percent of the ICCAT-allocated bluefin quotas — can further convey to Japan that the current system, replete with IUU fishing, is not in its long-term interest. Threats of continual CITES proposals — with the corresponding bad press — or threats to temporarily halt fishing, might produce enough Japanese uncertainty to get them to the negotiating table.²⁰⁸ Yet this is only the first step.

The difficult part is agreeing on a property-rights regime that Japan will accept. The property regimes discussed in Part III, particularly the ITQ regime that promotes monopsonistic behavior, would likely prompt Japanese companies to take a large share of the market, and thus force their regulator, the Japanese government, to take on greater responsibility for the long-term survival of the stock. In the best case scenario, the importer monopsony, combined with a decreased supply (via tighter and better-enforced quotas) results in a higher consumer price that necessarily decreases demand. In the worst case, at least Japan

206. Similarly, Nissui owns or controls numerous fishing and seafood process companies. See *Corporate Information, Global Network – Overseas*, NISSUI <http://tinyurl.com/24tqb6n> (last visited Dec. 29, 2010).

207. Many other well-known American seafood companies are also owned by foreign conglomerates. For example, Chicken-of-the-Sea Tuna is owned by a Thai corporation, while Bumblebee is run by a Canadian seafood company, which in turn is owned by a Canadian private equity group.

208. If anything, the unpredictability of whether the United States and the European Union will export fish in a given year may have enough of a destructive impact on Japanese importing firms that Japan will agree to a different system to ensure stability.

cannot claim that they merely import the fish and are minimally responsible for catching it. Either way, a property-rights system will, despite potentially adverse social and economic effects, accomplish what ICCAT has so far been unable to do: conserve the Atlantic bluefin.

CONCLUSION

An alternative management solution is clearly needed to solve the Atlantic bluefin commons problem and stave off extinction. As this Note has discussed, the unique features of the bluefin market, particularly the importance of Japanese demand, may actually lend themselves to a viable ITQ property-rights regime that, crucially, would maintain Japanese support. Moreover, a management structure that incorporates supply-curtailling monopsonistic features may have the dual effect of providing Japan (or Japanese corporations) with greater control over the market (and thus further incentivize its involvement) while concurrently decreasing fishing.

Despite its disapproval of the CITES listing, Japan is not opposed to conservation measures, despite domestic pressure to ensure continued bluefin imports. For example, Mitsubishi, the largest Japanese importer, has itself expressed displeasure even with current ICCAT quotas, and advocates a more stringent enforcement regime.²⁰⁹ While such a stand is in part self-serving, as Mitsubishi is positioned to profit from a reduction in supply, it is correspondingly good for bluefin stocks. But as this Note contends, status quo diplomatic management has failed, and more private and market-driven controls over the bluefin trade may provide benefits to the stock, even if they restrict fishing, harm fishing communities, and increase end-user prices. While this is an understandably steep price, the salvation of the Atlantic bluefin renders it necessary.

209. *See* Press Release, Mitsubishi Corporation, Position Statement on Atlantic and Mediterranean Bluefin Tuna (Sep. 18, 2010), <http://tinyurl.com/2cfepxv> (noting that Mitsubishi will comply with ICCAT's scientific assessments as opposed to its actual quota allowances).