

COMMENTS

BATTLE FOR BLUEFIN: THE CONSUMER'S ROLE IN PRESERVING THE ATLANTIC BLUEFIN TUNA

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INTRODUCTION

*“The Japanese have a saying—itadakimasu—which literally translates as, ‘I take your life.’ While today it is a polite thing to say before any meal, the phrase is rooted in an acknowledgement that often, one creature dies for another’s survival.”*¹

Today the Atlantic bluefin is being overfished toward the brink of extinction, not to meet a need for survival, but to merely satisfy an indulgence. This disheartening reality does not have to be the fate of this magnificent fish. Despite many efforts to regulate supply, however, the power to save this species may lie within the consumer.

The bluefin’s survival could potentially hinge on the simple adjustment of your sushi order. You may be aware that your favorite sushi restaurant offers a variety of tuna or *maguro*. Perhaps you have noticed that bluefin is usually highest in price, and maybe you have experienced an order of *toro*, which comes from the belly section of the fish and contains a fat content so high it practically melts in your mouth.²

Many sushi customers may be unaware, however, of the world’s growing concern for the bluefin’s survival.³ Overfishing has caused the bluefin population to decline by at least ninety percent over the past thirty-five years,⁴ yet sushi restaurants continue to ignore the species’ threatened state.⁵ A decrease in consumer demand could save

1. CASSON TRENOR, *SUSTAINABLE SUSHI*, at x (2008).

2. See TREVOR CORSON, *THE ZEN OF FISH* 245-48 (2007) (explaining the different types of meat derived from the bluefin).

3. See, e.g., Heather Horn, *Worries Grow About Extinction of Bluefin Tuna*, ATLANTIC WIRE (June 25, 2010), <http://www.theatlanticwire.com/technology/2010/06/worries-grow-about-extinction-of-bluefin-tuna/23930> (cataloguing recent newspaper and journal articles that describe concerns regarding the bluefin’s survival).

4. See, e.g., Oliver A. Houck, *On the Law of Biodiversity and Ecosystem Management*, 81 MINN. L. REV. 869, 946 (1997), quoted in DAVID HUNTER ET AL., *INTERNATIONAL ENVIRONMENTAL LAW AND POLICY* 777 (Robert C. Clark et al. eds., 4th ed. 2011) (stating in a 1997 article that “bluefin tuna are down 90% since 1975”).

5. *Bluefin Boycott*, CTR. BIOLOGICAL DIVERSITY, http://www.biologicaldiversity.org/species/fish/Atlantic_bluefin_tuna/bluefin_boycott/index.html (last visited Jan. 30, 2011).

this fish,⁶ yet sushi customers continue to request order after order of bluefin tuna.⁷

Conventional means of managing supply have failed to protect the bluefin species from declining numbers.⁸ Bluefin populations are categorized by their geographic location and managed by many organizations.⁹ The International Commission for the Conservation of Atlantic Tunas (ICCAT) oversees the conservation of the Atlantic bluefin.¹⁰ There is widespread concern that ICCAT's efforts have been unsuccessful in protecting this species.¹¹ Additionally, attempts to place the species on the Convention on International Trade in Endangered Species (CITES) Appendix I¹² and the Endangered

6. See Ashley Lillian Erickson, Comment, *Out of Stock: Strengthening International Fishery Regulations to Achieve a Healthier Ocean*, 34 N.C. J. INT'L L. & COM. REG. 281, 321-22 (2008) (briefly noting that reducing consumer demand through consumer education may aid the tuna's survival); Press Release, Ctr. for Biological Diversity, *Boycott Launched to Save Imperiled Bluefin Tuna* (Nov. 30, 2010) [hereinafter *Boycott Launched*], available at http://www.biologicaldiversity.org/news/press_releases/2010/bluefin-boycott-11-30-2010.html (describing the connection between consumer demand and the bluefin's potential extinction); SASHA ISSENBERG, *THE SUSHI ECONOMY* 246 (2007) (demonstrating the power of consumer demand through a successful strategy of empowering the consumer with information of illegally supplied Turkish tuna).

7. See Jessica Belsky, *Innovative Dining Group Serves Up Critically Endangered Bluefin Tuna*, CHANGE.ORG (Mar. 11, 2011), <http://news.change.org/stories/innovative-dining-group-serves-up-critically-endangered-bluefin-tuna> (pointing to restaurants in Los Angeles and Las Vegas that serve bluefin).

8. See discussion *infra* Section I.B-D.

9. *Fish Watch: Atlantic Bluefin Tuna*, NAT'L MARINE FISHERIES SERV., http://www.nmfs.noaa.gov/fishwatch/species/atl_bluefin_tuna.htm (last updated May 20, 2011).

10. INT'L COMMISSION FOR THE CONSERVATION OF ATLANTIC TUNAS, <http://www.iccat.int/en/> (last visited Jan. 30, 2011) [hereinafter ICCAT].

11. See, e.g., 90-Day Finding on a Petition to List Atlantic Bluefin Tuna Under the Endangered Species Act, 75 Fed. Reg. 57,431, 57,434-36 (Sept. 21, 2010) [hereinafter 90-Day Finding] (describing scientific studies that show the species on a path to extinction in relation to ICCAT's conflicting catch quotas).

12. Convention on International Trade in Endangered Species of Wild Fauna and Flora, *opened for signature* March 3, 1973, 993 U.N.T.S. 243 [hereinafter CITES]; Melissa Blue Sky, Comment, *Getting on the List: Politics and Procedural Maneuvering in CITES Appendix I and II Decisions for Commercially Exploited Marine and Timber Species*, SUSTAINABLE DEV. L. & POL'Y, Spring 2010, at 35

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Species List,¹³ have been unsuccessful.¹⁴ Because of these shortfalls, this comment argues that managing consumer demand—particularly by raising consumer awareness—should become a focus of all organizations seeking to save bluefin. Where regulation of supply fails to protect imperiled species, consumer awareness programs may be all that remains between survival and extinction.

Section I of this comment will discuss the species' rare characteristics that give rise to the high demand for bluefin. It also examines efforts made to regulate or halt the supply of bluefin, including ICCAT's recent total allowable catch (TAC) quotas and the latest attempt to place bluefin on the Endangered Species List. Section II explores how consumer demand plays a pivotal role in the bluefin's survival. Section III proposes a solution: through labeling and governmental support, consumers can be made aware of the environmental impact overfishing and the sushi industry has upon bluefin, of the potential health risks bluefin pose to the consumer, and of the many alternatives available. Armed with this knowledge, consumers can make a more informed decision about ordering a species currently in a threatened state.¹⁵ Finally, Section IV discusses the opposition to, and potential problems of, imposing requirements that affect consumer demand.

(examining the difficulties of getting certain animal species on the CITES Appendices I, II, and III, and specifically examining the Atlantic bluefin tuna).

13. Endangered Species Act, 16 U.S.C. §§ 1531-1544 (2006) (establishing the Endangered Species List); CTR. FOR BIOLOGICAL DIVERSITY, PETITION TO LIST THE ATLANTIC BLUEFIN TUNA AS ENDANGERED UNDER THE UNITED STATES ENDANGERED SPECIES ACT at ii-iii (May 24, 2010) [hereinafter CBD PETITION], available at http://www.biologicaldiversity.org/species/fish/Atlantic_bluefin_tuna/pdfs/BluefinTunaPetition-5-24-2010.pdf (petitioning the National Marine Fisheries Service to add bluefin to the Endangered Species List under the Endangered Species Act).

14. See discussion *infra* Sections I.D.1-2.

15. After being informed of conservationists' concern for the bluefin's current state, one blog asked readers where they stood on the issue of serving and ordering bluefin. Sam Sifton, *On Bluefin Tuna in Restaurants*, DINERS JOURNAL (June 15, 2011, 4:26 PM), <http://dinersjournal.blogs.nytimes.com/2011/06/15/on-bluefin-tuna-in-restaurants>. One reader replied "[w]ith all the sustainable seafood choices available to those who can afford to eat bluefin tuna, how on earth is it [sic] justifiable to decimate this species?" Ziba, Comment to *On Bluefin Tuna in Restaurants*, DINERS JOURNAL (June 15, 2011, 4:26 PM), <http://dinersjournal.blogs.nytimes.com/2011/06/15/on-bluefin-tuna-in-restaurants>.

I. THE ATLANTIC BLUEFIN TUNA

The Atlantic bluefin tuna is one of the largest fish in the world.¹⁶ When fully grown, this magnificent fish can reach lengths of fourteen feet and weigh fifteen hundred pounds.¹⁷ This warm-blooded fish can quickly accelerate to extremely fast speeds¹⁸ and has a natural lifespan of over twenty years.¹⁹ This section examines how the bluefin's unique attributes contribute to its imperilment, and how those attributes create difficulties for conservation efforts.

A. *The Prized Gem of the Sushi Market*

At the sushi bar, bluefin is the most prized fish.²⁰ *Akami* is the leaner red meat that comes from areas in the tuna's non-belly quarters, and *toro* is the fatty cut from the belly that makes bluefin such a sought-after commodity.²¹ Although *toro* can be found in any large

16. *Atlantic Bluefin Tuna*, NAT'L GEOGRAPHIC, <http://animals.nationalgeographic.com/animals/fish/bluefin-tuna.html> (last visited Nov. 19, 2011).

17. *Northern Bluefin Tuna*, EARTHJUSTICE, http://earthjustice.org/irreplaceable/northern_bluefin_tuna?gclid=CLPE00Obw6wCFQVlhwodg08QrQ (last visited Nov. 19, 2011).

18. CHARLES CLOVER, *THE END OF THE LINE: HOW OVERFISHING IS CHANGING THE WORLD AND WHAT WE EAT* 26 (2006) (explaining that the bluefin's ability to "accelerate faster than a Porsche" is due to its ability to warm its blood using a mechanism called a "heat exchanger"). The swimming speed of killer whales, one of the bluefin's few predators, has been analyzed in correlation with the bluefin's speed and the "results support the hypothesis that killer whales . . . may not be able to catch larger tuna without using cooperative hunting techniques." ATL. BLUEFIN TUNA STATUS REVIEW TEAM, NAT'L MARINE FISHERIES SERV., NAT'L OCEANIC & ATMOSPHERIC ADMIN., *STATUS REVIEW REPORT OF ATLANTIC BLUEFIN TUNA (THUNNUS THYNNUS)* 55 (2011) [hereinafter NMFS STATUS REVIEW].

19. NMFS STATUS REVIEW, *supra* note 18, at 5 (explaining that recent studies find bluefin can live as long as 40 years).

20. ISSENBERG, *supra* note 6, at 22.

21. *Toro* is derived from the Japanese word *torokeru* that describes something melting. CORSON, *supra* note 2, at 246. Technically there are multiple grades of *toro*, the highest grade being *otoro*, containing up to forty percent fat, is found in the section of the belly near the head of the fish. *Id.* at 247. *Otoro* can be broken down further into two types: (1) *jabara*, or "snakes stomach," is found at the very bottom of the belly, and (2) *shimofuri*, or "fallen frost," is marbled red flesh found in the upper belly. *Id.* *Chutoro* is found in the tail-end and upper sections of the belly and

tuna, the “quintessential *toro* experience” is customarily associated with the bluefin species.²²

An initial hurdle for the bluefin’s survival is that the means of catching and serving the fish do not evoke the same emotional reaction as that of other overfished species. Shark finning, for example, has reduced certain shark populations by up to seventy percent since 1995.²³ Shark finning is the horrifying process of dragging a shark onto a boat, holding it down, and using a knife to slice off the shark’s fins.²⁴ The shark remains alive and squirming as this process takes place.²⁵ After its fins are removed, the shark is shoved back into the ocean.²⁶ Stripped of its fins, the shark is left only to thrash around helplessly, quickly sinking to its death.²⁷ This alarming practice provides ample fuel for conservation agencies in their efforts to raise awareness of the plight of certain shark species.²⁸

While consumers of shark-fin soup encounter horrifying images of maimed and depleted shark populations, bluefin consumers continue to see bluefin as the premier sushi experience and face no such imagery.²⁹ With this positive association, the consumer assumes

contains roughly fifteen to twenty percent fat. *Id.* at 248. *Toro* is not a traditional sushi item as it only became popular after the 1950s. *Id.* at 247.

22. TRENOR, *supra* note 1, at 20.

23. Jennifer O’Brien & Randall Szabo, Review, 2009 *Legislative Review*, 16 ANIMAL L. 371, 377 (2010).

24. DiscoveryNetworks, *What Shark Finning Looks Like*, YOUTUBE (July 29, 2010), <http://www.youtube.com/watch?v=U0qkr2c1e5c>.

25. *Id.*

26. *Id.*

27. *Id.*; see also O’Brien & Szabo, *supra* note 23, at 378-79.

28. DiscoveryNetworks, *supra* note 24; see also HUNTER ET AL., *supra* note 4, at 776 (explaining how disturbing images, such as video of tuna nets wrapped around dead dolphins, proved extremely effective in gathering support for restricting tuna imports linked to dolphin mortality). Environmental groups, like Greenpeace and Earth Island Institute, have captured this type of video footage in order “to publicize the problems of by-catch and high-grading,” which is the wasteful discarding of small or injured fish. *Id.*

29. See Paul Greenberg, *Tuna’s End*, N.Y. TIMES (June 22, 2010), <http://www.nytimes.com/2010/06/27/magazine/27Tuna-t.html?pagewanted=all> (noting that bluefin is “eaten with oblivion” and “without remorse”). The bluefin’s potential extinction correlates with the shift in the bluefin’s value; from practically worthless to “most favored” within a decade’s time. *Id.*

bluefin are plentiful, and the notion that our oceans contain everlasting resources continues to victimize this fish.³⁰ Thus, the consumer goes on uninformed and unaware of the bluefin's threatened state, and bluefin continue to be revered as the prized gem of the sushi market.³¹

A high demand for bluefin sushi and sashimi,³² accompanied by the imageless nature of bluefin's potential demise, has caused its numbers to plummet.³³ Current efforts to regulate overfishing have

30. See *id.*; Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243, 1245 (1968), available at <http://www.sciencemag.org/content/162/3859/1243.full.pdf> (describing many causes of environmental degradation). Fish have long been victims of the notion that maximizing short-term profit often results in long-term economic and environmental loss. *Id.* “[T]he oceans of the world continue to suffer from the survival of the philosophy of the commons. Maritime nations still respond automatically to the shibboleth of the ‘freedom of the seas.’ Professing to believe in the ‘inexhaustible resources of the oceans,’ they bring species after species of fish and whales closer to extinction.” *Id.* (footnote omitted).

31. Environmentalists across the world have made many efforts to spread information regarding bluefin tuna in order to reduce consumer demand. For example, Greenpeace has approached Nobu restaurants requesting the endangered state of the bluefin be noted on their menu. Casson Trenor, *Save the Bluefin Tuna*, GREENPEACE (June 8, 2009, 11:41 AM), <http://www.greenpeace.org/usa/en/news-and-blogs/campaign-blog/save-the-bluefin-tuna/blog/25618>. Nobu did in fact change their London menu to include the notations: “Bluefin Tuna is an environmentally threatened species” and “please ask your server for an alternative”; however, it is only the London menu that includes this detail while the remaining twenty-two locations continue to offer bluefin without the disclaimer. Compare, e.g., *Nobu London Sushi & Sashimi*, NOBU, <http://www.noburestaurants.com/london/menus/dinner/sushi-sashimi> (last visited Mar. 20, 2011), with *Nobu New York Cold Dishes*, NOBU, <http://www.noburestaurants.com/new-york/menus/dinner/cold-dishes> (last visited Mar. 20, 2011). The Center for Biological Diversity petitioned the National Marine Fisheries Service to place the Atlantic bluefin tuna under the Endangered Species Act and, in addition, has begun a “Bluefin Boycott.” Boycott Launched, *supra* note 6. The boycott has encouraged over twenty thousand people and restaurants to take a pledge to not eat or serve bluefin and to boycott restaurants that advertise it on their menu. *Bluefin Boycott*, *supra* note 5.

32. Sushi comes in many styles including *nigiri* sushi, which is sliced fish or various other ingredients over rice, and *maki* sushi, which is rolled sushi. *The Popular Japanese Dishes Sushi and Sashimi*, JAPANESE SUSHI, <http://www.japanese-sushi.net/sushi-vs-sashimi.htm> (last visited Sept. 9, 2011). Sashimi, on the other hand, is not served with rice and often plated with extreme care and select garnishes. *Id.*

33. See Seth Korman, *International Management of a High Seas Fishery: Political and Property-Rights Solutions and the Atlantic Bluefin*, 51 VA. J. INT'L L. 697, 716 (2011) (citing *Monaco Seeks Global Bluefin Tuna Trade Ban*, AFP (July

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focused on managing the supply of bluefin entering the market.³⁴ Unfortunately, these efforts have failed to protect the species from a drastic decline in numbers.

B. Current Regulation

Due to the bluefin's migratory nature, a high level of international cooperation is required for regulatory efforts to be effective.³⁵ Bluefin are a highly migratory species with streamlined bodies that allow the fish to travel up to fifty miles per hour and cross oceans in just a few weeks' time.³⁶ Unfortunately, the migratory patterns of bluefin, combined with a tendency to travel near the water's surface,³⁷ make it easy for fishing fleets to track and target them.³⁸ The level of international cooperation necessary to manage this species has resulted in many difficulties regarding regulatory oversight.³⁹

There are three main species of bluefin tuna: the Southern bluefin, the Pacific bluefin, and the Atlantic bluefin.⁴⁰ All three species are

28, 2009), <http://tinyurl.com/2d42ztv> (quoting Maria Jose Cornax, Oceana marine scientist, explaining that one of the effects the proposed CITES listing would have had on the bluefin was eliminating "the main cause of overfishing: high sushi and sashimi market demand of countries such as Japan or United States").

34. *See generally id.* (analyzing current management regimes and proposing various property-rights regimes as solutions to the problem of bluefin overfishing and mismanagement).

35. *Fish Watch: Atlantic Bluefin Tuna*, *supra* note 9.

36. *See id.*; *Boycott Launched*, *supra* note 6.

37. NMFS STATUS REVIEW, *supra* note 18, at 3-4.

38. JESSE MARSH & STEPHANIE DANNER, MONTEREY BAY AQUARIUM, SEAFOOD WATCH, SEAFOOD REPORT: BLUEFIN TUNA 24 (Oct. 7, 2010), available at http://www.montereybayaquarium.org/cr/cr_seafoodwatch/content/media/MBA_SeafoodWatch_BluefinTunaReport.pdf.

39. *Id.* at 62-68 (criticizing the effectiveness of several national and international efforts to conserve bluefin); *see also Bluefin Boycott*, *supra* note 5 (listing the bluefin's "habit of crossing international boundaries" as a cause of the species' decline).

40. MARSH & DANNER, *supra* note 38, at 68 & tbl.10. The Atlantic bluefin is typically further categorized as the Western Atlantic bluefin, "believed to spawn primarily from April to June in the Gulf of Mexico," and the Eastern Atlantic Bluefin, spawning from late May to July in several locations throughout the Mediterranean. NMFS STATUS REVIEW, *supra* note 18, at 11-12.

being overfished to meet immediate demand;⁴¹ they face additional depletion by ranching operations that catch smaller bluefin for fattening.⁴² The conservation of each species is overseen by regional fisheries management organizations (RFMOs) around the world.⁴³

The International Convention for the Conservation of Atlantic Tunas is a multinational agreement created to promote the conservation of the Atlantic bluefin tuna and related species.⁴⁴ The Convention established the International Commission for the Conservation of Atlantic Tunas (ICCAT), which compiles scientific research, including stock assessments for the Atlantic species.⁴⁵ Relying on its research, ICCAT publishes recommendations, such as total allowable catch (TAC) quotas for all member nations to follow.⁴⁶

41. JACEK MAJKOWSKI, FISHERIES & AQUACULTURE DEP'T, UNITED NATIONS FOOD & AGRICULTURE ORG., FAO FISHERIES TECHNICAL PAPER NO. 483, GLOBAL FISHERY RESOURCES OF TUNA AND TUNA-LIKE SPECIES, at vii, 26 tbl. (2007) (listing Pacific bluefin as "fully exploited," the Eastern Atlantic bluefin as "overexploited," and the Southern and Western Atlantic bluefin as "depleted"); *see also* Hillel Wright, *Are Japan's Fish Lovers Eating Tuna to Extinction?*, JAPAN TIMES ONLINE (Jan. 9, 2011), <http://search.japantimes.co.jp/cgi-bin/fl20110109x1.html> (explaining the overall results of population assessments of government and regulatory authorities as finding that: (1) Atlantic bluefin are endangered to critically endangered; (2) Pacific bluefin are fully exploited to overexploited; and (3) Southern bluefin are overexploited to possibly endangered).

42. *Seafood Watch: Bluefin Tuna*, MONTEREY BAY AQUARIUM, http://www.montereybayaquarium.org/cr/SeafoodWatch/web/sfw_factsheet.aspx?fid=60 (last visited Nov. 19, 2011).

43. Christine Goepf Towberman, Article, *Fishing for a Solution: The Role of the United States in Preventing Collapse of the Eastern Atlantic Bluefin Fishery*, 38 ENVTL. L. REP. NEWS & ANALYSIS 10,102, 10,103 (2008). For a discussion of the world's RFMOs, including an overview of ICCAT, *see* Suzanne Iudicello, *International Fisheries Management*, in OCEAN AND COASTAL LAW AND POLICY 303 (Donald C. Baur et al. eds., 2008).

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

45. International Convention for the Conservation of Atlantic Tunas, *supra* note 44, art. IV; ICCAT, *supra* note 10. It is worth noting that ICCAT's scientific advice is not from an independent source, but from its member-country's scientists. Iudicello, *supra* note 43, at 315.

46. International Convention for the Conservation of Atlantic Tunas, *supra* note 44, art. VIII; *see also* 1 INT'L COMM'N FOR THE CONSERVATION OF ATL. TUNAS, REP. FOR BIENNIAL PERIOD, 2010-2011, Part I (2010), 189-92 (2011) [hereinafter ICCAT REPORT], *available at* <http://www.iccat.int/documents/bienrep/>

TAC quotas are an annual limit on the number of fish of the respective species that each member nation may take.⁴⁷

ICCAT's regulatory efforts face three initial difficulties. First, the Commission's catch quotas are only recommendations that member nations may object to,⁴⁸ and if accepted, ICCAT must rely on its member nations to implement those recommendations.⁴⁹ Second, illegal, unregulated, and underreported (IUU) fishing undoubtedly increases the actual total catch amounts.⁵⁰ Third, critics argue that ICCAT adds to the problem by setting catch quotas at levels so high that even its own scientists have objections.⁵¹

rep_en_10-11_i_1.pdf (providing recommended TAC quotas regarding the Atlantic bluefin).

47. ICCAT REPORT, *supra* note 46 at 194-96 (discussing the conditions attached to total allowable catch quotas).

48. International Convention for the Conservation of Atlantic Tunas, *supra* note 44, art. VIII, paras. 2-3; Christopher J. Carr, *Recent Developments in Compliance and Enforcement for International Fisheries*, 24 *ECOLOGY L.Q.* 847, 856 (1997); *see also* NMFS STATUS REVIEW, *supra* note 18, at 78 (describing how objecting nations are not bound by ICCAT's recommendation). "ICCAT recommendations usually become effective 6 months after official transmission to the parties"; however, when nations object, as did Algeria, Turkey, and Norway in 2011, implementation of ICCAT's recommendations (even with non-objecting nations) can be further delayed for months. *Id.* *See also* International Convention for the Conservation of Atlantic Tunas, *supra* note 44, art. VIII, para. 3(d-f). Recommendations shall *not* become effective upon any Contracting Party that objects to the recommendation in accordance with article VIII of the treaty. *Id.* art. VIII, para. 3(e).

49. Iudicello, *supra* note 43, at 316.

50. Towberman, *supra* note 43, at 10104. Illegal, unregulated, and underreported fishing occurs when a member or non-member of a management organization does not follow fishery management regulations, such as catch quotas. *Id.* This type of fishing not only affects the accuracy of important information, increasing the risk of overfishing, but it also results in a competitive disadvantage to those fishing vessels that do follow the rules. *Id.* Therefore, regulation will continue at a disadvantage, as ICCAT cannot force its proposed regulations on non-member nations. *Id.* ICCAT does, however, have authority to impose trade sanctions. *See* International Convention for the Conservation of Atlantic Tunas, *supra* note 44, art. IX, paras. 1,3; HUNTER ET AL., *supra* note 4, at 786. For example, in 2005 Taiwan received a \$100 million dollar sanction for exceeding its quota of bigeye tuna. *Id.* In addition, ICCAT reduced Taiwan's catch quota for the following year from 16,500 to 4,600 tons. *Id.*

51. Blue Sky, *supra* note 12, at 37; CLOVER, *supra* note 18, at 35. "The history of ICCAT decisions on bluefin tuna and swordfish illustrates a continued

In November 2010, ICCAT held its seventeenth extraordinary meeting to formulate TAC quotas for 2011.⁵² The Commission also laid out a new approach to strengthening member compliance with management regulations.⁵³ Violations of the Commission's regulations will trigger a new warning system. First, ICCAT's Compliance Committee will send two notices, each in the form of a letter.⁵⁴ After the two notices, ICCAT may impose fines, reduce fishing allocations, or suspend voting privileges.⁵⁵ With these new procedures and other monitoring guidelines, ICCAT predicts a sixty-seven percent chance of full recovery for the eastern Atlantic species by 2022.⁵⁶

The 2011 recommendations were met by extreme opposition.⁵⁷ The 2011 TAC quotas amount to a mere four percent reduction from the 2010 quotas, and are argued to inevitably result in continued depletion.⁵⁸ Critics have called the 2011 TAC recommendations a "massive failure."⁵⁹ ICCAT's own scientific advisory committee claims improving chances of recovery would require ICCAT to cut the 2011 TAC quotas in half.⁶⁰

practice of setting catch levels in response to demands of fishing nations, regardless of recommendations of its scientific committee." Iudicello, *supra* note 43, at 316.

52. Press Release, Int'l Comm'n for the Conservation of the Atl. Tuna, 17th Extraordinary Meeting of ICCAT (Nov. 27, 2010), http://www.iccat.int/Documents/Meetings/COMM2010/COMM2010_PressRelease_EN.pdf [hereinafter 17th Extraordinary Meeting].

53. ICCAT REPORT, *supra* note 46, at 306-07.

54. *Id.*

55. *See id.*

56. 17th Extraordinary Meeting, *supra* note 52.

57. Press Release, Oceana, ICCAT Says I "Can't" (Nov. 27, 2010), <http://na.oceana.org/en/news-media/press-center/press-releases/iccat-says-i-can-t> [hereinafter ICCAT Says I "Can't"].

58. *Id.* *But see* NMFS STATUS REVIEW, *supra* note 18, at 61, 66 (finding the new TAC quotas will improve the conditions of both the western and eastern stock).

59. ICCAT Says I "Can't," *supra* note 57.

60. Erik Stokstad, *Sharks Fare Better than Tuna at Conservation Meeting*, SCI. INSIDER (Nov. 29, 2010, 2:34 PM), <http://news.sciencemag.org/scienceinsider/2010/11/sharks-fare-better-than-tuna-at.html>. ICCAT scientists reported that the 13,500 ton quota must be cut to 6,000 tons to improve recovery. *Id.*

With many experts urging ICCAT to lower its quotas, one may wonder why the Commission continues to recommend such controversial numbers. One author asserts that “ICCAT is mostly a college of vested interests.”⁶¹ Conservationists suggest that political restraints prevent ICCAT from reaching agreeable quotas.⁶² Thus, the high quotas may result from political compromise, as “each country has its own ideas about how to tackle the problem of bluefin overfishing.”⁶³

In a continuing cycle, ICCAT recommends annual TAC quotas and concerned scientific and environmental organizations initiate proposals to lower those quotas.⁶⁴ ICCAT continues to readjust its recommendations,⁶⁵ and ICCAT’s critics persistently raise concerns. Some critics even suggest a complete ban on the catch and trade of bluefin altogether.⁶⁶ This cycle of conservation efforts has been referred to as the “slow-moving crash of an environmental disaster.”⁶⁷

61. CLOVER, *supra* note 18, at 36.

62. *Id.*; Glen Hodgson, *Politics Plays a Big Part in Preservation*, COTTAGECOUNTRYNOW.CA (June 17, 2011), <http://www.cottagecountrynow.ca/community/environment/article/1029854--politics-plays-a-big-part-in-preservation>.

63. CLOVER, *supra* note 18, at 36.

64. *See* Greenberg, *supra* note 29 (discussing the battle between ICCAT and conservationists over set catch limits in 2008); Carr, *supra* note 48, at 856-58 (describing ICCAT’s ineffective regulatory measures as the cause of its poor reputation in the 1990s and efforts to improve ICCAT’s efforts); ICCAT Says I “Can’t,” *supra* note 57 (criticizing ICCAT’s 2010 recommendations).

65. For a historic overview of ICCAT’s yearly TAC quotas, see NMFS STATUS REVIEW, *supra* note 18, at 59-66.

66. *See* Conference of the Parties, Convention on Int’l Trade in Endangered Species of Fauna and Flora, *Consideration of Proposals for Amendment of Appendices I and II*, CITES Doc. CoP15 Prop. 19 (2010), available at <http://www.cites.org/eng/cop/15/prop/E-15-Prop-19.pdf>. In 2008, TAC quotas were roughly double that suggested by ICCAT’s own scientists and readjusted only after conservationists protested. Greenberg, *supra* note 29. The battle between ICCAT and conservationists over set catch limits has been long and ongoing. *Id.* By 2009, “environmentalists had come to home in on the historic mismanagement of Atlantic bluefin . . . arguing that a simple reduction in catch quotas . . . was not enough—that in fact a zero-catch quota was the only thing that would stave off the fish’s extinction.” *Id.* *See also infra* Section I.D.

67. Press Release, Greenpeace, ICCAT Puts Bluefin Tuna on Death Row (Nov. 27, 2010), <http://www.greenpeace.org/international/en/press/releases/ICCAT-Puts-Bluefin-Tuna-on-Death-Row> (quoting Oliver Knowles, Greenpeace International oceans campaigner).

In order to break this cycle, a new approach to bluefin conservation must be taken.⁶⁸

C. A National Impact

The United States has previously succeeded in restoring a threatened fish species. In the 1970s, the striped bass faced a

68. The Southern Bluefin Tuna cases that arose out of the Law of the Sea Convention (LOS Convention) and the 1993 Convention for the Conservation of Southern Bluefin Tuna (CCSBT) suggest the possibility of international dispute settlement mechanisms as one way to help with difficulties involved in enforcing regulations set by RMFOs. United Nations Convention on the Law of the Sea, *open for signature* Dec. 10, 1982, U.N.T.S. 397; Convention for the Conservation of Southern Bluefin Tuna, *opened for signature* May 10, 1993, 1819 U.N.T.S. 359 [hereinafter CCSBT]. Like ICCAT, The Commission for the Conservation of Southern Bluefin Tuna, established under the CCSBT, is the intergovernmental organization that manages the Southern Bluefin Tuna. CCSBT, *supra* note 68; COMMISSION FOR THE CONSERVATION OF S. BLUEFIN TUNA, <http://www.ccsbt.org/site/index.php> (last visited Oct. 23, 2011). In 1998, Australia and New Zealand argued for provisional measures to be prescribed by the International Tribunal for the Law of the Sea (ITLOS) after Japan unilaterally increased the total catch quota established by the Commission. Southern Bluefin Tuna Cases (Nos. 3 and 4) (New Zealand v. Japan; Australia v. Japan), Case Nos. 3 and 4, Order of Aug. 27, 1999, 3 ITLOS Rep. 280, *available at* https://www.itlos.org/fileadmin/itlos/documents/cases/case_no_3_4/Order.27.08.99.E.pdf. Later, an arbitral tribunal constituted pursuant to Annex VII of the LOS Convention found it lacked jurisdiction due to a provision in the CCSBT that barred any further procedure of the case under the LOS Convention. Southern Bluefin Tuna Case (Australia & New Zealand v. Japan), 119 I.L.R. 508 (Arbitration Tribunal constituted under Annex VII of the United Nations Convention on the Law of the Sea 2000), *available at* http://icsid.worldbank.org/ICSID/FrontServlet?requestType=ICSIDPublicationsRH&actionVal=ViewAnnouncePDF&AnnouncementType=archive&AnnounceNo=7_10.pdf. Although the arbitral tribunal excluded the use of the LOS Convention's dispute settlement mechanisms in the Southern Bluefin Tuna case, Bernard H. Oxman suggests the mechanisms are not foreclosed from use in future cases. Bernard H. Oxman, *Complementary Agreements and Compulsory Jurisdiction*, 95 AM. J. INT'L L. 277, 309 (2001). For a discussion of the Southern Bluefin Tuna cases and relevant background on the dispute settlement system of the United Nations Convention on the Law of the Sea, see MARK WESTON JANIS & JOHN E. NOYES, INTERNATIONAL LAW: CASES AND COMMENTARY 364-72 (4th ed. 2011) and Oxman, *supra*.

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devastating decline in population.⁶⁹ In response, scientists conducted emergency studies and the results prompted Congress to pass the Atlantic Striped Bass Conservation Act.⁷⁰ This action resulted in an encouraging recovery of the population. In 1982, the striped bass numbered less than ten million.⁷¹ At its peak, in 2004, the species reached a population of 70.8 million.⁷² Once highly overfished, the striped bass have reached sustainable numbers due to the implementation of strict management controls.⁷³

Today, there are similar management controls over bluefin populations within the United States, yet bluefin numbers continue to dwindle.⁷⁴ The Magnuson Stevens Fishery Conservation and Management Act (MSA) established governmental control over all fisheries⁷⁵ within the nation's exclusive economic zone.⁷⁶ Fear of overfishing in U.S. waters resulted in passage of the MSA.⁷⁷ The Act

69. *Fish Watch: Atlantic Striped Bass*, NAT'L MARINE FISHERIES SERV., http://www.nmfs.noaa.gov/fishwatch/species/atl_stripped_bass.htm (last updated June 24, 2010).

70. *Id.* See generally Atlantic Striped Bass Conservation Act, Pub. L. No. 98-613, 98 Stat. 3187 (1984) (codified as amended at 16 U.S.C. §§ 5151-5158 (2006)).

71. CHARLTON GODWIN ET AL., ATL. STATES MARINE FISHERIES COMM'N, 2010 REVIEW OF THE ATLANTIC STATES MARINE FISHERIES COMMISSION FISHERY MANAGEMENT PLAN FOR ATLANTIC STRIPED BASS 2009 FISHING YEAR 17 fig.1. (2010), available at <http://www.asmf.org> (follow "Managed Species" hyperlink; then follow "Striped Bass" hyperlink; then follow "FMP Reviews 2010" hyperlink).

72. *Id.* at 4.

73. *Fish Watch: Atlantic Striped Bass*, *supra* note 69.

74. See Houck, *supra* note 4, at 946-47.

75. A fishery is a defined unit where fish are commercially harvested. Patricia A. Moyer, Note, *Private Certification Versus Public Certification in the International Environmental Arena: The Marine Stewardship Council and Marine Eco-Label Japan Fisheries Certification Schemes as Case Studies*, 43 VAND. J. TRANSNAT'L L. 533, 535 (2010).

76. See generally The Magnuson Stevens Fishery Conservation Act, 16 U.S.C. §§ 1801-1884 (2011); see also HUNTER ET AL., *supra* note 4, at 747. An exclusive economic zone (EEZ) is a jurisdictional zone reaching 200 nautical miles off the shoreline of a coastal country. *Id.* Within the EEZ the United States has, inter alia, sovereign rights over marine life and conservation of the marine environment. Erickson, *supra* note 6, at 293.

77. HUNTER ET AL., *supra* note 4, at 777. For an inclusive explanation of the substance and process of the MSA, see Josh Eagle, *Domestic Fishery Management*, in OCEAN AND COASTAL LAW AND POLICY 275 (Donald C. Baur et al. eds., 2008).

provides the National Marine Fisheries Service (NMFS), through the Secretary of Commerce, the authority to do what is necessary to ensure the conservation of the Atlantic bluefin.⁷⁸ The Atlantic Tunas Convention Act also authorizes the NMFS to implement ICCAT's recommended TAC quotas within the United States.⁷⁹

Despite this statutory framework, U.S. management of the North American associated stock has contributed to a ninety percent decline in the bluefin population since 1975.⁸⁰ This decline demonstrates an inability to manage and sustain this species through the regulation of supply.⁸¹ Accordingly, the continued decline in bluefin numbers indicates a need for change in the U.S. approach to conservation of this species.

In the United States, the bluefin population now faces additional strain caused by British Petroleum's (BP) Deepwater Horizon oil spill.⁸² In 2010, BP's oil rig collapsed and a damaged well spewed oil into the Gulf of Mexico for eighty-six days.⁸³ At the time of the spill, the few remaining bluefin of the North American stock were preparing

78. See 16 U.S.C. §1812(a) (2007) ("The United States shall cooperate directly or through appropriate international organizations with those nations involved in fisheries for highly migratory species with a view to ensuring conservation . . ."). NMFS operates to protect living marine resources through conservation and management that is scientifically based. *About National Marine Fisheries Service*, NAT'L MARINE FISHERIES SERV., NAT'L OCEANIC & ATMOSPHERIC ADMIN., <http://www.nmfs.noaa.gov/aboutus.htm> (last visited Mar. 24, 2011).

79. See 16 U.S.C. §§ 971c, 971f (2006); Patrick A. Nickler, Comment, *A Tragedy of the Commons in Coastal Fisheries: Contending Prescriptions for Conservation, and the Case of the Atlantic Bluefin Tuna*, 26 B.C. ENVTL. AFF. L. REV. 549, 561 (1999) (noting that the NMFS uses its authority to regulate the U.S. fishing industry by binding it to ICCAT's recommended TAC quotas).

80. See Houck, *supra* note 4, at 946.

81. *But see, e.g.*, NMFS STATUS REVIEW, *supra* note 18, at 69 (concluding that, based on several factors, the various "regulatory mechanisms" in place today "are sufficiently protective of bluefin tuna"). It is worth noting that one of the factors the status review team credits for its decision that ICCAT should be capable of continuing its management efforts successfully is the "significant public attention bluefin tuna is receiving," which the review team assumes is "not expected to abate." *Id.*

82. Greenberg, *supra* note 29.

83. Jenny Marder, *One Year Later, Where Has All the Oil Gone?*, PBS.ORG (Apr. 20, 2011), <http://www.pbs.org/newshour/rundown/2011/04/one-year-later-where-has-all-the-oil-gone.html>.

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to mate.⁸⁴ The Atlantic bluefin spawn in only two areas of the world and one of those areas is the Gulf of Mexico.⁸⁵ The Center for Biological Diversity (CBD) contends that because the oil spill occurred during spawning season, it is likely to have long-term effects on the species and could possibly “devastate the population.”⁸⁶ Although the bluefin’s extinction is a global issue it has been suggested that the United States has the ability to give bluefin a chance at survival.⁸⁷ If the Atlantic bluefin withstand the effects of BP’s oil spill, allowing the population to migrate along the Eastern Seaboard free of constraint could provide a path toward recovery.⁸⁸ However, as this comment suggests, the prospect of releasing bluefin from the pressures of overfishing will require different tactics than those currently in use.

D. Alternative Protection

In response to the continual decline in bluefin numbers, governments and various organizations have explored other paths to preserving the species. Multiple attempts have been made to protect the Atlantic bluefin under both the Convention on International Trade in Endangered Species and the Endangered Species Act.⁸⁹

84. Greenberg, *supra* note 29.

85. *Id.*; see also MARSH & DANNER, *supra* note 38, at 62-68; *Bluefin Boycott*, *supra* note 5.

86. CBD PETITION, *supra* note 13, at 27. *But see* NMFS STATUS REVIEW, *supra* note 18, at 50 (finding, although all relevant information is not available, the assumed twenty percent reduction rate in bluefin larva caused by the oil spill “will likely result in less than a 4 percent reduction in future spawning biomass”).

87. The United States is one of three major harvesters of the western Atlantic stock; the other two are Canada and Japan. NMFS STATUS REVIEW, *supra* note 18, at 31.

88. Michael Cimarusti, *Make Love, Not Sushi, with Bluefin Tuna*, ATLANTIC (July 14, 2010), <http://www.theatlantic.com/life/archive/2010/07/make-love-not-sushi-with-bluefin-tuna/59688>.

89. See Blue Sky, *supra* note 12, at 37; Lisa Abend, *Why a Proposed Ban on Bluefin Tuna Fishing Failed*, TIME (Mar. 18, 2010), <http://www.time.com/time/health/article/0,8599,1973374,00.html>; CBD PETITION, *supra* note 13, at ii-iii.

1. Convention on International Trade in Endangered Species

Historically, the Convention on International Trade in Endangered Species (CITES) has been instrumental in limiting trade of plants and animals at risk of extinction.⁹⁰ However, it was not until the early 1990s that conservationists turned to CITES to protect certain commercial fish species as an alternative to the poor management of those species.⁹¹ In 1992, Sweden proposed placing the Atlantic bluefin on CITES Appendix I.⁹² Listing a species on Appendix I prohibits trade of that species.⁹³ Countries opposing the listing argued that ICCAT's management would improve numbers and the proposal was defeated.⁹⁴

In 2009, the Principality of Monaco drafted a similar proposal.⁹⁵ Environmentalists referred to the new proposal as a "golden opportunity" to put an end to the overfishing of bluefin.⁹⁶ Unfortunately, too many governments let the opportunity pass, and the opposition again defeated the proposal.⁹⁷ A truly sustainable future for this fish is difficult to achieve as the bluefin market is extremely lucrative and political pressures from fishing interests are great.⁹⁸

90. David K. Schorr, *Trade in Fish and Fisheries Products*, in OCEAN AND COASTAL LAW AND POLICY 333, 357 (Donald C. Baur et al. eds., 2008).

91. *Id.*

92. Blue Sky, *supra* note 12, at 37.

93. *Id.* at 35; CITES, *supra* note 12, arts. II & III (providing that trade of species listed on Appendix I "must be subject to particularly strict regulation" requiring certification that such trade will "not be detrimental to the survival of the species").

94. Blue Sky, *supra* note 12, at 37.

95. Conference of the Parties, Convention on Int'l Trade in Endangered Species of Fauna and Flora, *Supplementary Information on the Proposal to Include the Atlantic Bluefin Tuna (Thunnus Thynnus Linnaeus 1758) on Appendix I on CITES in Accordance with Article II 1 of the Convention*, CITES Doc. CoP15 Inf. 12 (2010), available at <http://www.cites.org/common/cop/15/inf/E15i-12.pdf>; see also Abend, *supra* note 89 (discussing why the proposal failed).

96. Richard Black, *Bluefin Tuna Ban Proposal Meets Rejection*, BBC (Mar, 18, 2010), <http://news.bbc.co.uk/2/hi/8574775.stm> (quoting Sue Lieberman, director of international policy at the Pew Environment Group).

97. *Id.*

98. *See id.*

2. *Endangered Species Act*

One month after opposition nations voted down the 2009 Appendix I proposal, the added pressure of the BP oil spill created an opportunity for the CBD to take another approach to protect the species.⁹⁹ On May 24, 2010, the CBD petitioned the Secretary of Commerce, through the NMFS, to place the Atlantic bluefin tuna on the Endangered Species List.¹⁰⁰ The petition presented substantial scientific research supporting the Atlantic bluefin's candidacy for listing.¹⁰¹ If protected under Endangered Species Act (ESA), civil and criminal penalties would follow the importing, exporting, taking, and selling of bluefin in the United States.¹⁰²

Unfortunately, on May 27, 2011, the National Oceanic and Atmospheric Administration (NOAA) announced "that Atlantic bluefin tuna currently do not warrant species protection under the Endangered Species Act."¹⁰³ This decision was partially based on the assumption that ICCAT's new TAC quotas would be followed by all member nations.¹⁰⁴ Earlier that same month, however, the World Wildlife Fund (WWF) and Greenpeace, joined in a request that ICCAT suspend the Mediterranean fishing season due to an announcement from Libya that it would allow fishing in violation of ICCAT's rules.¹⁰⁵ Conflict in Libya at that time meant "no chance of

99. See 90-Day Finding, *supra* note 11, at 57, 432-34.

100. CBD PETITION, *supra* note 13, at ii-iii.

101. See 90-Day Finding, *supra* note 11, at 57,432 (describing the numerous studies and statistics contained in the petition).

102. 16 U.S.C. § 1540 (2006). "Take" is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." 16 U.S.C § 1532(19) (2006).

103. Press Release, Nat'l Oceanic & Atmospheric Admin., Endangered Species Listing for Atlantic Bluefin Not Warranted (May 27, 2011), http://www.noaa.gov/stories2011/20110527_bluefintuna.html [hereinafter Endangered Species Listing].

104. *Id.*

105. Press Release, World Wildlife Fund, Plans for Illegal Fishing in Libyan Waters Unveiled (May 11, 2011), http://ni.wwf.org.uk/wwf_articles.cfm?unewsid=4918. Both organizations requested ICCAT to prevent the departure vessels headed to Libyan waters, as they were unauthorized for bluefin fishing. *Id.*

effective monitoring and enforcement,” both of which are critical to the bluefin’s recovery.¹⁰⁶

Today, the species is formally designated as a “species of concern’ under the Endangered Species Act.”¹⁰⁷ The NOAA has indicated that it will reconsider its decision on formal listing in early 2013 when more information will be available regarding the BP oil spill and new stock assessments.¹⁰⁸

Amongst many groups, the CBD remains concerned and convinced that bluefin warrant full ESA protection.¹⁰⁹ On August 10, 2011, the CBD requested that the United States propose to list bluefin on CITES’s Appendix I.¹¹⁰ The CBD asserts that this proposed listing could help improve compliance with TAC quotas and “would allow countries to shut down the black market that has fueled much of the [bluefin] tuna’s dramatic decline.”¹¹¹ The next CITES meeting takes place in 2013,¹¹² where the merry-go-round of proposals, defeats, and criticisms may possibly continue.

These continual and so far unsuccessful efforts to limit the supply of bluefin draw attention to the need for a new approach. The various schemes developed to regulate the supply of bluefin have proved to be ineffective in protecting this species. But to focus only on supply is to ignore the other half of the equation. *Demand* plays an equal role in

106. *Id.* That a political uprising in one African nation can further imperil the bluefin demonstrates the precarious position the species occupies, and how seemingly distant and unrelated events can contribute to its demise.

107. Endangered Species Listing, *supra* note 103.

108. *Id.* The amount of admitted uncertainty in the current stock assessments has created a need for a more adequate research plan and a greater understanding of this species. NMFS STATUS REVIEW, *supra* note 18, at 94.

109. Shawn J. Soper, *Lawsuit Threatened Over Bluefin Tuna*, DISPATCH (June 10, 2011), <http://www.mdcoastdispatch.com/articles/2011/06/10/Top-Stories/Lawsuit-Threatened-Over-Bluefin-Tuna>. Shortly after the NOAA’s announcement to decline bluefin ESA protection, the CBD threatened to “sue the federal agency,” for failure to protect the species. *Id.*

110. Press Release, Ctr. for Biological Diversity, Ban Sought on International Bluefin Tuna Trade: Protection Under Global Treaty Would Slow Illegal Fishing, Improve Compliance With Catch Limits (Aug. 10, 2011), http://www.biologicaldiversity.org/news/press_releases/2011/atlantic-bluefin-tuna-09-10-2011.html.

111. *Id.*

112. *Id.*

the overconsumption of any resource, and without demand, bluefin would not be facing extinction today.¹¹³

II. THE POWER OF CONSUMER DEMAND

*"[I]s . . . the common good created by the invisible hand of the market . . . undone by the environmental harm caused by its 'invisible elbow'?"*¹¹⁴

The sale of a 455-pound bluefin for \$225,000 set a record in 2001.¹¹⁵ The record stood for ten years until a 752-pound bluefin sold for \$396,000 during the first auction of 2011 at the world's largest fish market in Tokyo, Japan.¹¹⁶ High prices are not uncommon at the opening day "celebratory market."¹¹⁷ But this purchaser, the restaurant chain Taste of Japan, knew it would sell the fish at a loss at its Itamae and Itacho Sushi restaurants.¹¹⁸ A piece of *toro* from the fish would sell for around \$12, having cost the restaurant purchaser

113. Cf. Jan G. Laitos & Rachael B. Gamble, *The Problem With Wilderness*, 32 HARV. ENVTL. L. REV. 503, 526 (2008) (discussing the issue of satisfying demand for a limited supply of land). "[A]s with any resource experiencing high demand, one way to alleviate the strain on the resource is to increase supply. However, constraints on increasing the supply of wilderness are much greater than with other resources." *Id.* Bluefin is not a resource that can be increased to meet demand. Accordingly, the only solution is to adjust demand itself.

114. HUNTER ET AL., *supra* note 4, at 103 (noting John Elkington's notion of the "invisible elbow"). "Adam Smith, the founder of modern economics, is credited with the theory of the 'invisible hand,'" the idea that individuals, by pursuing wealth, maximize the common good. *Id.*

115. Akiko Fujita, *A Real Fish Story: Bluefin Tuna Is Auctioned for Record \$396,000*, ABC NEWS (Jan. 5, 2011), <http://abcnews.go.com/International/bluefin-tuna-fetches-record-396000-japanese-fish-market/story?id=12544594>.

116. *Giant Bluefin Tuna Sells For Record Price*, DISCOVERY (Jan. 5, 2011), <http://news.discovery.com/animals/bluefin-tuna-record-auction-110105.html>.

117. Fujita, *supra* note 115. For example, a 593-pound bluefin sold for approximately \$736,000 on January 5, 2012, at Tokyo's Tsukiji fish market's first auction of the year. *Bluefin tuna sells for record \$736,000 in Japan*, CBSNEWS (Jan. 5, 2012), http://www.cbsnews.com/8301-202_162-57352830/bluefin-tuna-sells-for-record-736000-in-japan/.

118. Zoe Li, *HK\$3 Million Bluefin Tuna, On Your Plate for Cheap*, CNNGO.COM (Jan. 6, 2011), <http://www.cnn.go.com/hong-kong/eat/hk3080000-bluefin-tuna-cheap-590872>.

something closer to \$110.¹¹⁹ However, the restaurant did not intend the purchase to bring an immediate profit. Instead, Taste of Japan paid the high price as a gesture of gratitude to its loyal customers.¹²⁰

Critics called the purchase a “promotional gimmick” that would encourage “irresponsible consumption.”¹²¹ In response, the head of Taste of Japan told journalists that he pays attention to environmental conservation, but felt the year’s bluefin catch was “particularly high” and that the purchase was made “in order to satisfy his customer’s demands.”¹²²

Due to the enormously high price being paid for bluefin, the incentive for the fishing industry to drive the fish towards extinction is almost irresistible.¹²³ Compounding the problem is the fact that the more the species diminishes, the more valuable it becomes.¹²⁴ Therefore, despite all efforts made to regulate the supply of bluefin, overfishing will continue, legally or illegally,¹²⁵ because this fish is

119. Pamela Boykoff, *Record-Setting Tuna Sale Irks Environmentalists*, CNN.COM BLOG (Jan. 6, 2011, 6:32 AM), <http://business.blogs.cnn.com/2011/01/06/record-setting-tuna-sale-irks-environmentalists>.

120. Li, *supra* note 118. Sharon Chan, marketing department spokeswoman, said “[w]e will sell it below the market price as we do not aim to make any profit, just to express our gratitude to the loyal fans of Itacho Sushi and Itamae Sushi in the new year.” *Id.*

121. Boykoff, *supra* note 119.

122. Li, *supra* note 118.

123. *Bluefin Tuna: Overview*, OCEANA, <http://na.oceana.org/en/our-work/protect-marine-wildlife/bluefin-tuna/overview> (last visited Feb. 26, 2011).

124. *See The Bluefin Tuna*, HOW TO SAVE THE BLUEFIN, <http://howtosave.thebluefin.posterous.com/pages/our-mission> (last visited Feb. 26, 2011). Companies like Mitsubishi are in fact capitalizing on the bluefin’s extinction by investing in the idea that if the bluefin do die off, then Mitsubishi’s reserve of frozen bluefin will become incredibly valuable. Deborah Bassett, *The 11th Hour Strikes: Saving the Blue Fin Tuna from Extinction*, HUFFINGTON POST (Feb. 26, 2011), http://www.huffingtonpost.com/deborah-bassett/11th-hour-strikes-for-the_b_824898.html (quoting Captain Paul Watson of the Sea Shepherd Conservation Society). This business venture has been referred to as the “politics of extinction.” *Id.*

125. MARSH & DANNER, *supra* note 38, at 8. A classic example of the tragedy of the commons is unregulated fisheries. HUNTER ET AL., *supra* note 4, at 114. Conservation is in the best interests of fisheries as a whole; however, it is in the best interest of each individual vessel’s short term goals to “catch[] as many fish as possible.” *Id.*

extremely valuable.¹²⁶ Accordingly, because restaurants will pay for what the consumer demands, the power to end the bluefin's demise lies within the consumer.¹²⁷

A crucial task of any sushi chef is to prepare the correct amount of fish at the beginning of the night so that it almost runs out by that evening's last call.¹²⁸ Once a chef breaks down the fish to a manageable size for use during the dinner shift, the exposed flesh begins to oxidize and its freshness immediately begins to decline.¹²⁹ If a broken-down block of bluefin sits untouched for one night and on into the next due to lack of demand, the cost of flying in fresh bluefin quickly becomes senseless.¹³⁰ Chefs find "there is nothing more painful than [sic] watching fish spoil because it won't sell."¹³¹ Consequently, if customers order less bluefin, then chefs will also order less bluefin from their suppliers, and the overall demand for bluefin will decrease. According to the basic economic principles of supply and demand, a decrease in demand will inevitably decrease the market price, giving suppliers less incentive to overfish the stock.

To decrease consumer demand, consumers should be armed with information regarding the environmental impact of their choices in the market place. For instance, simply seeing bluefin labeled as an "endangered" or "threatened" species on the menu may discourage the average customer from ordering it.¹³² Recent studies show a global

126. See ISSENBERG, *supra* note 6, at 247. Globalization did not cause illegal fishing but instead made the well established criminal activity more profitable. *Id.* See also Steve De Neef, *Saving the Bluefin Tuna*, DIVE PHOTO GUIDE (Feb. 17, 2011), <http://www.divephotoguide.com/underwater-photography-scuba-ocean-news/saving-bluefin-tuna> (discussing the relationship between demand and overfishing); *The Bluefin Tuna*, *supra* note 124 (describing consumer demand as the main reason for potential extinction). The Southern bluefin tuna is currently "more valuable per pound than gold." HUNTER ET AL., *supra* note 4, at 773.

127. The relationship between a diminishing population and higher prices being paid for that species is described as the "economies of extinction." *The Bluefin Tuna*, *supra* note 124.

128. ISSENBERG, *supra* note 6, at 149-50.

129. *Id.* at 150.

130. *Id.*

131. Cimarusti, *supra* note 88.

132. See Erickson, *supra* note 6, at 321-22. For a discussion of Greenpeace's attempt to persuade Nobu restaurants to list its bluefin as endangered on Nobu's menus, see *supra* note 31.

increase in consumer preference for product labels that provide information about a product's environmental impact.¹³³

In a perfect world, consumers could be made aware of the effects each of their purchasing decisions has on the environment. The effect of this amount of information, however, could result in a confusing flood of labels.¹³⁴ An alternative to alerting the consumer to each overfished species on the menu is to instead ensure that all species threatened by overfishing remain off the menu altogether. This could be accomplished with an increase in consumer requests for sustainable menus.¹³⁵ The result would be a better chance of survival for many species, including bluefin tuna.

III. CONSUMER AWARENESS

In recent decades, several approaches and programs have developed in response to consumers' growing awareness and concern for environmental issues.¹³⁶ Eco-labeling and environmental right-to-know laws are two examples of programs sharing one objective—to inform the consumer.¹³⁷ This section will briefly explore eco-labeling and right-to-know laws as two effective tools that could be utilized to decrease consumer demand for bluefin.

133. Moye, *supra* note 75, at 555-56; Cathy Roheim Wessells, *The Economics of Information: Markets for Seafood Attributes*, 17 MARINE RESOURCE ECON. 153, 154 (2002).

134. Wessells, *supra* note 133, at 161. Salmon, for example, often includes labels stating place of origin "Atlantic, Pacific, Alaskan, Chilen, Canadian, Norwegian, Irish, Scottish," in addition to its labels regarding whether its "wild, farmed, organic," and sustainably caught. *Id.*

135. Erickson, *supra* note 6, at 321-22. "[O]verfishing of the bluefin tuna is a direct result of the world wide demand for sushi." *Id.* An increase in consumer demand for "seafood that comes from sustainable fisheries will help drive the market in the right direction." *Id.*

136. See HUNTER ET AL., *supra* note 4, at 113-14.

137. See *id.*; Frank Asche & Martin D. Smith, *Trade and Fisheries: Key Issues for the World Trade Organization* 30 (World Trade Org. Econ. Research and Statistics Div., Staff Working Paper No. 2010-03, 2010), available at http://www.wto.org/english/res_e/reser_e/ersd201003_e.pdf. "[E]colabels, traceability and other measures that disclose information about how the fish has been harvested," have been proposed to help inform the consumer, thus restricting IUU fishing access to the market. *Id.*

A. The Power of Persuasion Through Eco-labeling

Eco-labeling arose from the theory that helping consumers become aware of the harm they cause will change their purchasing behavior.¹³⁸ Generally, eco-labeling involves labeling a product to indicate its environmental consequences, which encourages sustainable product purchases, and in turn provides economic incentive for environmental conservation.¹³⁹ Eco-labeling allows the consumer to consider environmental impacts when making purchasing decisions and creates market-based incentives for sustainable suppliers.¹⁴⁰

Environmental certification compliments eco-labeling programs, whereby a product earns its eco-label only after a certified organization assesses and approves a product's sustainable attributes.¹⁴¹ Amongst fisheries, environmental certification addresses the environmental impact of the supplier, including "the level of sustainability of a fishery's exploitation . . . maintenance of fish stocks and the ecological impacts of production."¹⁴²

1. Conservation Through Sustainable Labeling: The Marine Stewardship Council

One organization has developed an independent eco-labeling program created specifically to deal with the problem of fish stock depletion.¹⁴³ The Marine Stewardship Council (MSC) is a world

138. HUNTER ET AL., *supra* note 4, at 113.

139. Moye, *supra* note 75, at 537-38.

140. *Id.*

141. *Id.*

142. *Id.* at 538. The main problem with product certification is the voluntary nature of certification programs. Producers choose to submit a product for examination as opposed to being required to do so. *Id.* at 538-39. Therefore, a crucial factor in a program's success is consumer awareness of the eco-label's significance and accuracy so that the consumer can recognize, trust, and demand the labeled product—thereby demanding the process the label represents. *Id.* at 545. After establishing this foundation, the consumer, through sustainable selection, provides economic incentive for suppliers to voluntarily submit their products for the eco-labeling process. *Id.* at 545-46.

143. *Id.* at 541-42.

leader among fishery certification programs.¹⁴⁴ It is not the product itself that the MSC certifies, but entire fisheries that: (1) do not contribute to overfishing or depletion and maintain and recover healthy fish stocks; (2) operate in a manner consistent with “ecosystem imperatives”; and (3) are developed and maintained by a management system consistent with scientific, economic, and social principles as well as governing international, national, and local standards.¹⁴⁵

Bringing an eco-labeling program into the restaurant industry requires obtaining consumer trust in the eco-label program and voluntary restaurant participation.¹⁴⁶ The MSC has demonstrated the program’s ability to secure these requirements and has successfully united with the restaurant industry to extend to diners the same sustainable options as those provided in many stores around the world.¹⁴⁷ Bamboo Sushi, a restaurant in Portland, Oregon, is one example of a restaurant that has brought MSC’s eco-label specifically into the sushi industry.¹⁴⁸

Bamboo Sushi was the first sushi restaurant to obtain the MSC Chain of Custody certification in the United States.¹⁴⁹ In addition to earning MSC’s eco-label, the restaurant strives to maintain an

144. *First MSC-Certified Independent Restaurant in U.S. Opens*, MARINE STEWARDSHIP COUNCIL (Nov. 20, 2008), <http://www.msc.org/cook-eat-enjoy/news/newsitem/first-msc-certified-independent-restaurant-in-us> [hereinafter *First MSC-Certified*].

145. Tracy Cooper, *Picture This: Promoting Sustainable Fisheries Through Eco-Labeling and Product Certification*, 10 OCEAN & COASTAL L.J. 1, 36-40 (2005); Moye, *supra* note 75, at 544.

146. Moye, *supra* note 75, at 545.

147. See *MSC Labelled Seafood in Shops and Restaurants*, MARINE STEWARDSHIP COUNCIL, <http://www.msc.org/where-to-buy/msc-labelled-seafood-in-shops-and-restaurants> (last visited Mar. 23, 2011).

148. *MSC Chain of Custody Case Study: Bamboo Sushi*, MARINE STEWARDSHIP COUNCIL, <http://www.msc.org/documents/get-certified/get-certified-chain-of-custody/get-certified-restaurants/MSC-BambooSushi-lo.pdf> (last visited Oct. 3, 2011) [hereinafter *Bamboo Sushi*].

149. *Id.*; see also Moye, *supra* note 75, at 547. “Chain of Custody certification indicates adherence to strict traceability standards.” *First MSC-Certified*, *supra* note 144. The restaurant’s menu items that come from certified fisheries are accompanied by MSC’s eco-label. *Id.*

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educated staff capable of promoting its commitment to serving sustainable sushi, which strengthens the restaurant's customer base.¹⁵⁰

However, as non-certified restaurants also begin to claim "sustainability," an issue of credibility arises. Eco-labeling programs do not succeed without a factor of trustworthiness for consumers to rely upon.¹⁵¹ Recently, other sushi restaurants have claimed to be sustainable, but are not certified by MSC or any other program.¹⁵² When non-certified restaurants claim to be "sustainable," the restaurants that comply with the standards of an eco-labeling program, like MSC, potentially lose their factor of trustworthiness and thus the competitive advantage and economic incentive to participate in the eco-labeling program.¹⁵³

Many eco-labeling programs are provided by non-governmental organizations.¹⁵⁴ Once established, however, a label's continued trustworthiness benefits from governmental involvement in reducing fraudulent claims of sustainability.¹⁵⁵ For example, in 1990, Congress

150. See *Bamboo Sushi*, *supra* note 148. Bamboo Sushi's owner points out the advantages of taking additional steps beyond certification. *Id.* For example, Bamboo Sushi realized a one hundred percent business increase within a ten-month period due to promoting its sustainable efforts and increasing staff and consumer awareness. *Id.*

151. See Moye, *supra* note 75, at 555-62 (exploring the potential problems that arise with consumer demand for eco-labeled products including loss of consumer confidence when fraudulent eco-labels enter the market).

152. See, e.g., *Think Sustainable*, MASHIKO, <http://www.sushiwhore.com/sustainablesushibar.html> (last visited Mar. 23, 2011). For example Mashiko, a sushi restaurant in Seattle, claims to be "Seattle's first fully sustainable sushi bar" and seems to rely upon Monterey Bay Aquarium's seafood recommendations and "top seafood sustainability experts" to ensure its sustainable supply. *Id.* Although Mashiko's efforts in becoming a fully sustainable restaurant are commendable, even its owner, Chef Hajime Sato, admits that "it is close to impossible to verify the source" of fish, so he relies upon the supplier's word. See *Seafood on Screen, Sushi Star Onstage, for Sustainable West Seattle*, WEST SEATTLE BLOG (Mar. 22, 2011, 7:41 AM), <http://westseattleblog.com/2011/03/seafood-on-screen-sushi-star-onstage-for-sustainable-west-seattle>.

153. See Cooper, *supra* note 145, at 20.

154. Moye, *supra* note 75, at 560-61.

155. See ELISE GOLAN ET AL., ECON. RESEARCH SERV., U.S. DEP'T OF AGRIC., AGRIC. ECON. REPORT NO. 793, ECONOMICS OF FOOD LABELING 11 (2000), available at <http://www.ers.usda.gov/publications/aer793/aer793.pdf> (discussing consumer trust in the context of dolphin-safe tuna). While U.S. consumers may find government bodies trustworthy, European consumers largely do not. *Id.*

determined that “consumers would like to know if the tuna they purchase is falsely labeled as to the effect of the harvesting of the tuna on dolphins,” so Congress enacted the Dolphin Protection Consumer Information Act (DPCIA).¹⁵⁶ The DPCIA provides a specified labeling standard for any tuna product sold in, imported to, or exported from the United States.¹⁵⁷ Under the DPCIA, there is no obligation to label tuna “dolphin safe.”¹⁵⁸ Instead, the act provides certain criteria that must be met before a “dolphin safe” label, or any other label with an equivalent claim, may be displayed.¹⁵⁹ “Dolphin safety is a credence attribute” that consumers, for the most part, cannot verify on their own.¹⁶⁰ Thus, this third-party service provided by the government plays an important role in dolphin-safe labeling.¹⁶¹

As labels of “sustainability” become more prevalent in stores and restaurants throughout the world, governmental support—as a third-party verifier for claims of sustainability—will strengthen the necessary eco-labeling element of credibility.¹⁶² With an increase in credibility comes an increase in consumer demand and economic incentive for more restaurants to become certified as sustainable suppliers.¹⁶³ An increase in sustainable restaurants results in a better chance of environmental sustainability for the bluefin population.¹⁶⁴

156. Dolphin Protection Consumer Information Act, 16 U.S.C. § 1385 (2006); *see also* GOLAN ET AL., *supra* note 155, at 22. “Private firms had an incentive to produce and label dolphin-safe tuna because enough consumers were willing to pay for this quality attribute (and many were unwilling to accept the alternative).” *Id.*

157. 16 U.S.C. § 1385(d) (2006); *see also* Avi Gesser, Comment, *Canada's Environmental Choice Program: A Model For a “Trade-Friendly” Eco-Labeling Scheme*, 39 HARV. INT’L L.J. 501, 520-24 (1998) (examining the conflicts between eco-labeling, including the DPCIA, and trade laws).

158. *See* 16 U.S.C. § 1385(d) (2006).

159. *Id.* § 1385(d)(1).

160. GOLAN ET AL., *supra* note 155, at 24.

161. *See id.*

162. *See id.* at 11.

163. *See* Moye, *supra* note 75, at 545-46 (linking the demand for MSC-labeled products, created by consumer trust and awareness, to restaurant’s desire to purchase MSC-labeled products). Environmental sustainability concerns issues such as overfishing, the environmental impact of fish farming, and whether or not a given fishery negatively impacts the ability to catch a particular fish in the future. *See* TRENOR, *supra* note 1, at xii.

164. *See* TRENOR, *supra* note 1, at xii-iii.

2. Looking to Japan

Japan consumes more bluefin than any other nation.¹⁶⁵ Therefore, influencing Japan's consumer demand would have a major impact on the survival of the species. In 2007, Japan implemented an eco-labeling program called Marine Eco-Label Japan (MEL Japan), a program similar to MSC.¹⁶⁶ MEL Japan (1) promotes "the conservation and sustainable use of marine resources"; (2) utilizes a co-management scheme based on traditional notions of local, individual, and voluntary management, that ensures "sustainable use of aquatic resources"; and (3) encourages fisheries to pay closer attention to the effects of the eco-label certification and to contribute to scientific data and information of fishing activities, creating a more efficient and cost effective eco-labeling program.¹⁶⁷

MEL Japan is a recently developed program; only time will tell whether it will follow the MSC into the sushi industry. If the program does certify sustainable dining, however, MEL Japan would similarly benefit from third-party verification and oversight, akin to that of the DPCIA.¹⁶⁸ Such oversight would encourage consumer trust in MEL Japan's label and create greater demand for sustainable sushi in Japan.

B. Right-to-Know About Mercury

Increasing awareness of sustainable sushi would not only help to alleviate pressure on exhausted fish species, but would lead to individual health benefits for the consumer—including the reduction of mercury consumption. While certification programs like the MSC

165. Jenny Marder, *Atlantic Bluefin Tuna in Danger*, *International Commission on the Hot Seat*, PBS (Nov. 17, 2010), <http://www.pbs.org/newshour/rundown/2010/11/the-atlantic-bluefin-tuna-is.html>.

166. *Outline of Marine Eco-Label Japan*, MARINE ECO-LABEL JAPAN, <http://www.melj.jp/eng/index.cfm> (last visited Mar. 24, 2011); see also Moye, *supra* note 75, at 550-51 (discussing the initiation and structure of MEL Japan).

167. *Outline of Marine Eco-Label Japan*, *supra* note 166.

168. Moye, *supra* note 75, at 561-62. MEL Japan is a government-run program, therefore, it does not face some of the same issues of accountability as an independent organization such as MSC. *Id.* However, due to strong ties between MEL Japan, the fishing industry, and the Japanese government, the program "raises serious accountability issues" of its own. *Id.* Thus, the program's credibility would benefit from nongovernmental, third-party monitoring. See *id.* at 562.

and MEL Japan can lead to greater demand for sustainable fisheries,¹⁶⁹ other awareness programs can highlight additional reasons to avoid certain species like bluefin.

The Monterey Bay Aquarium Seafood Watch program has made many consumer-friendly sustainable seafood guides available to the public.¹⁷⁰ The guide specifically created for sushi not only provides information regarding whether a certain species is abundant or overfished, but also alerts the consumer to those fish that are particularly high in mercury.¹⁷¹ The “4-S Rule” can also provide a basic guideline to sustainable selection in a sushi restaurant.¹⁷² Although there are numerous exceptions to the rule, choosing shellfish, seasonal fish, silver-colored fish, and smaller fish comprises a sustainable approach to sushi ordering.¹⁷³ *Shellfish*, like abalone and mussels, can be farmed with lower environmental impacts than other fish farming operations.¹⁷⁴ *Seasonal fish* have less impact on carbon emissions, as out-of-season fish are more likely to be shipped from a further distance.¹⁷⁵ Fish served with the *silver skin* left on tend to be

169. See *supra* Sections III.A.1-2.

170. See, e.g., *Seafood Recommendations*, MONTEREY BAY AQUARIUM, http://www.montereybayaquarium.org/cr/cr_seafoodwatch/sfw_recommendations.aspx?c=ln (last visited Sept. 10, 2011).

171. MONTEREY BAY AQUARIUM, SEAFOOD WATCH, SUSTAINABLE SEAFOOD GUIDE: SUSHI (2011), available at http://www.montereybayaquarium.org/cr/cr_seafoodwatch/content/media/MBA_SeafoodWatch_SushiGuide.pdf. On a chart listing “the most contaminated fish, and how much can safely be eaten each month,” bluefin appears at the top of the list and its consumption is simply not recommended. *List of Seafood Health Alerts*, ENV’T DEF. FUND, <http://apps.edf.org/page.cfm?tagID=17694> (last updated Apr. 26, 2011).

172. Casson Trenor, *Golden Rules to Eating Sustainable Sushi*, CNN (Apr. 30, 2010), <http://www.cnn.com/video/standard.html#/video/international/2010/04/30/eco.sustainable.sushi.webextra.cnn?iref=allsearch>.

173. Casson Trenor, *The 4-S Rule*, SUSTAINABLE SUSHI (May 12, 2010), <http://www.sustainablesushi.net/2010/05/12/the-4-s-rule>.

174. *Id.* Bluefin farming is especially damaging to the ocean’s eco-system as bluefin are top predators, with voracious appetites for protein. TRENOR, *supra* note 1, at 21. Every pound of farmed bluefin takes roughly twenty pounds of smaller fish to produce. *Id.* Furthermore, farmed bluefin are not usually raised from eggs but instead caught as juveniles for fattening, creating further harm to a dwindling population. *Id.*

175. See Trenor, *supra* note 173.

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smaller and contain higher omega-3's and lower mercury;¹⁷⁶ this category includes horse mackerel and sardines.¹⁷⁷ *Smaller fish* breed in larger numbers, "creat[ing] as many offspring as possible" as they are low on the food chain.¹⁷⁸ The survival methods of reproducing in large numbers help smaller fish endure considerable predation and withstand pressures of overfishing.¹⁷⁹ Smaller fish also contain less mercury due to a relatively short lifespan and light consumption of other organisms containing mercury.¹⁸⁰

In a survey conducted by the New York Times, laboratory results showed that the amount of mercury contained in tuna sushi was alarmingly high and that weekly consumption of six pieces would exceed the acceptable levels recommended by the Environmental Protection Agency (EPA).¹⁸¹ Sushi from one quarter of the twenty

176. *Id.*

177. See TRENOR, *supra* note 1, at 51, 67.

178. Trenor, *supra* note 173.

179. *Id.*

180. *Id.*; see also *Mercury and Fish*, KAISER PERMANENTE (2006), <http://www.permanente.net/homepage/kaiser/pdf/56663.pdf> (advising people to "[e]at smaller fish rather than larger fish because they usually have less mercury"). "Women who are pregnant or planning to become pregnant" need to take extreme precautions when eating sushi as there is an increase in vulnerability to the harmful effects of mercury for pregnant women and children. See *Mercury Contamination in Fish: Guide to Mercury in Sushi*, NAT'L RESOURCE DEF. COUNCIL., <http://www.nrdc.org/health/effects/mercury/sushi.asp> (last visited Mar. 24, 2011). "Many of the fish chosen for sushi are apex predators of the fish food chain, which means they can bear high concentrations of mercury." *Id.*

181. Marian Burros, *High Mercury Levels Are Found in Tuna Sushi*, N.Y. TIMES (Jan. 23, 2008), <http://www.nytimes.com/2008/01/23/dining/23sushi.html>; see also *Fish Consumption Advisories: Mercury*, ENV'TL PROTECTION AGENCY, <http://www.epa.gov/hg/advisories.htm> (last visited Jan. 2, 2011). The FDA states the degree of exposure to mercury hinges on both the amount and the type of fish eaten. *What You Need to Know About Mercury in Fish and Shellfish*, FOOD & DRUG ADMIN. (Mar. 2004), <http://www.fda.gov/food/foodsafety/product-specificinformation/seafood/foodbornepathogenscontaminants/methylmercury/ucm115662.htm> [hereinafter *What You Need to Know*]. The FDA has previously acknowledged methylmercury as a potential health hazard for bluefin tuna. U.S. DEP'T OF HEALTH & HUMAN SERV., FOOD & DRUG ADMIN., FISH AND FISHERIES PRODUCTS HAZARDS AND CONTROL GUIDANCE (3d ed. 2001), available at <http://www.fda.gov/Food/GuidanceComplianceRegulatoryInformation/GuidanceDocuments/Seafood/ucm092041.htm>. Although the FDA warns that a key factor of an individual's health is "related to the amount and type of fish the individual

restaurants tested contained mercury levels high enough to allow the Food and Drug Administration (FDA) to legally remove the fish from the sushi market.¹⁸² Most of the tuna tested was bluefin.¹⁸³

As with increasing demand for sustainable sushi, increasing consumer awareness of bluefin's mercury content could result in a decrease in bluefin consumption. Mercury, once in the human brain, destroys "neurons vital for sensory perception, memory and motor skills."¹⁸⁴ Mercury poisoning, in some of its advanced stages, resembles cerebral palsy and dementia.¹⁸⁵ A person exposed to

consumes," there is no mercury labeling requirements for bluefin tuna, nor any mercury warning requirements for sushi restaurants. See *Fish Consumption Advisories: Mercury*, *supra*.

182. Burros, *supra* note 181. Dr. Michael Gochfeld, a professor at Robert Wood Johnson Medical School stated "[n]o one should eat a meal of tuna with mercury levels like those found in the restaurant samples more than about once every three weeks." Michelle Kung, *Mercury-Laden Sushi Sidelines Piven from 'Speed-the-Plow'*, WALL ST. J. (Dec. 19, 2008, 9:08 PM), <http://blogs.wsj.com/health/2008/12/19/mercury-laden-sushi-sidelines-piven-from-speed-the-plow/#more-3836>.

183. Burros, *supra* note 181; see also Jessica Marshall, *Restaurant Sushi Has More Mercury than Store-Bought*, DISCOVERYNEWS (Apr. 21, 2010, 7:16 AM), <http://news.discovery.com/human/sushi-mercury-tuna-restaurant.html> (reporting a single serving of yellowfin tuna exceeds the daily amount of mercury that the EPA considers safe for a 130-pound woman, and that an order of bluefin would be even higher).

184. *How Does Mercury Enter the Food Chain?*, THE COVE, <http://www.thecovemovie.com/FAQRetrieve.aspx?ID=37076> (last visited Mar. 24, 2011).

185. *Id.* Japan has suffered though two major cases of methylmercury poisoning, one in the late 1950s and early 1960s and the other in 1965. CHARLES J. MOORE, S.C. DEP'T OF NATURAL RES., OFFICE OF ENVTL. MGMT., MARINE RES. DIV., A REVIEW OF MERCURY IN THE ENVIRONMENT (ITS OCCURRENCE IN MARINE FISH) 12 (2000), available at http://www.dnr.sc.gov/marine/img/mm_paper.pdf. The first was the horrific disaster at Minamata caused by a chemical factory situated on the shores of Minamata Bay. *Id.* Mercury from the factory spilled into the bay where fish absorbed it. *Id.* Thousands of effected individuals suffered from severely impaired vision, speech, and hearing. *Id.* The effects of what is now known as Minamata disease also included high fever, sharp pain in the hands and feet, convulsions, psychosis, and death. *Id.*; Stephen Juan, *The Minamata Disaster - 50 Years On: Lessons Learned?*, REGISTER (July 14, 2006), http://www.theregister.co.uk/2006/07/14/the_odd_body_minimata_disaster/. "In all, 900 people died and 2,265 people were certified as having directly suffered from mercury poisoning . . ." *Id.*

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mercury, even at low levels, may develop symptoms weeks, possibly months, after exposure.¹⁸⁶ To reduce exposure to the harmful effects of mercury, the FDA and EPA advise select groups, like women who are pregnant or planning to become pregnant, to avoid eating fish at the top of the food chain—like bluefin—that contain high concentrations of mercury.¹⁸⁷ However, mercury or methylmercury (which is the mercury compound fish absorb) presents a risk to all.¹⁸⁸

Concerned for the consumers' right-to-know about harmful chemicals, the state of California brought action against three major tuna canneries in *People ex rel. Brown v. Tri-Union Seafoods, L.L.C.*,¹⁸⁹ for failure to comply with the Safe Drinking Water and Toxic Enforcement Act, also known as Proposition 65.¹⁹⁰ Proposition 65 is a state environmental right-to-know law requiring businesses to provide warnings on any product that could cause cancer or reproductive harm.¹⁹¹ The parties in *Tri-Union Seafoods* did not

186. Jordan Lite, *What is Mercury Poisoning?*, SCI. AM. (Dec. 19, 2008) <http://www.scientificamerican.com/article.cfm?id=jeremy-piven-mercury-poisoning&page=2>. In pregnant women, mercury can “cause birth defects and loss of the fetus if the levels get high enough.” *Id.*

187. *Mercury Contamination in Fish: Guide to Mercury in Sushi*, *supra* note 180; *What You Need to Know*, *supra* note 181. Mercury released into the air—for example, when coal is burned—eventually finds its way into streams and oceans in its organic form, methylmercury. *How Does Mercury Enter the Food Chain?*, *supra* note 184; *see also* Lite, *supra* note 186 (explaining the possibility of getting mercury poisoning from eating tuna, regardless of whether its cooked or not). “Fish absorb the methylmercury as they feed in these waters and so it builds up in them. . . . Nearly all fish and shellfish contain traces of methylmercury. However, larger fish that have lived longer have the highest levels of methylmercury because they’ve had more time to accumulate it.” *What You Need to Know*, *supra* note 181.

188. Brandon Moor, *‘Wonderfish’ Coverage Minimizes the 800-Pound Methylmercury Gorilla*, ENVTL. HEALTH NEWS BLOG (Mar. 28, 2011, 6:00 AM) <http://www.environmentalhealthnews.org/ehs/blog/wonderfish-coverage-minimizes-methylmercury>. Although the developmental risks of mercury are “crucial” to understand, “more should be said about the growing understanding of chronic adult exposures. The pollutant can affect the brain, the nervous system and the immune systems in adults, too” and may permanently “impact attention, memory, and coordination.” *Id.*

189. 90 Cal. Rptr. 3d 644 (Ct. App. 2009).

190. *Id.* at 648-49.

191. “No person in the course of doing business shall knowingly and intentionally expose any individual to a chemical known to the state to cause cancer or reproductive toxicity without first giving clear and reasonable warning to such

dispute that: (1) “methylmercury is a reproductive toxin”; (2) “the primary path for human exposure to methylmercury is consumption of fish”; or (3) “[a]ll canned tuna distributed by the respondents” did, in fact, contain methylmercury.¹⁹² The reviewing court nevertheless upheld the trial court’s ruling in favor of *Tri-Union Seafoods*, holding that the canneries presented sufficient evidence to support the trial court’s finding that the methylmercury in their tuna was naturally occurring, and thus exempt from the labeling requirement of Proposition 65.¹⁹³ The court, however, went on to explore “potential scenarios” in which a subsequent Proposition 65 claim could be brought against the canneries or similar companies, without being barred by *res judicata* or collateral estoppel.¹⁹⁴ One of the court’s examples involves a scenario where Proposition 65 is amended “to *except* the presence of methylmercury in canned tuna from the naturally occurring rules.”¹⁹⁵

The maximum size of an albacore tuna is about four feet in length and eighty pounds in weight;¹⁹⁶ in comparison, bluefin can reach fourteen feet in length and weigh hundreds of pounds.¹⁹⁷ Mercury content increases with the size and placement of a species on the food chain, therefore, the mercury content of bluefin is greater than that of albacore.¹⁹⁸ If it is found that albacore do not contain enough

individual” CAL. HEALTH & SAFETY CODE § 25249.6 (West 2006 & Supp. 2011).

192. *Tri-Union Seafoods*, 90 Cal. Rptr. 3d at 648. Methylmercury is also a “chemical known to cause cancer.” *Id.* at 649.

193. *Id.* at 654.

194. *Id.* at 664.

195. *Id.* (emphasis in original). The court also suggests that a court appointed expert would have “reduce[d] the risk of a decision based on anything but the most valid scientific investigation and assessment” regarding naturally occurring methylmercury. *Id.* at 663. It goes on to explain that an investigation of this kind, or any new finding on the matter, would re-open the issue for a Proposition 65 claim. *Id.* at 664.

196. *Fish Watch: North Atlantic Albacore Tuna*, NAT’L MARINE FISHERIES SERV., http://www.nmfs.noaa.gov/fishwatch/species/atl_albacore.htm (last visited Mar. 24, 2011).

197. *Northern Bluefin Tuna*, *supra* note 17.

198. *How Does Mercury Enter the Food Chain?*, *supra* note 184 (explaining that methylmercury concentrations multiply by ten times for every step up the food chain).

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methylmercury to justify a Proposition 65 amendment similar to that suggested by the California Court of Appeal, it would still be possible for bluefin to contain levels worthy of such an amendment—excluding bluefin from the natural-occurring exemption.¹⁹⁹ Accordingly, Proposition 65 may be a starting point for labeling requirements that specify the mercury content in bluefin sushi on a state level.²⁰⁰

IV. CRITICISMS

This comment's proposed solution of raising consumer awareness to decrease consumer demand faces numerous criticisms. These include doubt in a consumer's willingness to avoid bluefin simply because of its threatened state, concern that right-to-know labels may be misleading, and worry that a decrease in consumer demand may have a devastating impact on the fishing and restaurant industries. Despite these criticisms, a continuing discussion of how to achieve sustainability is necessary to secure this species' survival.

A. Survival Left in the Hands of the Consumer

The successful maintenance of sustainable fisheries through eco-label programs, like MSC and MEL Japan, depends entirely on the "willingness of consumers to buy eco-labeled products."²⁰¹ When demand for certification is high enough, voluntary third-party

199. See *Sustainably Caught Wild Seafood: Highest Omega-3 and Low Mercury*, WILD PLANET, <http://www.wildplanetfoods.com/Highest-Omega-3-and-Low-Mercury.html> (last visited May 29, 2011) (explaining how canning smaller albacore (9-25 pounds) results in an average mercury content of 0.17ppm compared to other brands' mercury content averaging 0.45ppm). "Naturally, the longer a fish lives and feeds, the more it bio-accumulates mercury." *Id.* Albacore have a lifespan of 9-13 years depending upon its geographic location. *Fish Watch: North Atlantic Albacore Tuna*, *supra* note 196. Bluefin can live to almost forty years, inevitably increasing its mercury intake. See *Fish Watch: Atlantic Bluefin Tuna*, *supra* note 9.

200. Under Proposition 65, methods providing "warnings" include: "labeling [and] identification of the product at the retail outlet through shelf labeling, signs, menus, or a combination of these methods . . ." *Tri-Union Seafoods*, 90 Cal. Rptr. 3d at 650 (construing CAL. CODE REGS. tit. 27, § 25603.1).

201. Moye, *supra* note 75, at 555. "Restaurants, retailers, and wholesalers simply will not continue to purchase eco-labeled products if there is no consumer demand for them." *Id.*

certification or governmental involvement develops.²⁰² Without sufficient demand, however, some argue that the costs of obtaining third-party verification outweigh the benefits of eco-labeling, and eco-labeling programs thus fail to reach a credible standard.²⁰³ The notion that bluefin will disappear from the menu as a result of an increase in consumer demand for sustainable restaurants therefore rests upon the assumption that the consumer will continue to make sustainable selections.²⁰⁴ As with the dolphin safe tuna campaign of the 1990s, ending overfishing may depend on consumer concern fueled by ongoing publicity and informational campaigns.²⁰⁵

B. Consumer Confusion

Some argue that environmental right-to-know laws, such as Proposition 65, “may not always yield useful information,” as the consumer often misinterprets the label, or the label blinds the consumer to the product’s important benefits.²⁰⁶ For example, some experts assert that eating fish aids cardiovascular health, outweighing mercury risks.²⁰⁷ Furthermore, the FDA states that fish and shellfish are important to a child’s growth and development, and advises women and young children to eat up to twelve ounces a week of fish and shellfish that are “lower in mercury,” including canned light

202. See Douglas A. Kysar, *Preferences for Processes: The Process/Product Distinction and the Regulation of Consumer Choice*, 118 HARV. L. REV. 525, 626-32 (2004) (examining the distinction between product-related information and process-related information and explain consumer preferences regarding both). Organic labeling is an example of popular demand for labeling evoking voluntary third-party certification before the development of federal standards. *Id.*; see also GOLAN ET AL., *supra* note 155, at 27-29 (examining the progression of federal standards for organic labeling).

203. See Kysar, *supra* note 202, at 625-28.

204. See Denis A. O’Connell, *Tuna, Dolphins, and Purse Seine Fishing in the Eastern Tropical Pacific: The Controversy Continues*, 23 UCLA J. ENVTL. L. & POL’Y 77, 85 (2005) (discussing the rise of consumer concern for dolphin mortality as the cause for dolphin safe labeling practices). Tuna companies “cited consumer pressure as a reason for its decision to stop purchasing tuna caught by setting nets on dolphins.” *Id.*

205. *Id.*

206. Alexander Volokh, *The Pitfalls of the Environmental Right-To-Know*, 2002 UTAH L. REV. 805, 807 (2002).

207. *Id.* at 825.

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tuna.²⁰⁸ At the same time, the FDA also advises those who choose “albacore (‘white’) tuna” over “canned light tuna,” to cut their recommended quota in half due to higher mercury content; “you may eat up to six ounces (one average meal) of albacore tuna per week” as opposed to the twelve ounce maximum recommended for canned light tuna.²⁰⁹ Therefore, the argument that “people will eat less fish, mistakenly believing that the mercury risk is higher than it really is,”²¹⁰ faces the counter argument that people will eat too much fish, mistakenly believing that the mercury risk is lower than it actually is.²¹¹

C. Economic Impact

With bluefin yielding such high returns,²¹² one might be concerned about the impact that a strong decrease in consumer demand may have on the fishing and restaurant industries. Many conservation plans take into account concern for countries whose economy would be severely affected by the immediate impact of

208. *What You Need to Know*, *supra* note 181.

209. *Id.*

210. Volokh, *supra* note 206, at 825.

211. *See* Kung, *supra* note 182 (describing the case of an actor who found himself battling mercury poisoning after eating a diet rich in sushi); *Fellner v. Tri-Union Seafoods, L.L.C.*, 539 F.3d 237 (3d Cir. 2008). In *Fellner*, a consumer diagnosed with mercury poisoning from consuming canned tuna sought relief from tuna product manufacture after consuming a diet “almost exclusively of” canned tuna. *Id.* It is important to note that Proposition 65 provides very clear requirements for businesses to follow. The law ensures a consumer will be adequately informed with minimal chance of confusion:

(c) The warnings provided pursuant to subparagraphs (a) and (b) shall be prominently placed upon a product’s label or other labeling or displayed at the retail outlet with such conspicuousness, as compared with other words, statements, designs, or devices in the label, labeling or display as to render it likely to be read and understood by an ordinary individual under customary conditions of purchase or use.

(d) A system of signs, public advertising identifying the system and toll-free information services, or any other system that provides clear and reasonable warnings.

CAL. CODE REGS. tit. 27, § 25603.1 (2011).

212. *See supra* Section II.

preservation efforts.²¹³ The ultimate collapse of a species, however, leaves little potential for financial gain.²¹⁴

Overfishing has severe economic consequences. Many statistics reveal the grim economic impact caused by overfishing within the United States over the last few decades.²¹⁵ In 1990, U.S fisheries produced a record catch, valued at \$3.6 billion.²¹⁶ The United States consumed \$26.7 billion worth of products generated by fisheries that year.²¹⁷ Commercial and saltwater recreational fisheries provided for, as of 2008, 1.9 million jobs.²¹⁸ According to a report commissioned million was lost by commercial fisherman due to decades of

213. See Andrew M. Lemieux & Ronald V. Clarke, *The International Ban on Ivory Sales and its Effects on Elephant Poaching in Africa*, 49 BRIT. J. CRIMINOLOGY 451, 465 (2009), available at <http://bjc.oxfordjournals.org/content/49/4/451.full.pdf> (explaining that a requisite component of successful conservation involves an understanding that the animal being protected warrants that protection from an economic perspective).

214. *But see supra* note 124.

215. See e.g., TAYLOR HESSELGRAVE ET AL., ECOTRUST, *THE HIDDEN COST OF OVERFISHING TO COMMERCIAL FISHERMAN: A 2009 SNAPSHOT OF LOST REVENUES 2* (2011), available at http://www.pewenvironment.org/uploadedFiles/PEG/Publications/Report/FINAL_Cost_of_Overfishing_Commerical_Study_Full_Analysis_FINAL_7_20_11.pdf (projecting the “annual forgone revenues due to historic overfishing”). Overfishing simply results in less fish; each year’s harvest reflects that decrease in fish populations and the “annual forgone revenues due to historic overfishing” thus quantifies the value of that loss. *Id.* See also Houck, *supra* note 4, at 946-48 (showing the economic impact of dwindling stocks). Species, including Chesapeake Bay oysters and swordfish have struggled, as well as harvestable cod and yellowtail flounder, due to overfishing. *Id.* In the 1990s, a large portion of New England’s fishing fleets was “grounded in port” due to dwindling fish stocks. *Id.* In the years that followed, overfishing caused New England’s fishing industry to collapse, resulting in a loss of “14,000 jobs and \$350 million in annual revenues.” *Id.*

216. Houck, *supra* note 4, at 947.

217. *Id.*

218. *Implementation of the Magnuson-Stevens Fishery Conservation and Management Act: Hearing Before the Subcomm. on Oceans, Atmosphere, Fisheries and the Coast Guard of the S. Comm. on Commerce, Sci., and Transp.*, 112th Cong. 9, 11 (2011) [hereinafter *Hearing*], available at http://docs.lib.noaa.gov/noaa_documents/NOAA_related_docs/Lgislative_acts/fishery_conservation_management_act_shrg_112-34.pdf (testimony of Eric Schwaab, Assistant Administrator of the Nat’l Marine Fisheries Serv., Nat’l Oceanic and Atmospheric Admin., U.S. Dep’t of Commerce) (describing ways depleted fish stocks impact national revenue and employment, and increases dependence on foreign seafood).

overfishing.”²¹⁹ That year’s profit numbers amounted to merely “25% of potential revenue.”²²⁰ This decline in numbers highlights the devastating effects of overfishing on the fishing industry.

The NMFS claims the implementation of new provisions of the Magnuson Stevens Act and the modernization of fisheries management will help to end overfishing and rebuild overfished stocks.²²¹ “While in the short term, it may require sacrifices by fishermen,” the NMFS states that “following through on the steps being taken now will provide significant long-term economic benefits to fishermen,” including an additional \$31 billion in sales and 500,000 new jobs in the United States.²²² Thus, the potential short-term economic impact of reducing consumer demand for overfished species is outweighed by the long-term advantages to the economy and ecosystem.²²³

V. CONCLUSION

*“If, as a society, we are aware of the consequences of our seafood choices, we can continue to eat sushi and protect our oceans at the same time. Moreover, we will better understand how our choices may affect our health, positively or negatively.”*²²⁴

Consumer awareness may be the key to the bluefin’s survival. There is no reason to exhaust this species.²²⁵ Not only is bluefin

219. *The Hidden Cost of Overfishing to Commercial Fishermen*, PEWENVIRONMENT.ORG (July 25, 2011), <http://www.pewenvironment.org/newsroom/reports/the-hidden-cost-of-overfishing-to-commercial-fishermen-85899361965>. This loss could be “as high as \$222.5 million under less-conservative assumptions about potential catch size.” HESSELGRAVE ET AL., *supra* note 214, at 9.

220. *The Hidden Cost of Overfishing to Commercial Fishermen*, *supra* note 218.

221. *Hearing*, *supra* note 217, at 9-10, 17.

222. *Id.* at 10.

223. *See* HESSELGRAVE ET AL., *supra* note 214, at 2 (explaining that overfishing produces “higher than sustainable profits in the short-term” and “fails to maximize the long-term net sustainable rate of return from the fishery”).

224. TRENOR, *supra* note 1, at xi.

225. It is worth noting that there is nothing “traditional” about eating bluefin—thus, it is not a traditional *staple* of any diet. *See* Greenberg, *supra* note 29. Historically, sushi in Japan consisted of smaller, white-fleshed fish. *Id.* Red-fleshed fish, like bluefin, was looked down upon as a low-class food due to its tendency “to

facing extinction, its mercury content presents a serious health risk to those who choose to indulge.²²⁶ Consumers have strong incentives to avoid bluefin—the problem is that many consumers are simply unaware of them. If efforts to protect the species by managing supply are failing,²²⁷ and if the power to end the bluefin's demise lies within the consumer,²²⁸ then raising consumer awareness may be the final line of attack in the battle for bluefin.

The threat of extinction for the Atlantic bluefin has been likened to that of the giant panda,²²⁹ yet concern for each species' survival is blatantly unequal.²³⁰ Due to many widespread environmental issues prevalent in the world today, overfishing has “tended to be a peripheral issue on the contemporary environmental agenda.”²³¹ Unfortunately, it has become clear that “the fisheries of the world are in decline and the obvious culprit is people.”²³² Increasing awareness of the bluefin's threatened state, its mercury content, sustainable alternatives, and the benefits of those alternatives could comprise the solution to bluefin overfishing. To increase consumer awareness, the government should support those organizations already taking steps to do so. The government should support eco-labeling programs, like the MSC, by developing laws that set a standard for sustainable labels and then actively enforce that standard by prohibiting fraudulent claims of

spoil quickly and develop a noticeable stench.” *Id.* It was not until the 1960s that bluefin became popular in Japan, and not until the late 1970s that its popularity began to rise in the United States. *Id.*

226. *See supra* Section III.B.

227. *See supra* Section I.B-D.

228. *See supra* Section II.

229. CLOVER, *supra* note 18, at 27.

230. The Sea Shepherd Conservation Society created an impactful campaign ad that demonstrates the unbalanced concern for pandas over bluefin. To view the campaign's graphic portrayals of a bluefin-like harvest and market of pandas, see *When You See a Tuna, Think Panda*, ADS-NGO.COM (Mar. 2, 2011), <http://www.ads-ngo.com/2011/03/02/when-you-see-a-tuna-think-panda>. The image of a panda bears lined up on the floor of a fish market, or piled up by the dozens in a boat, triggers a disappointing realization that the two species are simply not thought of as equally worthy of preservation.

231. CLOVER, *supra* note 18, at 3.

232. THE COVE (Lionsgate 2009). The consumer should be presented with “accurate and honest information about the likelihood of high mercury levels” in bluefin. TRENOR, *supra* note 1, at xiv.

sustainability. Furthermore, in light of the potentially dangerous levels of mercury contained in bluefin, and thus elevated risks of mercury exposure, the FDA should reevaluate its recommendations for tuna consumption, making clear the increased risk of consuming a larger fish, like bluefin.²³³ Environmental right-to-know laws, like California's Proposition 65, should be utilized to communicate the potential risks of bluefin.

Continuing existing regulatory efforts while also impacting consumer demand is essentially addressing the issue of overfishing from both sides of the equation.²³⁴ The result would be a more effective approach to fishery conservation and a better chance at preserving the Atlantic bluefin tuna.²³⁵

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234. See generally Cooper, *supra* note 145.

235. Many in the world of sushi have come to love bluefin tuna. TRENOR, *supra* note 1, at 20. The unfortunate truth is that “*we are loving it to death.*” *Id.* (emphasis added).

* Juris Doctor Candidate, California Western School of Law, Spring 2012; For their continual love and support, I would like to thank my family, with a special thanks to my fiancé Ryan. For all of her help throughout this writing process, I am especially grateful to my sister Jessica. I would like to thank Professors Andrea Freeman and John Noyes for their guidance and encouragement. Thank you to the *International Law Journal* editorial board and associates who helped prepare this comment for publication, specifically David Beaudreau, for his helpful feedback, time, work, and careful attention to this comment. I also want to thank my friends in the sushi industry, without whom this comment would not exist. Thank you to Chef Kevin Martinez for being my mentor and giving me the opportunity to work behind the sushi bar. Thank you to Chi and Tizzy Chen and the entire crew at Off the Hook for all the kindness and good times. Most especially I want to thank my friend and former colleague Martin Bush for introducing me to the notion of sustainable sushi—please continue to spread the word.