

PRESSURES TO REDUCE BYCATCH ON THE HIGH SEAS: AN EMERGING INTERNATIONAL NORM

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I. INTRODUCTION

The need for effective measures to prevent indiscriminate capture of marine mammals and other species has become an important issue.¹ The unintentional capture of seine marine species while fishing for other species is known as "bycatch." Bycatch includes commercially valuable fish; fish with no commercial value, although they may have a future commercial value; and marine life such as mammals and seabirds, which usually are not caught as a food source. The capture of each of these kinds of bycatch is changing fishing practices around the world. For example, concerns over the continued viability of some species of whale, dolphin, and seal have resulted in international pressures to modify or eliminate some fishing techniques entirely.² Overfishing of commercially valuable species is also becoming a cause for the concern over bycatch.³ Eighty percent the world's catch comes from marine animal resources.⁴ It is estimated that twenty-eight percent of the world's marine fish stock is overfished.⁵ This phenomenon has resulted in rapid shifts in the species of fish taken for commercial exploitation.⁶

This article assesses the current state of legal tools available to manage and limit the amount of bycatch from high seas fish-

1. "Walls of Death!" the newspapers cried as the problem of indiscriminate fishing techniques exploded into the public consciousness. See, e.g., *U.S. to Back Ban on "Wall of Death" Fish Nets*, CHI. TRIB., Oct. 12, 1989, § 1, at 4; *Ban on "Walls of Death" Gaining*, CHRISTIAN SCI. MONITOR, July 21, 1989, at 6; *The "Wall of Death" Goes*, TIME, Dec. 9, 1991 at 53.

2. See *infra* text accompanying notes 130-38.

3. For purposes of this discussion, overfishing means the reduction of stocks to historically low levels requiring substantial reduction in the number of vessels able to economically exploit the stock. See Brian J. Rothschild, *Achievement of Fisheries Management Goals in the 1980's*, in GLOBAL FISHERIES: PERSPECTIVES FOR THE 1980s 151, 152 (Brian J. Rothschild ed., 1983).

4. W. ROYCE, FISHERIES DEVELOPMENT 57 (1987); see also, U.N. FAO, Review of the State of the World Fishery Resources, at 83, U.N. Doc. No. FIRM/C710 (Rev. 7) (EN) (FAO Fish. Circular 710, 1989) [hereinafter FISHERY RESOURCES].

5. This percentage, however, is much higher in many areas. In the Northeast Atlantic, 11 out of 19 stocks in the region are overexploited. Roger Fitzgerald, *The Future of Fish*, SEAFOOD LEADER, Jan.-Feb. 1991, at 98 (quoting Dr. D. Lee Alverson).

6. *Id.*

eries. The article concludes that an emerging norm exists, as evidenced by various declarations, treaties and state behavior, to regulate bycatch and manage resources on the high seas—an area traditionally unregulated. Part II of this article assesses some of the causes for increased attention to bycatch and its management. Part III examines what is meant by “international norms” and “emerging norms.” Part IV examines three cases in which the United States has taken steps to limit severe bycatch in specific fisheries. Part V examines some of the historical precedents and justifications for these actions. Part VI examines possible outcomes of efforts to limit bycatch on the high seas.

II. CAUSES FOR INCREASED ATTENTION TO BYCATCH

A. Increased Public Attention to Bycatch

Much of the recent attention to the problem of indiscriminate⁷ capture of marine species has come as a result of video film footage and widely publicized reports of driftnet fishing practices.⁸ The graphic depiction of the disposal of marine mammal bycatch from purse seine nets in the Eastern Tropical North Pacific regions has shocked many.⁹ While the media has done much to promote the issue, various fishing interests have also become more aware of the issue. Concern over the incidental take of salmon in the Pacific has led Alaskan fishing organizations to vigorously oppose the driftnet fishing practices. In addition, government efforts to reduce bycatch by the trawl fleet in the Pacific Northwest have convinced many fishers that the issue is here to stay.¹⁰ Some fishers have even invested in trawl-gear,

7. Some driftnets are reportedly as long as 30 to 39 miles long and take over 12 hours to haul aboard.

8. In the North Pacific, environmentalists posed as nature photographers in search of whales. After locating driftnet fishing boats, they then talked their way on board and recorded fishing operations using a small home video camera. *The MacNeil/Lehrer Newshour: Sea Hunt* (PBS television broadcast, June 27, 1989).

9. As the individual responsible for many of these photographs, biologist Sam LaBudde stated, “When you see something, it’s a visceral reaction. It forces a change from abstract knowledge to real knowledge.” *SF Biologist Wins Environmental Award: He Filmed Slaughter of Dolphins Caught in Tuna Nets*, S.F. CHRON., Apr. 22, 1991, at A2.

10. The retention of halibut, tanner crab (*Chionoecetes bairdi*), and red king crab are also prohibited. In the Fall of 1990, the North Pacific Fisheries Management Council (NPFMC) proposed a “penalty box” system whereby fishers who exceeded established rates of bycatch would be temporarily suspended from fishing. The proposed rule was rejected by the National Marine Fisheries Services (NMFS) for various practical reasons, including the difficulty in imposing the penalty in a timely manner. Letter from Steven Pennoyer, Director, NMFS, to Don Collinsworth, Chair person, NPFMC (Nov. 9, 1990) (on file with the *Tulane Environmental Law Journal*).

which reduces the amount of bycatch netted before regulation forces further restrictions on fishing activities.¹¹

B. Shrinking Oceans — Expanding Fleets

The expansion of coastal state jurisdiction to 200 nautical miles, coupled with the growth of domestic fisheries,¹² has forced traditional fishing fleets away from coastal fishing grounds to high seas areas.¹³ With increasing restrictions on access to coastal fishing grounds, states often opt to exploit high seas fish to avoid regulation and registration fees.¹⁴

Evidence of increased fishing pressure is apparent from the decreasing time it takes for fisheries to become over-capitalized or exhausted. One researcher has calculated the average time it takes to exploit a typical fishery from one-half its capacity to

11. Telephone Interview with Bill West, Northwest Trawl Systems (Feb. 6, 1991).

12. The expansion of domestic fisheries can be inferred from the increase in total world catch, provided that "expansion" includes increasingly effective fishing gear as well as the number of vessels employed. Mick Kronman, *Vessels Adapt to a Changing Mix of Needs and Conditions*, NAT'L FISHERMAN'S Y.B. 1991, at 35, 38.

13. "Less than 9 percent of fish sold in Japan comes from other nations zones, down from 25 percent just 12 years ago." *Japan's Fishing Fleet Trims Sails*, CHRISTIAN SCI. MONITOR, July 25, 1990, at 4 (quoting Minoru Morimoto, Counselor at the Japanese Fisheries Agency).

Expansion of the U.S. fishery conservation zone, coupled with the expansion of the American fishing fleet has led to the exclusion of Asian fishing fleets from the Bering Sea area. See Edward L. Miles & William T. Burke, *Pressures on the United Nations Convention on the Law of the Sea of 1982 Arising from New Fisheries Conflicts: The Problem of Straddling Stocks*, 20 OCEAN DEV. & INT'L L. 343, 348-49 (1989) (discussing the reactions to this development); see also Edward L. Miles & David L. Fluharty, U.S. Interests in the North Pacific 4-5 (Mar. 15, 1991) (unpublished manuscript prepared for the 32nd Ann. Convention of Int'l Studies Ass'n, on file with *Tulane Environmental Law Journal*).

Two European Countries with large fleets, Spain and Portugal, are also being shut out of their traditional coastal fishing grounds. Jane Barnett, *What's Ahead for World Seafood?*, NAT'L FISHERMAN'S Y.B. 1991, at 51, 53.

14. For example, driftnet fishers in the South Pacific exploited high seas tuna in order to avoid paying registration costs associated with taking the tuna from the exclusive economic zones of surrounding countries. High seas fishing exacerbated the management problems by depleting more juvenile members of the species. See Douglas M. Johnston, *The Driftnetting Problem in the Pacific Ocean: Legal Considerations and Diplomatic Options*, 21 OCEAN DEV. & INT'L L. 5, 8 (1990).

Comparisons of areas fished between 1970 and 1974 with areas fished between 1983 and 1987 showed dramatically increased catches in the Indian and Antarctic Oceans (+39,091.47%), the East Indian Ocean (+154.89%), the Southwest Pacific (+152.22%), and the Eastern Central Pacific (+126.05%). Lawrence Juda, *World Marine Catch in the Age of Exclusive Economic and Exclusive Fishery Zones*, 22 OCEAN DEV. & INT'L L. 1, 16 (1991). Professor Juda postulates a variety of responses to the enclosure of ocean spaces including increasing joint-venturism, exploitation by local fleets, and exploration less utilized high seas areas such as the Bering Sea and Antarctic Ocean. *Id.* at 13-15.

fully exploited;¹⁵ during the 1960s this process took about a decade, however, by the end of the 1970s the time had dropped to two years.¹⁶

Expansion of fleets has led to increased competition between nations' fishing fleets. The expansion of fleets has led to larger fishing vessels¹⁷ and factory ships capable of processing thirty tons of fish in a two hour period.¹⁸ The most dramatic example of this increase is the explosion of large-scale driftnet vessels in the Pacific Northwest.¹⁹ While large-scale driftnet fishing was almost nonexistent in the area two decades ago, in 1983, approximately one million miles of net per year were fished in the North Pacific by approximately 700 vessels. Moreover, within five years, these figures had increased to two million miles of net per year by over a thousand vessels.²⁰

15. That is the time it takes a fishery to go from 50% of maximum sustainable yield (MSY) to MSY. J.F. Caddy, *An Alternative to Equilibrium Theory for Management of Fisheries*, in U.N. FAO, EXPERT CONSULTATION ON THE REGULATION OF FISHING EFFORT (FISHING MORTALITY) 173, U.N. Doc. No. FIPP/FIRM/R289 (FAO Fisheries Rep. No. 289, Supp. 2, 1983). For a discussion of the concept of MSY see *infra* note 49 and accompanying text.

16. *Id.* at 176; see also Francis T. Christy, *Property Rights in the World Ocean*, 15 NAT. RESOURCES J. 695, 703 (1975).

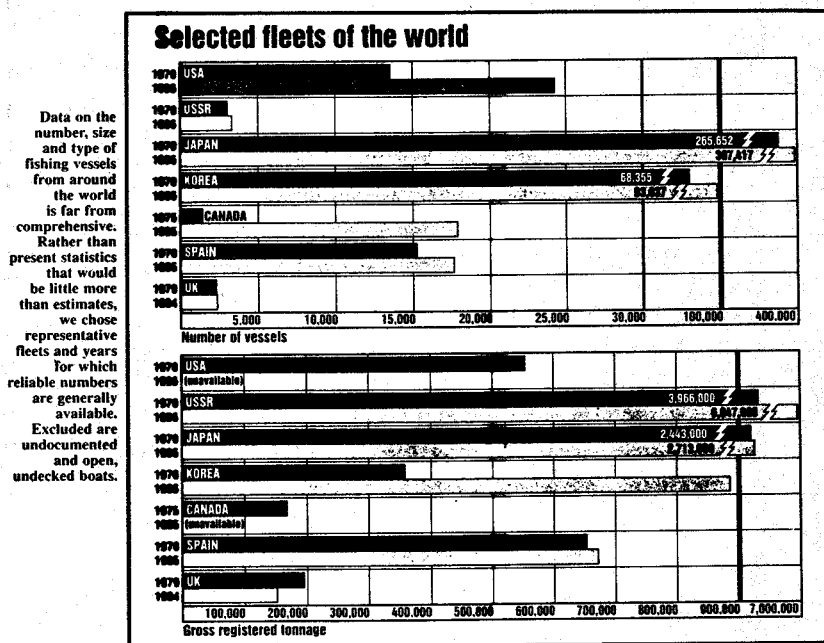
17. For example, between the 1950s and the 1980s, the average tonnage of shrimp trawler vessels in the Gulf of Mexico increased by 2.6% per year. Large increases in shrimp trawler size occurred on the Pacific coast of Mexico, the coast of West Africa, and the Kuwait coastal fisheries.

18. Interview with Karen Walters, former NMFS Observer in the Gulf of Alaska, in Seattle, Wash. (May 16, 1991).

19. Typically, large-scale driftnets are an enlarged version of a salmon gillnet, a type of net which has been used for at least 100 years in coastal areas. See, e.g., CONSULATE-GEN. OF JAPAN, THE JAPANESE HIGH SEAS DRIFTNET FISHERIES, app. I, at 2 (1990). The larger varieties sometimes extend 30 miles in length and reach 40 feet in depth. See, e.g., Leslie A. Davis, Comment, *North Pacific Pelagic Driftnetting: Untangling the High Seas Controversy*, 64 S. CAL. L. REV. 1057, 1057 (1991).

20. David Benton, *Alaska and the Fisheries of the North Pacific and Bering Sea*, ALASKA'S WILDLIFE, July-Aug. 1990, at 13, 17; *Closing in on the Driftnets*, SEATTLE TIMES, Jan. 6, 1991, Pacific Sec., at 12. A formal count of fishing tans (50 meter net sections) of just the Japanese squid driftnet fishery and the Taiwanese large-mesh driftnet fishery places the figure at 732,000 miles of net. Telephone Interview with James Coe, Coordinator for Driftnet Research Program, NMFS (Oct. 24, 25, 1991).

INCREASES IN THE WORLD'S FLEET



Source: Mick Kronman, *Vessels Adapt to a Changing Mix of Needs and Conditions*, NAT'L FISHERMAN'S Y.B. 1991, at 35, 38.

Expansion of fishing fleets has caused similar problems in the South Central Pacific region. The expansion of the United States tuna fleet to five times its previous size (although it has since declined)²¹ resulted in increased attention to the bycatch of spinner²² and spotted dolphins.²³ Other nations are taking significant numbers of these species as well.²⁴

21. Much of this expansion occurred between 1947 and 1955 when the fleet grew from 140 vessels to 212 vessels, with an increase in gross tonnage of 83%. Harry N. Scheiber, *Pacific Ocean Resources, Science, and Law of the Sea: Wilbert M. Chapman and the Pacific Fisheries, 1945-70*, 13 *ECOLOGY L.Q.* 381, 502 & n.403 (1986).

At its height, the San Diego tuna fleet numbered 450 vessels. Only a few still use San Diego as a base, however, and those vessels are expected to be sold soon. *Sun Sets on Fleet: San Diego Fishermen Squeezed by Economics, Environment*, L.A. TIMES, Oct. 7, 1991, at 1.

22. *Stenella longirostris*.

23. *Stenella attenuata*.

24. The environmental group, Environmental Investigation Agency, estimated 44,000 dolphins were killed in 1989. *Killings Tallied of Dolphins, Small Whales: Conservation Groups Appeal for Action*, WASH. POST, July 5, 1990, at A13. Other investigators place the mortality for spinner dolphins at 22,000 out of a total population of 2.5 million. S. Northridge, U.N. FAO, *AN UPDATED WORLD REVIEW OF INTERACTIONS BETWEEN MARINE MAMMALS AND FISHERIES* 40 (FAO Fish. Tech. Paper No. 251, Supp. 1, 1991).

Expansion of the world's seafood market has greatly increased the value of some species of fish caught on the high seas.²⁵ Economic pressure to return to port with only high-valued fish encourages fishers to discard lower-valued commercial catch. In the North Pacific, "just about every commercially valuable species is currently harvested at maximum levels."²⁶ One side effect of high bycatch rates is the closure of fishing in that region.²⁷

C. The Elimination of Bycatch to Improve Yields

Recently, the Director General of the Food and Agriculture Organization of the United Nations (FAO) cited wasteful commercial fishing practices as significantly endangering the marine environment and the sustainability of marine resources. The Director General recommended better use of incidental catch and the reduction of post-catch losses to help provide for the high demand for fish protein.²⁸

Projections on the total yield available for the world's oceans indicate that waste in high seas fisheries must be eliminated for the yield to continue to grow. Worldwide catch statistics show dramatic increases in the tonnage of fish caught.²⁹ Though there has been rapid growth in fish production in developing countries, it has not kept pace with population growth.³⁰ Except for demersal species in the Eastern Central Pacific and some Indian Ocean stocks, most conventional marine resources are fully exploited.³¹ Accordingly, most estimates of world

25. Barnett, *supra* note 13, at 52.

26. *Groundfish Discards: A Challenge to Fisheries Managers*, PAC. FISHING NEWS, Jan. 1991, at 46.

27. "In part of the Bering Sea [in 1990], by-catch triggered closures went into effect at the end of May and then in the entire area at the end of June, closing bottom trawl fisheries on cod and pollack." *Id.* at 48.

28. *FAO: World Commercial Fishing Suffering from Decline in Fish*, Inter Press Wire Serv., Apr. 8, 1991, available in LEXIS, Nexis Library, Currnt File.

29. Much of the increase in world catch occurred between the late 1950s and the 1960s. The latest trend shows a worldwide increase of 3.3% per year. This increase is largely (81.8%) due to greater exploitation of pelagic and semidemersal species in the North and South Pacific Oceans. The Peruvian anchovy, the South American sardine, the Japanese sardine, and the Alaska pollack account for most of the increase. FISHERY RESOURCES, *supra* note 4, at 4.

30. M. A. ROBINSON, U.N. FAO, Pub. No. 722 Prospects for World Fisheries to 2000, at 2, U.N. Doc. FIPP/C722/(Rev.1) (FAO Circular No. 722, 1982).

31. FISHERY RESOURCES, *supra* note 4, at 4, 51. Tuna stocks in the Indian Ocean are thought by some to be underutilized.

marine catch project limited growth in the future.³² These estimates range from zero to twenty million metric tons above the current rate.³³ Current increases in landings are largely dependent on shoaling pelagic species, such as Alaska pollack, whose populations can fluctuate widely.³⁴

Current estimates of marine bycatch range from between five and twenty-one million tons per year.³⁵ According to the 1988 figure for marine catches, this yields an estimate of over ten percent of the total catch discarded or unused.³⁶ This figure is probably higher on the high seas given the disproportionately higher levels of bycatch of both pelagic and demersal species.³⁷ Greater regulation of bycatch could supply an important contribution to the need for increased catches.³⁸

32. *Id.*; ROBINSON, *supra* note 30, at 2.

33. FISHERY RESOURCES, *supra* note 4, at 4, 51; W. Krone, *Trends in International Markets for Marine Products*, in FISHERIES DEVELOPMENT: 2000 A.D. 201-02 (K. Trivedi ed., 1986).

34. FISHERY RESOURCES, *supra* note 4, at 4, 51 tbl. 15. Fish farming is also becoming an increasingly significant source of protein. However, many of the farmed fish are genetic hybrids which makes their release in the wild risky. *See generally*, Mike Toner, *Are Test-Tube Fish Such a Hot Idea?*, 21 INT'L WILDLIFE 34 (1991) (discussing some of the successes and failures in this area).

35. Compare S. B. SAILA, U.N. FAO, Importance and Assessment of Discards in Commercial Fisheries 9, U.N. Doc. FIRM/C765 (FAO Circular 765, 1983) (3.5 million tons, recognized as a "conservative" estimate) with Kevin J. Whittle, *A Vital Role for Aquatic Resources in Feeding a Hungry World*, in 5 INFOFISH MARKETING DIGEST 20, 21 (1984) (estimates place the figure between 3 and 21 million tons); *see also* Krone, *supra* note 33, at 203; Bricklemeyer et al., *Discarded Catch in U.S. Commercial Marine Fisheries*, in AUDUBON WILDLIFE REPORT 1989/1990 259, 261 (W. Chandler ed., 1990).

36. SAILA, *supra* note 35, at 2. The International Union for Conservation of Nature and Natural Resources (IUCN) estimates the amount to be more in the neighborhood of 20% to 25% of the total world catch discarded. IUCN, *World Conservation Strategy*, Part IV, reprinted in XXII INTERNATIONAL PROTECTION OF THE ENVIRONMENT: TREATIES AND RELATED DOCUMENTS 439 (Bernd Ruster et al., eds., 1987).

37. SAILA, *supra* note 35, at 7.

38. Perhaps, it is premature to expect this as a source of increased world protein given that the high seas bycatch is largely a product of the fishing fleets of the developed world, which are without need for increased catch.

Further, a large proportion of the world's catch, estimated at 17% of the total retained catch, is used to feed livestock instead of humans. R.P. ANAND, INTERNATIONAL LAW AND THE DEVELOPING COUNTRIES: CONFRONTATION OR COOPERATION? 288 (1987). Were protein to become a vital resource, direct consumption of fish for protein would be far more economical. Modern farmed fish consume an average of 2 pounds of feed per pound of meat produced, contrasted with beef which requires 15 pounds of feed per pound of meat produced. Toner, *supra* note 34, at 34. Nevertheless, it is perhaps unrealistic to think that developed countries will forgo current culinary preferences for beef and terrestrial protein to feed a starving third world. This has not been the recent experience.

D. Increased Opportunities Through Technological Innovation

Until recently, the ability to catch as much fish as efficiently possible has been the overriding force in the fishing industry. At least three significant technological breakthroughs have been instrumental in increasing the fish harvest: the development of mechanical propulsion in the late 1800s, the advancements in electronic finding aids, and the invention of synthetic netting material able to withstand the greater stress associated with larger nets.

Changes in the construction and design of fishing vessels have significantly increased the capacity of fishers to reach distant areas. A typical trawler in the North Pacific can routinely catch thirty tons of cod in a two-hour trawl, deliver the catch to a factory trawler nearby, and return to fishing in a relatively short period of time.³⁹ The use of helicopters and seaplanes to locate fish has also significantly increased the potential to locate and capture stocks. In addition, sonar and other underwater devices have assisted fishers in locating and selecting large schools of commercially valuable species.⁴⁰

New designs in fishing tackle have permitted greater harvesting potential and a greater potential for impacting the ecology of an ocean area. Changes in the construction of fishing gear have provided new opportunities to fishers. The use of winches and synthetic materials has dramatically increased the efficiency of trawler nets.⁴¹ Use of higher strength filaments have allowed the development of large-scale driftnets, which were impractical with natural fiber nets.⁴² The dramatic effect of this technology on limited stocks of fish, such as the albacore in the South Pacific,⁴³ has led some nations to ban the fishing

39. Interview with Karen Walters, *supra* note 17.

40. The prospect of using underwater cameras to locate and guide nets for the capture of pelagic species is now on the horizon. Telephone Interview with Bill West, *supra* note 11.

41. *Id.* The use of high strength synthetic materials allows the codends of trawl nets to balloon open under water at lower trawl speeds, thereby allowing greater specificity in capturing slow moving fish.

42. *Large-Scale Pelagic Driftnet Fishing and Its Impact on the Living Marine Resources of the World's Oceans and Seas: Report of the Secretary-General*, 45th Sess., Agenda Item 79, at 8, U.N. Doc. A/45/663 (1990) [hereinafter *Report of the Secretary-General*].

43. See generally J. HAMPTON ET AL., SOUTH PACIFIC ALBACORE OBSERVER PROGRAMME 1988-89 (1989) (discussing the effect of the fishing gear on albacore tuna stocks).

practice.⁴⁴

E. Changing Concepts of Adequate Management

Changes in the way fisheries' scientists understand fish production have contributed to the concern over bycatch. Since the turn of the century, the classic model for management of fish stocks focused on the minimum density of stock (adult fish) to provide sufficient recruitment (young fish) to maintain an adequate population.⁴⁵ Frequently, changes due to environmental factors dramatically affect the fish population.⁴⁶ Thus, limiting bycatch can be an important method of stabilizing depleted species⁴⁷ and conserving abundant species for later exploitation.⁴⁸

Management tools for assessing the individual and social costs also indicate a trend toward greater control of fishing activities. Achieving a maximum sustainable yield (MSY) is typically the starting point for managing fish species. MSY "is the greatest harvest that can be taken from a self-regenerating stock of animals year after year while still maintaining the constant average size of the stock."⁴⁹ This idea has proven useful in single species fisheries where a linear relationship exists between fishing

44. See *infra* notes 138-45 and accompanying text.

45. The work of J. Hjort in assessing food availability to larval recruits is often cited as a forerunner of current theory. Present day models vary the effects of different factors such as density, predation, other environmental changes. See Warren S. Wooster & Kevin M. Bailey, *Recruitment of Marine Fishes Revisited*, in *Effects of Ocean Variability on Recruitment and on Evaluation of Parameters Used in Stock Assessment Models: Proceedings of the International Symposiums Held at Vancouver, British Columbia, Oct. 26-29, 1987*, at 153, 155 (Canadian Special Publication in Fishery and Aquatic Science 108, 1989) (discussing some of these models).

46. To the extent that environmental factors influence the size of fishing stocks, the bycatch problem will not significantly deter diminution of the stock size although it will surely alter species interaction and therefore change the dynamic. Some researchers postulate long term shifts in environmental parameters that may affect variability. See Wooster & Bailey, *supra* note 45, at 156-57. Other researchers argue that these shifts may be associated with predictable trends in recruitment. J.H. Steele, *Kinds of Variability and Uncertainty Affecting Fisheries*, in *EXPLOITATION OF MARINE COMMUNITIES* 245, 251-54 (R.M. May ed., 1984).

47. See *infra* notes 302-06 and accompanying text for a discussion of the regulation of bycatch in the North Sea.

48. This phenomenon has occurred in the Hawaiian Islands fishery where previously undervalued Opakapaka (a type of snapper) became increasingly valuable as they gained acceptance on the local market. Before that time, they were considered valueless bycatch and tossed overboard.

49. De Klemm, *Living Resources of the Ocean*, in *THE ENVIRONMENTAL LAW OF THE SEA* 70, 80 (D. Johnston ed., 1981) (quoting *The Conservation of Wild Living Resources, Report of the Workshops held at Airlie House, Virginia* (S. Holt & L. Talbot eds., 1975)).

activities and stock size.⁵⁰ It is much harder, however, to define the MSY for multiple species in a fisheries area⁵¹ because significant scientific understanding of the interaction between various species in multi-species fisheries is lacking.⁵² This lack of information makes enforcement and monitoring extremely difficult.⁵³ Yet, initial studies show a deterioration of groundfish stocks where bycatch rates are relatively high.⁵⁴ Limits on bycatch may provide an important margin of safety in the face of scientific uncertainty.⁵⁵

Modifications to the MSY concept have sought to manage fisheries as a whole. The frequently used concept of "optimum sustainable yield" seeks to ascertain the appropriate yield based on the aggregate of local stocks and the fishing community those

50. The current theory of fishery biology points to many disturbing, although uncertain, developments as a result of overfishing certain species. Overfishing may harm the total stock of fish in two ways: (1) reducing the number of new fish (recruits) to replenish the stock (recruitment overfishing), and (2) capturing immature fish (growth overfishing). Recruitment overfishing impacts the fecundity of the spawning stock. Younger fish tend not to be as fecund in producing viable larvae, while shifting the balance of the age of the stock inhibits natural selection to favor older surviving fish. Much of the concern for bycatch in the tuna fishery is the capture of immature tuna. See *United States — Restrictions on Imports of Tuna* 20 [hereinafter GATT Panel Report] GATT Doc. DS21/R (Sept. 3, 1991) (on file with the *Tulane Environmental Law Journal*) (Report of the Panel).

51. Relative to other areas, northern ocean fisheries tend to have fewer multispecies fisheries. However, it is in the northern Pacific and Atlantic oceans that catch of prohibited (or highly protected) species requires management of the catch of other species in the fishery. Thus, although not a true multispecies fishery, the management criteria is similar.

52. "[C]lear and unambiguous evidence of interspecific interaction in major marine ecosystems, which could be used directly to achieve a significant improvement in single species assessments, as yet hardly exists." R.J.H. Beverton et al., *Dynamics of Single Species, Group Report*, in EXPLOITATION OF MARINE COMMUNITIES 12, 46 (R.M. May ed., 1984); see also P.A. Larkin, *An Epitaph of the Concept of Maximum Sustained Yield*, 106 TRANSACTIONS AM. FISHERIES SOC'Y 1, 7 (1977). There have, of course, been attempts to refine this concept for modern fishing practices and our knowledge of species interactions. Even more current models rely on MSY as a foundation. MSY's greatest practical value has been as part of a simple model of the biological facts on which management is based. J.A. Gulland, *Introduction: Some Notes for the Consultation on the Regulation of Fishing Effort*, in U.N. FAO, EXPERT CONSULTATION ON THE REGULATION OF FISHING EFFORT (FISHING MORTALITY) 1, 3, U.N. Doc. No. FIPP/FIRM/R289 (FAO Fisheries Rep. 289, Supp. 2, 1983). Gulland has argued that adaptive use of MSY is presently the only means of regulating multi-species fisheries. J.A. Gulland & S. Garcia, *Observed Patterns in Multi-Species Fisheries*, in EXPLOITATION OF MARINE COMMUNITIES 155 (R. M. May ed., 1984).

53. Telephone interview with Hal Meeks, Bering Sea Planning Coordinator, North Pacific Management Council Anchorage, Alaska (Feb. 6, 1991).

54. See *infra* notes 171, 307 and accompanying text.

55. Studies on the effects of bycatch in the Gulf of Mexico area indicate an impact on the groundfishery, although differ as to whether there is a significant impact. See SAILA, *supra* note 35, at 15 (reporting these studies).

stocks support. MSY remains a starting point for this analysis, but environmental and economic considerations, including the effects on associated species are also important.⁵⁶

III. WHAT IS AN EMERGING INTERNATIONAL NORM?

As a preliminary matter, it is important to define what is meant by an "emerging norm of international law." While the term is used frequently by authors discussing a variety of international circumstances,⁵⁷ it is rarely defined. Norms are constraints on otherwise permissible action by states. The International Court of Justice has used the term, on occasion, almost synonymously with the customary international law binding on all states.⁵⁸ Others seem to use the term as synonymous with nonbinding, "soft" international law.⁵⁹

The ambiguity surrounding emerging norms is not without justification. The process is a gradual one by which the continued practices of states crystallize into a binding obligation on all states. A better understanding of emerging norms is achieved by first examining what is meant by "binding" and "nonbinding" norms.

A. Binding Norms

Typically, customary international norms are thought to be binding. This stems, in part, from the popular idea of norms as denoting prescriptive authority to regulate behavior. Indeed, some authors have identified the ability to prohibit behavior as the essential characteristic of international norms.⁶⁰ The strong-

56. Indeed optimum sustainable yield has become nearly an international standard for management. The Convention on Fishing and Conservation of the Living Resources of the High Seas defines conservation as "the aggregate measures rendering possible the optimum sustainable yield of those resources so as to secure a maximum supply of food and other marine products." done Apr. 29, 1958, art. 2, 17 U.S.T. 138, 140 [hereinafter Convention on Fishing].

57. See, e.g., Jonis Charme, *Transnational Injury and Ultra-Hazardous Activity: An Emerging Norm of International Strict Liability*, 4 J.L. & TECH. 75 (1989).

58. For example, in *Continental Shelf (Tunis. v. Libya)*, the court stated it could not "ignore any provision of the [August 1981] draft convention [on the law of the sea] if it came to the conclusion that the content of such provision is binding upon all members of the international community because it embodies or crystallizes a pre-existing or emergent rule of customary law." 1982 I.C.J. 18, 24 (Feb. 24).

59. See Jonathan Carlson, *Hunger, Agricultural Trade Liberalization, and Soft International Law: Addressing the Legal Dimensions of a Political Problem*, 70 IOWA L. REV. 1187, 1195 (1985).

60. See, e.g., Gunther Handl, *National Uses of Transboundary Air Resources: The International Entitlement Issue Reconsidered*, 26 NAT. RESOURCES J. 405, 405-09 (1986).

est statement of the traditional approach to international norms defines a norm as binding *erga omnes*.⁶¹

The oft-repeated formula for the formation of customary international norms states that a norm or custom becomes binding when: (1) The general and consistent practice of states evidences that (2) states have a sense of legal obligation to follow such practice.⁶² Thus, norms first have an objective "behavioral" component, and secondly a subjective sense of obligation, frequently labeled *opinio juris*.⁶³

Though examples of binding customary norms regarding the high seas are difficult to find, a good example is the prohibition of piracy on the high seas.⁶⁴ Yet, even with this long established and fairly clear customary norm, considerable controversy exists.⁶⁵ How does one distinguish acts of piracy from politically motivated acts of terrorism?⁶⁶ Moreover, how does one construe particular incidents with regard to their effect

61. An example of this kind of binding norm is reflected in *Fisheries Case (U.K. v. Nor.)*, in which the court sought, as a basis for its decision, the traditional usage of the area to justify the right to use straight baseline along the Norwegian coastline in determining the location of inland waters along coastlines which are indented and fringed with islands. In concluding that custom was sufficient to make such a claim, the court looked to "economic interests particular to the region, the reality and importance of which are evidenced by long usage." 1951 I.C.J. 116, 132 (Dec. 18).

In this context, the use of other considerations, in addition to the use or diplomatic assertions of the state itself, is consistent with the use of customary norms to supplement the expectations of the parties. Thus, in *Delimitation of the Maritime Boundary in the Gulf of Maine Area (Can. v. U.S.)*, Canada and the U.S. exchanged numerous objections as to leasing and fishing activities in the George's Bank area. 1984 I.C.J. 246, 280-281 (Oct. 12). The court refused to use these communications as sufficient to demonstrate acquiescence to sovereign claims to the area. *Id.* at 307.

62. See RESTATEMENT (THIRD) OF THE FOREIGN RELATIONS LAW OF THE UNITED STATES § 102(2) (1987) [hereinafter RESTATEMENT].

63. See *id.* cmt. c.

64. See IAN BROWNLIE, PRINCIPLES OF PUBLIC INTERNATIONAL LAW 238-39 (4th ed. 1990). Indeed this is the only customary international law governing activity on the high seas discussed at any length by this respected author.

65. "Although piracy is the oldest and perhaps only crime over which universal jurisdiction was generally recognized under customary international law, there was no authoritative definition of piracy under customary law." Malvina Halberstam, *Terrorism on the High Seas: The Achille Lauro, Piracy and the IMO Convention on Maritime Safety*, 82 AM. J. INT'L. L. 269, 272 (1988) (footnotes omitted). The ambiguity has been clarified, to some extent by the general acceptance of the definition of piracy provided in Article 15 of the Convention on the High Seas, and Article 100 of the Law of the Sea Convention. See R.R. CHURCHILL & A.V. LOWE, THE LAW OF THE SEA 169 (2nd ed. 1988); BROWNLIE, *supra* note 64, at 239; *Convention for the Suppression of Unlawful Acts Against the Safety of Maritime Navigation* 2, IMO Doc. PCUA 2/5, Ann. 1, (June 2, 1987).

66. See, e.g., Gerald P. McGinley, *The Achille Lauro Affair — Implications for International Law*, 52 TENN. L. REV. 691, 697 (1985).

on the general practice of states? These questions apply to any assertion of an international norm and make identification of an international norm difficult.⁶⁷ Finally, the subjective sense of obligation is hard to divine from the various reactions by states, be it silence or disapproval. Often behavior has a great deal more to do with international courtesy or comity than suggesting a position on a particular international incident.

Based on these criteria, any argument for an international binding norm requiring the reduction of bycatch from fishing activities on the high seas would be strained at best. Under the classic theory, "general international law (or customary law) contains no rules or standards related to the protection of the environment as such."⁶⁸ The effects of the practice are too new and the reactions too diverse to identify any uniformity in practice or unanimity in sentiment regarding these fishing activities. Yet, this is not to say norms concerning the environment are not forming. To understand this distinction better, an examination of nonbinding norms is helpful.

B. *Nonbinding Norms*

Among the various types of nonbinding international norms are so-called "soft" obligations. "Soft" obligations are often thought to denote nonbinding legal norms without prescriptive influence. Frequently, "soft" obligations occur in international agreements as an obligation to either heed recommendations or negotiate further. Agreed upon norms can be weakened through vague reference to the obligations of the parties or vague content as to the actions to be taken. These kinds of agreements are frequently criticized for creating false expectations of a resolution of the problem. Nonetheless, this very ambiguity often allows international agreement to take place; it is often used as a springboard for further negotiation and final resolution of the problem.⁶⁹ In a world of increasing international exchange, the duty to cooperate expressed in "soft" obligations becomes

67. Frequently the characterization of an act as piracy hinges on the perceived legitimacy of the insurgents. Compare BROWNIE, *supra* note 64, at 241 with CHURCHILL & LOWE, *supra* note 65, at 170.

68. Ian Brownlie, *A Survey of International Customary Rules of Environmental Protection*, in INTERNATIONAL ENVIRONMENTAL LAW 1 (L. Teclaff & A. Utton, eds., 1982). Perhaps the only exception to this rule is the norm against transboundary pollution. See *Trail Smelter (U.S. v. Can.)*, 3 R.I.A.A. 1905, 1965-66 (1941).

69. See *infra* note 170 and accompanying text.

increasingly valuable.⁷⁰ Rather than expressing binding norms, these agreements usually are expressed in terms of working arrangements whereby norms are not legislated by international bodies or commissions.⁷¹ Though these arrangements may eventually become codified into law, the absence of codification does not detract from the force they exert on states.

The identification of soft obligations may be less important in determining issues when the law is codified, or agreed upon and state practice is unambiguous. Yet, these characterizations of international law fail to account for the dynamic character of international lawmaking in the absence of settled principles. States frequently use existing mechanisms to extend the scope of international principles to meet the needs of current events. This is especially true given the mounting international concern over the problem of bycatch.⁷²

As will be demonstrated below, expectations about appropriate state and individual behavior on the high seas, as evidenced by multilateral treaties and working arrangements concerning what is considered tolerable and intolerable, demonstrate a movement toward increased intolerance of fishing practices that result in high bycatch rates or threaten severely depleted species despite express law to the contrary.

70. Professor Carlson sums up the views of several scholars on this point:

For some time commentators have recognized that "the growing interdependence of States . . . has vastly increased patterns of cooperation and reciprocal behavior which have not been institutionalized in the traditional modes of lawmaking." This "developing 'co-operative' law of nations" differs from older approaches by binding nations, "not in the traditional rules of abstention and respect, but in positive principles of cooperation for common interest." In this new structure of international obligation the strength and clarity of norms will vary widely. Thus, norms will fit somewhere along a continuum rather than falling into neat categories.

Carlson, *supra* note 59, at 1201 n.56.

71. See generally J.E.S. Fawcett, *Natural Sanctions in International Law*, in GROTIAN SOCIETY PAPERS, 1968: STUDIES IN THE HISTORY OF THE LAW OF NATIONS (C. Alexandrowicz ed., 1970).

72. Some nations have attempted to address the problem, in a limited fashion, at least since the 1923 Halibut Treaty. However, the unanimous consensual support of the United Nations Driftnet Resolution, the establishment of a marine mammal sanctuary in the Indian Ocean, and the extensive regulation of the Northeast Atlantic by the European Community Fisheries Council provide ample evidence of mounting international concern for the common ocean resources. See Council Regulation 320/90, 1990 O.J. (L 36) 1, 2 (amending existing limitations on bycatch by species).

C. *Toward an Emerging Norm for Reduction of Bycatch*

The ability to exercise sovereign rights over the extraction of community resources is changing. Many commentators believe the concept of a sovereign right to resources is eroding.⁷³ A model for the emergence of international norms seeks to identify the norm before it is fully formed, meanwhile gathering evidence so that prediction is possible. The emergence of norms is traced through three phases: 1) exploration of the factual circumstances, 2) characterization of the factual findings and 3) communication of prescriptive policy.⁷⁴

Exploration of factual circumstances is necessary, if for no other reason than to bring the issue to the attention of states. During this phase of formation, a recognition of the problem is an essential prerequisite to the identification of a response to the problem. In other words, recognition of a problem is necessary to investigate the circumstances surrounding its occurrence. In the second phase of norm-building activity, facts are marshalled, organized, and interpreted. "Characterization" of these facts is necessary to formulate various policy options available to the states concerned. This process typically involves an assessment of the consequences of a particular policy as it relates to the individual states and their common interests. Some have argued the care taken in choosing these policy alternatives demonstrates recognition of the need to respond to the problem.⁷⁵ While not considered binding, this behavior suggests "parallel claims by many states made in the context of expectations of reciprocity and mutual tolerance."⁷⁶ Continuation of the agreement supports the mutual expectation of tolerance and reciprocity.⁷⁷

73. See Michael J. Glennon, *Has International Law Failed the Elephant?*, 84 AM. J. INT'L L. 1, 29-30 (1990) (footnotes omitted); Convention on the Regulation of Antarctic Mineral Resource Activities, art. 4(2), June 2, 1988, 27 I.L.M. 868 (1988); RESTATEMENT, *supra* note 62, pt. VI (Introductory Note), §§ 601, 603 (1987); Convention on Wetlands of International Importance, Especially as Waterfowl Habitat, Feb. 2, 1971, 11 I.L.M. 963, 969 (1972); Ved P. Nanda & William K. Ris, Jr., *The Public Trust Doctrine: A Viable Approach to International Environmental Protection*, 5 ECOLOGY L.Q. 291, 294 (1976).

74. Myres S. McDougal & W. Michael Reisman, *The Prescribing Function in World Constitutive Process: How International Law is Made*, 6 YALE STUD. WORLD PUB. ORD. 249, 283-84 (1980).

75. Pierre-Marie Dupuy, *Soft Law and the International Law of the Environment*, 12 MICH. J. INT'L L. 420, 429 (1991) (member states frequently approach "soft" recommendations with the same care exercised in treaty negotiation).

76. McDougal, *The Law of the High Seas in Time of Peace*, XXV NAVAL WAR C. REV. 35, 38 (1973).

77. Some authors have extended this analysis to treaties that contain obligations as well as soft recommendations. It is the required agreements, ironically, that ensure the

Finally, communications of mutual assent may take on a prescriptive character to the extent they express a common ground as a basis regulation:

The final strategic sequence of prescription, often overlooked in jurisprudential models, involves communication to the target community of the policy content of the prescription, activation of authority signals, and the modulation of credible control intentions. [This] [c]ommunication . . . involves a set of techniques . . . aimed at creating shared common subjectivities in the target audience.⁷⁸

In other words, the final stage of norm building achieves some control over the behavior of a "target audience," be it states or individuals.⁷⁹ Unlike traditional models of international norms, this model does not require unanimous adherence by the community of nations and nevertheless binds the parites.⁸⁰

This article will use this model to examine reactions to the bycatch issue, both the denial and the assertion of the existence of an international norm. But, to understand the competing claims to the evolution of limitations on fishing activities on the high seas, a brief examination of the traditional concept of freedom of the high seas is necessary.

D. The Traditional Concept of Freedom of the High Seas

The popular notion that the high seas are free from the

continued viability of the treaty. See R. JACKSON & W. ROYCE, *OCEAN FORUM: AN INTERPRETATIVE HISTORY OF THE INTERNATIONAL NORTH PACIFIC FISHERIES COMMISSION* 23 (1986).

78. McDougal & Reisman, *supra* note 74, at 284; see also Carlson, *supra* note 59, at 1206.

79. Nongovernmental organizations have always played some role, however, and their role is becoming explicitly recognized in the environmental area. See Leiv Lunde, *Environmental NGO's and the Bergen Process Cooptation or Enhanced Influence?*, 10 INT'L CHALLENGES 24, 28 (1990); Dupuy, *supra* note 75, at 421.

80. See, e.g., *Military and Paramilitary Activities (Nicar. v. U.S.)*, 1986 I.C.J. 4, 98 (June 27). Here the court found:

In order to deduce the existence of customary rules, the Court deems it sufficient that the conduct of States should, in general, be consistent with such rules, and that instances of State conduct inconsistent with a given rule should generally have been treated as breaches of that rule, not as indications of the recognition of a new rule.

In a fascinating analysis of this and other passages of the case, one author has argued for the existence of two kinds of customary international norms. The first follows the traditional formula for binding customary norms. The other exists where the parties hold concordant views of the norm, but dispute its application. In the latter case, state practice cannot deny the existence of the norm, merely its content. P.P. Rijpkema, *Customary International Law and the Nicaragua Case*, 20 NETH. Y.B. INT'L L. 91, 93-98 (1989).

authority exercisable by all but a vessel's flag state erroneously oversimplifies the legal status of the high seas. In fact, Hugo Grotius, often attributed with the development of this classic notion of freedom of the high seas,⁸¹ rejected this concept with respect to maintaining the balance of nations. Recognizing the interdependence of states, he asserted that high seas freedom does not permit a change in the natural state of the open ocean.⁸²

Despite this important qualification by Grotius, his analysis has continued to be used to advocate freedom of fishing as a fundamental feature of the high seas. Various multilateral treaties reflect the traditional approach; perhaps the best statement of the regime is article 2 of the 1958 Convention on the High Seas.⁸³ Article 2 states:

The high seas being open to all nations, no State may validly purport to subject any part of them to its sovereignty. Freedom of the high seas . . . comprises, *inter alia*, both for coastal and non-coastal States . . . [f]reedom of fishing These freedoms . . . shall be exercised by all States with reasonable regard to the interests of other States in their exercise of the freedom of the high seas.⁸⁴

The reference to "reasonable regard to the interests of other States in their exercise of the freedom of the high seas" suggests that the states may not abuse this freedom to take fish. The more general doctrine of "abuse of right" could be used to limit the right by extending certain trust obligations over fishing

81. See, Christy, *supra* note 16, at 701-02; MYRES S. McDUGAL & WILLIAM T. BURKE, *THE PUBLIC ORDER OF THE OCEANS* 799 n.193 (1962).

82. Speaking of the condition of the open ocean, Grotius states it "is today and ought in perpetuity to remain in the same condition as when it was first created by nature." HUGO GROTIIUS, *MARE LIBERUM* [THE FREEDOM OF THE SEAS] 27 (R. Mugoffin trans. 1916).

Further, Grotius distinguishes objects *res nullius* which are capable of appropriation from objects incapable of appropriation. "[A]lthough those things are with reason said to be *res nullius*, so far as private ownership is concerned, still, they differ very much from those things which, though also *res nullius*, have not been marked out for common use, such for example as wild animals, fish and birds." *Id.* at 29 (emphasis added). While this principle has in the past been used to justify unfettered fishing, it could easily be used to require a custodial relationship to unappropriable resources which are wasted as bycatch.

83. The language of this provision originated in previous conferences held by the International Law Commission in 1955 and 1956. These formulations, however, stressed the absence of authority on the high seas and ignored customary restraint on high seas activities. These formulations were softened by the 1958 Convention to the extent that the Convention admitted other rules of international law affecting these freedom of the high seas. See McDUGAL & BURKE, *supra*, note 81, at 803.

84. Convention on the High Seas, done Apr. 29, 1958, 13 U.S.T. 2312, 2314, 450 U.N.T.S. 82.

nations.⁸⁵ Some have interpreted this doctrine as a vague formulation of a more specific obligation not to harm the sovereign territory of another state,⁸⁶ or an obligation to act in good faith or reasonableness.⁸⁷ While the doctrine has arisen in various disguises in several opinions of the International Court of Justice,⁸⁸ it has failed to become the basis for decision. Further, the vintage of these cases indicates the doctrine may have given way to a more general usage of equity by the International Court.⁸⁹ Thus, apart from the specific treaty obligations, it does not appear to have the status of a binding international norm.

The failure of the general language of the High Seas Convention to regulate fishing may be due in part to the concomitant acceptance of the 1958 Convention on Fishing and Conservation of the Living Resources of the High Seas. The Convention expressly limits high seas freedoms only to the extent that states are: (1) Bound by treaty, (2) limited by the interests of coastal states,⁹⁰ or (3) otherwise limited by the Convention.⁹¹

Under Article 7 of the 1958 Convention, conservation

85. See, e.g., G.D.S. Taylor, *The Content of the Rule Against Abuse of Rights in International Law*, 46 BRIT. Y.B. INT'L L. 323, 345-50 (1973) (discussing South-West Africa, (Second Phase) (Eth. v. S. Afr.), 1966 I.C.J. 157 (July 18) (Pleadings), wherein the court found a violation of the Mandate to govern South-West Africa by South Africa); see also Certain German Interests in Polish Upper Silesia, 1926 P.C.I.J. (ser. A) No. 7 (May 25) (dictum) (alienation of state property in the territory after a peace treaty signed but before its transfer could constitute a misuse of right as fiduciary).

86. E.g., *Trail Smelter*, III REP. INT'L ARB'L AWARDS 1905, 1965 (1949).

87. BROWNIE, *supra* note 64, at 445; accord BRIAN D. SMITH, STATE RESPONSIBILITY AND THE MARINE ENVIRONMENT 85 (1988).

88. See, e.g., *Barcelona Traction* (Belg. v. Spain), 1970 I.C.J. 324 (Feb. 5) (separate opinion of Judge Ammoun) (abuse of rights described as an international tort); *South West Africa* (Second Phase) (Eth. v. S. Afr.), 1966 I.C.J. 6, 481 (July 18) (separate opinion of Judge Forster); *id.* at 150 (separate opinion of Judge *ad hoc* Van Wyk).

89. See Rudolph Dolzer, *New Foundations of the Law of Expropriation of Alien Property*, 75 AM. J. INT'L L. 553, 579 n.97 (1981) (discussing use of equity in response to the political limitations on the court to observe the will of the states involved); see also *Continental Shelf* (Tunis. v. Libya), 1982 I.C.J. 18, 60 (Feb. 24) ("Equity as a legal concept is a direct emanation of the idea of justice. The Court whose task is by definition to administer justice is bound to apply it. . . . [T]he legal concept of equity is a general principle directly applicable as law."); see generally L.D.M. Nelson, *The Roles of Equity in The Delimitation of Maritime Boundaries*, 84 AM. J. INT'L L. 837 (1990) (discussing its use in the context of maritime boundaries).

90. There were concessions to coastal states contained in the Convention on Fishing and Conservation of the Living Resources of the High Seas, in that coastal states could unilaterally manage straddling stocks until an agreement was reached by the parties concerned. See Convention on Fishing *supra* note 56, at art. 7, 17 U.S.T. at 141-42. However, in no instance was this used to regulate fishing. See, CHURCHILL & LOWE, *supra* note 65, at 230; BROWNIE, *supra* note 64, at 257.

91. Convention on Fishing, *supra* note 56, at art. 1, 17 U.S.T. at 140.

serves as the justification for the extension of sovereignty to the high seas. The Article provides that "[t]he measures which the coastal State adopts . . . shall be valid as to other States only if . . . there is a need for urgent application of conservation measures in the light of the existing knowledge of the fishery."⁹² Unfortunately, widespread acceptance of this formula did not materialize.⁹³ Few states enforced the ability granted under Article 7 to make unilateral claims to high seas stocks adjacent to their territorial waters.⁹⁴ Further, the Convention's requirement of binding dispute settlement over high seas stocks did not require the management of high seas stocks.⁹⁵ Freedom of fishing was the order of the day.

Instead of the "urgent application of conservation measures" contained in Article 7, a concept of preferential rights to manage areas adjacent to a fishery zone gained acceptance. The International Court of Justice reinterpreted the Conventions concerning their acceptance in customary law:

Two concepts have crystallized as customary law in recent years arising out of the general consensus revealed at that [1958] Conference. The first is the concept of the fishery zone, the area in which a State may claim exclusive fishery jurisdiction independently of its territorial sea The second is the concept of preferential rights of fishing in adjacent waters in favour of the coastal State in a situation of special dependence on its coastal fisheries, this preference operating in regard to other States concerned in the exploitation of the same fisheries

92. *Id.* art. 7(2)(a), 17 U.S.T. at 141.

93. CHURCHILL & LOWE, *supra* note 65, at 230.

94. Article 7 reads:

1. Having regard to the provisions of paragraph 1 of Article 6 [regarding productivity of living resources in areas adjacent to the territorial sea], any coastal state may, with a view to the maintenance of the productivity of the living resources of the sea, adopt unilateral measures of conservation appropriate to any stock of fish or other marine resources in any area of the high seas adjacent to its territorial sea, provided that negotiations to that effect with the other states concerned have not led to an agreement within six months.

Convention on Fishing, *supra* note 56, art. 7, U.S.T. at 141-42.

95. Article 4 reads:

1. If the nationals of two or more states are engaged in fishing the same stock or stocks of fish or other living marine resource in any area or areas of the high seas, these states shall, at the request of any of them, enter into negotiations with a view to prescribing by agreement for their nationals the necessary measures for the conservation of the living resources affected.

2. If the states concerned do not reach agreement within twelve months, any of the parties may initiate the procedure contemplated by Article 9.

Id. art. 4, 17 U.S.T. at 140-41.

....⁹⁶

The preferential right to manage fish in adjacent waters has been muted by the dramatic expansion of fishery zones to two hundred nautical miles by a subsequent convention.⁹⁷ Nevertheless, direct impacts on coastal fisheries have been used to limit high seas activities in the past.⁹⁸

In sum, the traditional claim to freedom of the high seas has, since its inception, admitted the right of states to restrict this freedom in the name of conservation of marine resources, not as a trust obligation, but rather as the exercise of a preferential right or interest by affected states.⁹⁹

IV. RECENT ACTIONS TAKEN OVER EXCESSIVE BYCATCH

This section examines the 1989 U.N. Resolution on driftnet fishing, marine mammal bycatch in the Eastern Tropical Pacific, and the response of the United States to the capture of sea turtles in the Gulf of Mexico area.

A. Prohibitions on Driftnet Fishing

As discussed in Part II, the dramatic increase in the number of fishing vessels employing driftnets is part of an overall increase in fishing efforts on the high seas. Small-meshed nets¹⁰⁰ are used to catch salmon of various origin and flying squid. Large-meshed nets¹⁰¹ are used to catch marlin, albacore,

96. In *Fisheries Jurisdiction (U.K. v. Ice.)*, the court also noted: Iceland's unilateral action [in extending its fishery zone] constitutes an infringement of the principle enshrined in Article 2 of the 1958 Geneva Convention on the High Seas which requires that all States, including coastal States, in exercising their freedom of fishing, pay reasonable regard to the interests of other States.

1974 I.C.J. 3, (July 25).

97. See discussion *supra* note 13.

98. See, e.g., discussion of Japanese salmon fishing practices *infra* notes 102-06 and accompanying text.

99. McDougal and Burke outline two different types of claims to regulate use of the high seas: (1) demands by each state to proscribe conduct for its own vessel, and (2) demands by other states to secure economic accommodations of their inclusive use of the oceans. MCDUGAL & BURKE, *supra* note 81, at 868. While the economic or territorial claims may be the motivating force to make the second type of claim, this is not usually the justification provided.

100. The nets typically have a stretched mesh size of 86 millimeters (mm). Steven Pennoyer, *The High Seas Driftnet Fisheries of the North Pacific Ocean*, ALASKA WILDLIFE, July-Aug. 1990, at 32, 33.

101. These range in mesh sizes between 160 and 200mm., depending on the area fished. Compare *id.* (170-180mm) with FORUM FISHERIES AGENCY, THE SOUTH PACIFIC

and skipjack. The nets are used in the South Pacific, the North Pacific, the Eastern Atlantic (off the coast of France and Morocco), and the Indian Ocean. Each region has responded, to some degree, to the use of these nets.

1. The North Pacific Driftnet Fishery

Japan has been fishing for salmon on the high seas since the 1950s, under agreements with the states of origin for the various salmon stocks fished. Russia and Japan agreed on mesh size regulations for driftnets as early as 1953.¹⁰² Since that time, the salmon fishery has declined sharply,¹⁰³ with the exercise by coastal states over anadromous stock, and high seas salmon fishing may be soon eliminated entirely.¹⁰⁴

Concern for the incidental catch of salmon contributed to the initial concern over driftnet fishing in the North Pacific. Subsequent research, has shown that the level of salmon bycatch may not be that consequential.¹⁰⁵ Significant illegal salmon fishing continues,¹⁰⁶ however, which contributes to the wider concerns over the fishing practice.

ALBACORE DRIFTNET ISSUE: DEVELOPMENTS SINCE NOVEMBER 1988, at 6 (update, Jan. 1990) (160-200mm) [hereinafter Report of the FFA].

102. Johnston, *supra* note 14, at 11.

103. Japan and Russia set Japanese quotas in the Northern Pacific at 9,000 tons for 1991, down from 11,000 tons for 1990, and 15,000 tons in 1989. *Japan's Salmon Quota for '91 at 9,000*, Kyodo News Service, Mar. 9, 1991, available in LEXIS, Nexis Library, Currnt File; *Venture Gives Japan 1,000 Ton Salmon Catch in 1990*, Kyodo News Service, June 22, 1990, available in LEXIS, Nexis Library, Currnt File.

104. Current negotiations between Japan and Russia call for a ban on high seas salmon fishing in 1992. *Japan to Accept Ban on North Pacific Salmon Fishing*, Kyodo News Service, Apr. 16, 1991, available in LEXIS, Nexis Library, Currnt File.

105. 10% of the net used in the Japanese squid driftnet fishery was observed to incidentally catch 9,729 salmon. FISHERIES AGENCY OF JAPAN ET AL., FINAL REPORT OF 1990 OBSERVATIONS OF THE JAPANESE HIGH SEAS SQUID DRIFTNET FISHERY IN THE NORTH PACIFIC OCEAN 193 (June 10, 1991) [hereinafter FINAL REPORT OF 1990 OBSERVATIONS OF THE JAPANESE HIGH SEAS]. Approximately 3.9 million salmon were caught by commercial fishermen in 1989. Extrapolating to just the Japanese Squid Fishery, the figures observed would account for only 2% of the fish caught commercially. See *Pirates Plunder Pacific Salmon Fishery*, SEATTLE TIMES, Oct. 13, 1991, at B1.

The 1989 Observer Program reported 79 caught by 4% of the total Japanese squid fleet fishing on the northern border of the North Pacific area where interception would be most likely. FISHERIES AGENCY OF JAPAN ET AL., FINAL REPORT OF SQUID AND BYCATCH OBSERVATIONS IN THE JAPANESE DRIFTNET FISHERY FOR NEON FLYING SQUID (OMMESTEPHES BARTRAMI) 18 (1990) [hereinafter FINAL REPORT OF SQUID AND BYCATCH OBSERVATIONS].

106. Driftnet vessels were caught illegally fishing for salmon in 1990 and 1991. See, e.g., *Three Charged in International Illegal-Salmon Deal*, SEATTLE TIMES, May 13, 1991, at A1, A7.

The squid driftnet fishery developed in the high seas of the North Pacific during the 1970s. After a decade of the fishing practice, concern arose over its effects on marine mammals and associated species. Pilot observation studies conducted by the United States National Oceanographic and Atmospheric Administration (NOAA) and Canada's Department of Fisheries and Oceans (DFO) showed that sizeable quantities of marine mammals were taken by the driftnets.¹⁰⁷ Concerns over the effects of driftnet fishing increased after lower than expected catches were reported in the Northeast and Southwest Pacific Ocean.¹⁰⁸ Some estimated that forty million salmon were incidentally caught and fifty-thousand marine mammals killed.¹⁰⁹

In 1987, the U.S. Congress passed the Driftnet Impact Monitoring, Assessments, and Control Act.¹¹⁰ Under this legislation, the United States was to reach agreements with the high seas driftnetting nations of Japan, Korea and Taiwan, to provide a "statistically reliable" assessment of the impact on high seas resources.¹¹¹ Failure to reach such an agreement authorized the Department of Commerce to certify the driftnet fishing nation to the President for possible trade sanctions.¹¹² Japan reached agreement with the United States at the last minute, and extensions given to Korea and Taiwan prevented trade sanctions from being imposed. No new agreements have been negotiated because the United States maintains that driftnetting must cease by June 30, 1992, the deadline set by 1984 the U.N. Resolution on Driftnet Fishing.¹¹³

107. In the 1986 NOAA study, 70 marine mammals were taken in 30 net sets between July 1, 1986, and August 14, 1986. In the Canadian program, 90 marine mammals were taken during the 1987 observations. GREENPEACE, GREENPEACE RECOMMENDATIONS TO THE INTERNATIONAL NORTH PACIFIC FISHERIES COMMISSION (INPFC) 1989 ANNUAL MEETING, app. at 1. (Nov. 7, 1989) (Prepared by Alan Reichman, Ocean Ecology Coordinator, Pacific Region).

108. Annual catches were 6 million metric tons of Alaska pink salmon in 1988 after a projected catch of 38 million. This raised the suspicions of fisheries biologists in the Pacific Northwest. Christopher Horton, *Net Results*, PACIFIC NORTHWEST, Feb. 1991, at 9. Similarly, small catch rates of albacore in the Southwest alerted fisheries biologists of the problem. *Report of the Secretary-General*, *supra* note 42, at 26.

Driftnets continue to be blamed for low stocks in the Pacific Southwest. *Drop in Albacore Hits Small Economies in South Pacific*, Xinhua Overseas News Service, June 18, 1991, available in LEXIS, Nexis Library, Currnt File.

109. Johnston, *supra* note 14, at 13.

110. Pub. L. No. 100-220, §§ 4001-09, 101 Stat. 1477-80 (1987) (codified at 16 U.S.C. § 1822 (1988)).

111. *Id.* § 4004(a).

112. *Id.*

113. Telephone Interview with James Coe, *supra* note 20.

DRIFTNET AGREEMENTS FOR 1989, 1990

Terms	Japan	Taiwan	Rep. Korea
Most Recent Agreement	31 Mar. 1990	25 Aug. 1989	8 Sept. 1989
Fisheries included for 1989	Squid	Squid & Tuna	Squid & Tuna
Fisheries included for 1990	Squid & Tuna		
Limit on Number of Vessels	Squid limited since 1981, Tuna limited for 1990	Will try and limit fleet	Limit at 160 vessels
Nets must be marked, not discarded	Yes	Yes	Yes
Mesh size of nets	Prohibition on carrying both large and small nets	Will introduce legislation to prohibit vessels from carrying both large mesh gear (tuna) and small mesh (squid)	Will regulate
At-sea transport to vessels	Prohibited	Only to Taiwanese vessels w/transmitters	Only under ROK Managers on Vessels with transmitters
Enforcement at sea 1990	Will double 1988 effort to 5 patrol boats @ 600 vessel days	3 vessels @ 3310 vessel days	1 vessel year-round, 2 in peak months
Enforcement observer exchange	1 U.S. on 1 Japan Patrol; 1 Japan on 1 U.S. flight	1 U.S. (AIT) on 1 Taiwan patrol; 1 Taiwan on 1 U.S. flight	1 U.S. on 1 ROK patrol; 1 ROK on 1 U.S. flight
U.S. Boarding and inspection	Under terms of INPFC	Permitted for vessels outside approved areas and under some circumstance w/in approved areas	Permitted for all driftnet and transport vessels
Cooperative Enforcement	Will monitor ROK and Taiwan Fleets	No provision	No provision
Transmitters on Vessels with Satellite Surveillance-1990	All Squid and Tuna vessels	All vessels	All vessels
Number of U.S. Observers on Fishing vessel 1990	Squid: 35 U.S.; 10 Canadian; 29 Japanese Tuna: 12 U.S.; 12 Japanese	14 U.S. Observers (45 days); 10 Taiwanese Observers (60 days) Roving Platform (2 U.S.; 2 Taiwanese observers)	13 U.S. and 13 ROK on 26 vessels for 45 Retrievals
Retention of Salmon	Prohibited	Prohibited	Prohibited
1990 Final Reports	31 May 1991	31 May 1991	30 June 1991

Source: Benton, *Alaska and the Fisheries of the North Pacific and Bering Sea*, ALASKA'S WILD-LIFE 13, 20-21 (July-Aug. 1990).

As seen in Table 2, the agreements go beyond monitoring to encourage fleet reductions and enforcement. Interestingly, one

can see that all three elements of norm formation — exploration, characterization, and prescription — are implicated in these agreements. In addition to prohibiting some fishing activities (e.g., retention of salmon), the agreements lay a foundation for gathering data and monitoring the size of the fleet.

The results of the research done under the Japanese agreement on the squid driftnet fishery in the North Pacific indicate a large bycatch of fur seals, dolphins, sharks, birds, and nontarget fish.¹¹⁴ The data taken on ten percent of the nets fished by the Japanese fleet¹¹⁵ indicate that 1,377 dolphins, 318 Dall's porpoises, 1,046 albatross, 28,557 shearwaters, 545 fur seals, 81,956 blue sharks, 3.2 million pomfrets, and a variety of other fish were taken as bycatch.¹¹⁶ Of particular concern was the capture of several species listed as endangered under the U.S. Endangered Species Act¹¹⁷ and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).¹¹⁸ These species include 840 northern right-whale dolphins,¹¹⁹ twenty-seven leatherback turtles,¹²⁰ and one Newell's

114. By this author's calculation, 34% of the total catch for the Japanese squid driftnet fishery is bycatch. This number is large, in part because of the significant number of pomfret fish captured. However, it may not represent the total bycatch as observers were instructed to ignore large numbers of pomfret bycatch if other, more significant species were also caught, or if the pomfret bycatch was too numerous to count. FINAL REPORT OF 1990 OBSERVATIONS OF THE JAPANESE HIGH SEAS, *supra* note 105, at 7.

115. Rather than measure vessels, the study used fishing effort as represented by the number of tans fished. Each tan is approximately 50 meters in length. The total number of tans observed was 2,244,400. *Id.*

116. *Id.* at 195 tbl. 24. Dall's porpoise are also captured in salmon gill-net fishing. Techniques are presently being tested by Japanese and American scientists to make the net more visible to dolphins, porpoises, and whales. See generally Whitlow L. Au & Linda Jones, *Acoustic Reflectivity of Nets: Implications Concerning Incidental Take of Dolphins*, 7 MARINE MAMMAL SCIENCE 258 (1991).

Current research indicates that the nets are detectable by dolphins and porpoises swimming 3 to 4 meters per second, and open water tests in Japan have shown porpoises can easily avoid the net. *Id.* at 270. Possible explanations for why the animals become entangled on the high seas include: (1) They may not echolocate while swimming in open water, (2) they may perceive the net as semipermeable, (3) they may be attracted to the net by the fish present there or the disturbances caused by the trapped fish, or (4) the entangled fish in the net may prevent the animals from sensing the net holding the fish. *Id.* at 270-71.

117. Endangered Species Act of 1973, Pub. L. No. 93-205, 1 Stat. 884 (1973) (codified as amended at 16 U.S.C. §§ 1531-44 (1988)).

118. Convention on International Trade in Certain Species of Wild Fauna, Mar. 3, 1978, entered into force July 1, 1975, 27 U.S.T. 1087 [hereinafter CITES].

119. *Lissodelphis borealis*. The population of this dolphin is predicted at a couple hundred individuals. Telephone Interview with Linda Jones, NMFS (Oct. 15, 1991).

120. *Dermochelys coriacea*. This species of turtle is listed as endangered both under the Endangered Species Act and CITES. Japanese scientists are uncertain that the same limited population is being caught in the North Pacific. *Id.*

shearwater.¹²¹

These figures exclude the remaining ninety percent of the Japanese effort as well as the Korean and Taiwanese squid driftnet fisheries in the Central and North Pacific, which are at least as large as the Japanese fleet.¹²² Observer studies done as a result of the U.S.-Taiwan and U.S.-Korean agreements indicate that these squid driftnet fishers have significantly smaller bycatch.¹²³ Further, analysis of the Taiwanese large-mesh driftnet fleets indicates a lower bycatch rate.¹²⁴ The difference in these figures may be due to the differences in fishing technique and area.¹²⁵

While the total bycatch figures appear significant, they do not provide a basis for comparison.¹²⁶ Very little is known about the populations of open water species. Further, this research is really the first of its kind on a scale this large.¹²⁷ The results of the observer programs has led to further controls. Canada

121. *Puffinus auricularis newellii*, listed at 50 C.F.R. § 11.71 (1990). See FINAL REPORT OF 1990 OBSERVATIONS OF THE JAPANESE HIGH SEAS, *supra* note 105, at 195 tbl. 24.

122. One researcher estimates the Japanese Squid Driftnet Observer Program to represent 5% of the total driftnet fleet. See *New High Seas Study Prompts Greenpeace to Demand Early Halt to North Pacific Driftnet Fishing*, June 17, 1991, available in DIALOG, File No. 30 (statement of Ben Deeble, Greenpeace Ocean Ecology Campaigner).

The total amount of net is estimated at 24.5 million tans for the Korean fleet. The total Taiwanese fleet is undetermined but thought to be as large. Telephone Interview with James Coe, *supra* note 20.

123. By this author's calculation there is a 5% bycatch rate in these fisheries. See REPUBLIC OF CHINA COUNCIL OF AGRIC. ET AL., FINAL REPORT OF 1990 OBSERVATIONS OF THE TAIWANESE HIGH SEAS DRIFTNET FISHERIES IN THE NORTH PACIFIC OCEAN 43-44 (Sept. 10, 1991) [hereinafter FINAL REPORT OF 1990 OBSERVATIONS OF THE TAIWANESE HIGH SEAS]; REPUBLIC OF CHINA FISHERIES RESEARCH & DEVELOPMENT AGENCY ET AL., FINAL REPORT OF 1990 OBSERVATIONS OF THE KOREAN HIGH SEAS SQUID DRIFTNET FISHERY IN THE NORTH PACIFIC OCEAN, 69 (Oct. 2, 1991) [hereinafter FINAL REPORT OF 1990 OBSERVATIONS OF THE KOREAN HIGH SEAS].

However, an informal observation of a Taiwanese tuna fishery in the North Pacific counted one blue shark for every six tuna captured on board a tuna vessel. Todd Campbell, *The Snag with Drift Netting*, SEATTLE TIMES, Jan. 6, 1991, Pacific Sec. at 1. The U.S. team aboard the Korean squid vessels observed 15,248 blue sharks for each 2.3 million squids captured (0.65%). FINAL REPORT OF 1990 OBSERVATIONS OF THE KOREAN HIGH SEAS, at 69.

124. See FINAL REPORT OF 1990 OBSERVATIONS OF THE TAIWANESE HIGH SEAS, *supra* note 123, at 43. This report indicates 48,661 individuals captured for 62,254 tuna and marlin sought in the large-mesh driftnet fishery.

125. Telephone Interview with Jim Coe, *supra* note 20.

126. Scientific analysis of all three reports were not available at the time of this writing.

127. Telephone interview with James Coe, *supra* note 20.

banned large-scale driftnet fishing within its fishery zones, largely in response to the level of bycatch demonstrated in the 1987 observer program.¹²⁸ The United States followed in 1990 with legislative amendments prohibiting the use of the large-scale nets within the 200 mile United States Exclusive Economic Zone (EEZ).¹²⁹

The initial Japanese response to the U.S. measures was to increase regulation of the area. In 1981, it reduced the number of vessels licensed to fish in the area and placed area and gear specifications on the remaining fleet.¹³⁰ After strong pressure from the United Nations,¹³¹ the United States,¹³² and other sources,¹³³ Japan announced it would end the large-scale driftnet fishing practice entirely by December 31, 1992.¹³⁴ In a succinct example of how international norms are formed, Japan explained, "Since no other country sided with us, we had to consider Japan's position in international society and yield."¹³⁵

128. GREENPEACE, *supra* note 107, at app. I.

129. Fishery Conservation Amendments of 1990, Pub. L. No. 101-627, § 107, 104 Stat. 4436, 4441-44 (1990) (codified at 16 U.S.C. § 1826 (Supp. I 1990); *see also* Wildlife & Fisheries, 50 C.F.R. § 685.21 (1991)).

130. *Report of the Secretary-General*, *supra* note 42, at 23.

131. The Committee on Economic and Financial Questions (often called the "Second Committee") passed a resolution calling for a moratorium on driftnet fishing in the North Pacific by December 31, 1992. Details of the resolution were not available at the time of this writing. However, popular accounts of the resolution indicate it calls for a 50% cutback in driftnet usage by June 30, 1992, leading to a complete ban on high seas driftnet fishing by the end of that year. *U.N. Adopts Anti-Driftnet Fishing Measure*, UPI, December 2, 1991, available in LEXIS, Nexis Library, UPI File; *see also* GA. Res. 197, U.N. Press Release GA/8165 (1991) (affirming time limits set by resolution 214/225). U.S. Congresswoman Jolene Unsoeld credits this resolution (before it was passed) as pushing Japan to accept the ban: "As they . . . started to do some vote counting in the United Nations, they realized they might be embarrassed." *Japanese to Beach Driftnets*, SEATTLE POST-INTELLIGENCER, Nov. 26, 1991, at A1, A12.

132. Congress passed resolutions calling for a worldwide ban on the fishing practice and appealed directly to Japan to stop. *See* H.R. Con. Res. 113, 102d Cong., 1st Sess. (1991); *Drift-netting Ban Praised: Congress Takes Credit for Prodding Japan*, HONOLULU ADVERTISER, Nov. 28, 1991, at A9. Members of Congress credited the State Department for achieving consensus on the United States position. *Japanese to Beach Driftnets*, SUPRA note 131, at A1 (statement of Senator Gorton).

133. The variety of interested parties was documented by Dr. Albert Manville of the Defenders of Wildlife. Speaking of the Japanese decision to suspend the fishing practice, he states, "We also owe much of this victory to the native, fishing and environmental communities who helped form a diverse global coalition to help bring about this victory." *Defenders of Wildlife Hail U.N. Vote on Driftnetting Moratorium*, UPI, Dec. 9, 1991, available in LEXIS, Nexis Library, UPI File.

134. *Drift-netting Ban Praised: Congress Takes Credit for Prodding Japan*, *supra* note 132, at A9.

135. *The "Wall of Death" Goes*, *supra* note 1, at 53 (statement of Masami Tanabu, Minister of Agriculture, Forestry and Fisheries).

Other large-scale driftnetting nations are following a similar path. The People's Republic of China also announced that it will stop driftnet fishing in the North Pacific.¹³⁶ Taiwan has banned the construction of new driftnet vessels, begun to buy back old vessels, and indicated it too will cease large-scale driftnet fishing.¹³⁷

2. The South Pacific Fishery

As events were unfolding in the North Pacific, driftnet fishing vessels began to target albacore tuna in the South Pacific. The albacore stock was already fully exploited by 1987 and 1988¹³⁸ when the total number of driftnet vessels in the region expanded from the twenty vessels operated only by the Japanese in the 1980s up to sixty vessels from Japan, one hundred and twenty from Taiwan, and one from Korea during the 1987 and 1988 seasons.¹³⁹ The capture of juvenile fish coupled with intense harvesting, threatened to exhaust the fishery within a few years.¹⁴⁰

Not surprisingly, it was the high-valued targeted catch, tuna in the South Pacific that caused the most immediate concern. However, bycatch was also at issue. Research conducted by the Federated States of Micronesia revealed a significant bycatch of marine mammals; almost one mammal for each tuna caught.¹⁴¹ In 1989, the Heads of Government of the South Pacific Forum, the regional fishery agency, issued a declaration calling for a halt to the use of large-scale driftnets in the region.¹⁴² Among the justifications for suspension of the fishing practice was that, because of its wasteful character, driftnet fish-

136. China claimed that illegal driftnet boats were using its flag and "damag[ing] China's reputation." *Charging Misuse of Flag, China Calls Driftnet Boats Back Home — Link Seen to Most Favored Trade Status*, SEATTLE TIMES, July 12, 1991, at B3.

137. *Id.* When this article went to press, South Korea unofficially announced that it will also cease the fishing practice. *U.N. Passes Global Fishnet Ban; Reprieve for the Marine Environment*, U.S. Newswire, Dec. 20, 1991, available in Lexis, Nexis, Currnt File.

138. Report of the FFA, *supra* note 101, at 7.

139. *Report of the Secretary-General*, *supra* note 42, at 26.

140. The driftnets continue to be blamed despite cessation of the technique in 1990. *Drop in Albacore Hits Small Economies in South Pacific*, *supra* note 108.

141. One observer documented the catch of 11 whales, 10 large turtles, and 97 dolphins by a tuna boat fishing off the Micronesian island of Yap. William McCloskey, *Casting Drift Nets with the Squidders*, 21 INT'L WILDLIFE 40, 42 (1991); GREENPEACE, *supra* note 107, at app. 3.

142. Tarawa Declaration, July 11, 1989, reprinted in 14 LAW SEA BULL. 29, 29 (1989).

ing was in violation of the customary law of the sea and of the 1982 United Nations Convention on the Law of the Sea:

Recalling the relevant provisions of the 1982 United Nations Convention on the Law of the Sea, and in particular articles 63, 64, 87, 116, 117, 118 and 119,

Recognizing that the use of drift nets as presently employed in the Southern Pacific Albacore Tuna Fishery *is not consistent with international legal requirements in relation to rights and obligations of high seas fisheries conservation and management and environmental principles*,

Resolves, for the sake of this and succeeding generations of Pacific peoples, to seek the establishment of a regime for the management of albacore tuna in the South Pacific that would ban drift-net fishing from the region; such a ban might then be a first step to a comprehensive ban on such fishing¹⁴³

The emphasized language recognizes a breach in the driftnetting states' obligation to conserve and manage the area. While the phrase "international legal requirements" does not identify a norm, the general reference to "rights and obligations" suggests no specific agreement is needed for recognition of this obligation.

Partly due to this declaration, driftnetting was banned from the Southwestern Pacific. Meetings of the Heads of Government produced a treaty calling for all members to ban the use of driftnets in their EEZs and to take measures discouraging the use of driftnets in the high seas regions within the Forum Fisheries Agency fishing zone.¹⁴⁴ The United States, Canada, and Chile have signed the treaty.¹⁴⁵

3. Driftnet Fishing in the Indian Ocean and the European Community Waters

The driftnet fishery in the Indian Ocean targets albacore tuna. Taiwan operated approximately 130 vessels in the region in 1988. Bycatch estimates indicate a range of less than ten per-

143. *Id.* (emphasis added).

144. Convention for the Prohibition of Fishing with Long Driftnets in the South Pacific, *done* Nov. 23, 1989, 29 I.L.M. 1449 (1990).

145. Protocol I to the Convention permits states which are parties by virtue of membership in the South Pacific Fisheries Forum to consent to be bound by the treaty. See *Well-Placed Chile Leads in the Logistical Battle for Antarctica*, FIN. TIMES (London), Jan. 11, 1990, at 6; *U.S. Considers Ratification of Driftnet Fishing Treaty*, FOREIGN POL'Y BULL., July-Aug. 1991, at 80 (statement of David Colson, Deputy Assistant Secretary for Oceans and Fisheries Affairs before Senate Foreign Relations Committee); *Canada Signs South Pacific Driftnet Ban*, VANCOUVER SUN, Oct. 1, 1990, at A14.

cent to as high as ninety percent bycatch in the years 1986 through 1988. As a result of the limited data available on the fishery, the regional management body, the Indian Ocean Fishery Commission, has not made recommendations regarding large-scale driftnet fishing.

The sufficiency of relevant data has been a source of contention within the European Economic Community (EEC) as well. French¹⁴⁶ and Cornish fishers, who use driftnets in their coastal fisheries, cite such a lack of evidence as grounds for rejecting an amendment to the Common Market fishing agreement that would ban driftnet fishing.¹⁴⁷ Spain and Italy already have banned the fishing practice. Britain claims it will prevent its fishers from using the nets as well.¹⁴⁸ Disagreement over the use of the nets has led Spanish fishers, restricted from using the nets in their waters, to sabotage French driftnets.¹⁴⁹

Finally, in October of 1991, the EEC Fisheries Council formally banned the use of large-scale nets, with an exemption temporarily available until 1993 for fishers who use nets no longer than five kilometers (km), and after 1993 where scientific evidence indicates a total ban is unnecessary.¹⁵⁰ It is hard to determine how well this ban is working; the French claim they currently only use nets less than 2.5 to five kilometers long, although larger nets have been reported.¹⁵¹ Despite the exemption and variations in practice, this action as well as other measures taken by the EEC Fisheries Council are strong evidence of the perceived need to limit bycatch.¹⁵²

146. *Atlantic Becomes New Battleground in Driftnets Conflict*, Reuters Wire Service, Reuter Bus. Rep., July 31, 1990, available in LEXIS, Nexis Library, Currnt File.

147. See, e.g., *Fisheries Council: Seeking An Accord on Conservation Measures*, European Rep., Apr. 17, 1991, available in LEXIS, Nexis Library, Currnt File.

148. See Charles Clover, *Salmon Nets Phased Out by Gummer*, DAILY TELEGRAPH (London), Oct. 18, 1991, at 2; *Atlantic Becomes New Battleground in Driftnets Conflict*, *supra* note 146.

149. Basque tuna fishermen wrecked 674 driftnets set by French fishers 250 miles northwest of Cape Finistierre. *Atlantic Becomes New Battleground in Driftnets Conflict*, *supra* note 146. Spanish fishers are able to use driftnets in Moroccan waters. *Id.*

150. "After 1993, ships will have to limit themselves to a single 2.5 km net unless convincing scientific evidence shows the curb is unnecessary." *Greenpeace Calls New EC Driftnet Curbs Too Feeble*, Reuter Library Report, Oct. 29, 1991, available in LEXIS, Nexis Library, Currnt File. At the time of this writing, details of the agreement were only available through newspaper reports of the press conference following the meeting.

151. Greenpeace has said it has found nets of up to 20km long in the French fishery. *Atlantic Becomes New Battleground in Driftnets Conflict*, *supra* note 146.

152. The new regulations also increase the diamond-shaped mesh size for North Sea fishing from 90mm to 100mm, although square mesh panels with a size of 90mm will be

4. The Global Response to Driftnet Fishing

As a result of the events in the Pacific, New Zealand and the United States proposed a moratorium on the use of driftnets on all high seas fisheries.¹⁵³ The moratorium was passed by the U.N. General Assembly. While the U.N. Resolution lacks binding force on the nations involved,¹⁵⁴ it is strong evidence of a trend toward intolerance of driftnets. Indeed, the Organization of Eastern Caribbean States,¹⁵⁵ the North Atlantic Salmon Conservation Organization,¹⁵⁶ the International Whaling Commission,¹⁵⁷ the United Nations Conference on the Environment and Development,¹⁵⁸ the Fisheries Committee of the Organization for Economic Co-operation and Development, the International Conference on Conservation and Management of the Living Resources of the high seas,¹⁵⁹ and various nongovernmental organizations have supported the resolution.¹⁶⁰

Of particular interest is the preamble to the U.N. Resolution. It asserts "that in addition to targeted species of fish, nontargeted fish, marine mammals, seabirds and other living marine resources of the world's oceans and seas . . . are either

permitted. In the Irish Sea, mesh sizes will rise from 70mm to 80mm. *Scottish Fishermen Angry at EC Ruling*, FIN. TIMES (London), Oct. 30, 1991, at 36.

153. *Large-Scale Pelagic Driftnet Fishing and Its Impacts on the Living Marine Resources of the World's Oceans and Seas*, G.A. Res. 225, U.N. GAOR Supp. No. 49, at 147, U.N. Doc. A/44/746/Add.7 (1989)[hereinafter *Large-Scale Pelagic Driftnet Fishing*].

154. Some argue the Resolution has no force at all over Korea and Taiwan because they are not members of the United Nations. Miles & Fluharty, *supra*, note 13, at 22.

155. The Castries Declaration, Nov. 24, 1989, reprinted in 14 L. SEA BULL. 28 (Dec. 1989), acknowledges "indiscriminate use of fishing gear, whether on the high seas or in a coastal State's exclusive economic zone, is inconsistent with legal provisions as enunciated in the United Nations Convention on the Law of the Sea." See 14 L. SEA BULL. 28, 28 (1989). This passage is interesting in that it seeks to justify prohibition on indiscriminate use of fishing gear both as a custom ("provisions as enunciated") and as a treaty to be ratified ("in the . . . Law of the Sea [Convention]") See *id.*

156. The Organization adopted a resolution in support of the United Nations Resolution. *Report of the Secretary-General*, *supra* note 42, at 6.

157. The IWC endorsed the United Nations Resolution and also noted its own efforts to reduce marine mammal bycatch. *Id.*

158. The Preparatory Committee requested a report on the impact of fishing technologies on the management of living marine resources in light of the United Nations Resolution as well as other information on conservation of high seas living resources. *Id.*

159. The Conference called for full, timely, and effective implementation of the United Nations Resolution, and for the termination of environmentally harmful practices on the high seas, in particular those practices that result in indiscriminate and wasteful catches and threaten effective conservation of living marine resources which can jeopardize the biodiversity and the integrity of the marine ecosystem. *Id.* at 7.

160. *Id.* 6-7.

injured or killed."¹⁶¹ While other paragraphs recite the threat of overfishing from driftnets, arguments for imposition of the U.N. moratorium on large-scale driftnet fishing specifically focus on the indiscriminate nature of the fishing practice.¹⁶² The U.N. Resolution proposes three recommendations to conserve marine resources. First, the reduction, leading to the complete cessation, of driftnet fishing in the South Pacific.¹⁶³ Second, a moratorium on *all* large-scale pelagic driftnet fishing on the high seas by June 30, 1992, unless "effective conservation and management measures [can] be taken . . . to prevent the unacceptable impact of such fishing practices on that region and to ensure the conservation of the living marine resources. . . ."¹⁶⁴ Finally, the prohibition on further expansion of driftnet fishing within the North Pacific and other high seas areas, subject to further review.¹⁶⁵

With regard to the first recommendation, Japan agreed to cease driftnet fishing in the South Pacific region well before the deadline of June 30, 1991. Korea has notified the U.N. Secretary-General that it now prohibits driftnet fishing in the region.¹⁶⁶ Taiwan reduced its fleet in the region, has indicated that it supports the U.N. Resolution, and will cease driftnet fishing in the region by July 1, 1991.¹⁶⁷ While these reactions do not compell a conclusion that driftnet fishing is in violation of inter-

161. *Large-Scale Pelagic Driftnet Fishing*, *supra* note 153, at pmb1. ¶4.

162. New Zealand Prime Minister Geoffrey Palmer, Address to the United Nations General Assembly (Oct. 2, 1990); *see also* Tarawa Declaration, *supra* note 142, pmb1., at 29; U.S. Policy Statement on Large-Scale Pelagic Driftnets, Submitted to the U.N. Office of Ocean Affairs & the Law of the Sea, July, 1990 [hereinafter U.S. Policy Statement] reprinted in Miles & Fluharty, *supra* note 13, at 23-25 (indicating the indiscriminate character of the gear as a basis for objection).

163. *Large-Scale Pelagic Driftnet Fishing*, *supra* note 153, at ¶4(b).

164. *Id.*

165. *Id.* at 22

166. *Report of the Secretary-General*, *supra* note 42, at 29.

167. *See id.*; Charles Chen, Director, Information Division, Coordination Council for North American Affairs, stated:

[T]he government of the Republic of China on Taiwan holds to the goal that the use of drift nets be discontinued. Plans are under way to phase out their use: Taiwan's South Pacific drift-net fleet has been reduced from 60 to 24 vessels and will continue to be dismantled as our government purchases old vessels and offers low-interest loans to help former drift-net fishing families enter new businesses. With regard to the U.N. resolution banning the use of drift nets after June 1992, our government has affirmed that it supports the spirit of the resolution and plans to end the practice of driftnetting by Taiwan's fishermen.

Editorial, S.F. CHRON., Aug. 14, 1990, available in LEXIS, Nexis Library, Currnt File.

national norms, the international observance of the resolution recognizes the legitimacy of these claims.

Events surrounding the second recommendation of the U.N. Resolution, however, are more ambiguous. The major driftnetting states have complied with United States data gathering requirements largely under threat of embargo by the United States.¹⁶⁸ This data is also used by driftnetting states to show the existence of conservation and effective management of the fishery.¹⁶⁹ Disagreement exists over what constitutes "effective management" between the United States and Japan.¹⁷⁰ Notice, however, that the "soft" law of the recommendation has provided a basis for further discussion on the appropriate response to the fishing practice.¹⁷¹

The U.S. government's interpretation of the U.N. Resolution indicates that the resolution shifts the burden to high seas fishing states whose use of large-scale nets does not cause harm. The U.S. Policy Statement issued in response to the Resolution requires cessation of driftnet fishing unless:

[J]oint assessment of all concerned members of the international community of sound scientific data from a specific large-scale pelagic driftnet fishery concludes there are no unacceptable impacts by that fishery, [and] the conditions for relief of the moratoria recommended in UNGA 44/225 are not met.¹⁷²

168. Economic sanctions are still being used to pressure Korea against its driftnet fishing outside the agreed upon areas. See *S. Korea to Try to Avert U.S. Driftnet Sanctions*, Reuters Wire Service, Oct. 23, 1991, available in LEXIS, Nexis Library, Currnt File.

169. Kazuo Shima, Japan's Representative to the International Whaling Commission, stated that Japanese scientist are expected to report that the fishery is not depleting high seas stocks of dolphins, salmon, sea birds, and other species. See *Japan Not Ready to Halt Whaling, Drift-net Fishing*, SEATTLE TIMES, May 19, 1991, at A12; *Japanese Won't Accept Driftnet Ban*, SEATTLE TIMES, July 3, 1991, at B3.

170. The Japanese Policy Statement on the United Nations Resolution indicates that the submission of data on bycatch demonstrates management of the resource. CONSULATE-GEN. OF JAPAN, *supra* note 19, at 2. In contrast, the United States Policy Statement requires limitations on the number of marine mammals so as not to diminish the net productivity level. U.S. Policy Statement, *supra* note 162, at 4. Other groups contend that because "driftnets catch a range of species, no one will ever be able to develop an appropriate management plan for them." McCloskey, *supra* note 141, at 43 (statement of Ben Deeble of Greenpeace).

171. Commentators Miles and Fluharty argue that the U.N. Resolution traded the fishery in the South Pacific fishery for the North Pacific one. Whether or not this analysis is correct, the fact that they have continued to negotiate with the United States evidences recognition of the need to conform to the Resolution. Even an economic embargo by the United States could be tolerated if the position advocated by the United States were groundless and/or unsupported by other states. Miles & Fluharty, *supra* note 13, at 23-24.

172. U.S. Policy Statement, *supra* note 162, at 4.

The U.S. gloss on the moratoria seems to indicate that a unanimity of concerned parties is required to prevent its imposition. Recent statements by U.S. officials seem to take the position that no amount of management is sufficient to permit the continuation of the fishing practice.¹⁷³

Because the U.N. Resolution requires imposition of the moratoria unless adequate management and conservation are achieved, it places the burden on the fishery users to demonstrate no adverse impacts on the marine environment. This showing must be "based upon statistically sound analysis . . . made jointly by concerned parties." The level of agreement required is left unanswered, leaving unresolved the precise decision making process required for compliance.¹⁷⁴ Further, assuming no agreement between the nations, the U.N. Resolution lacks an enforcement mechanism to impose the moratoria.

Despite these difficulties, the Resolution represents a dramatic shift away from the U.N.'s traditional support of freedom to fish the high seas toward the exercise of restraint. This shift is not without precedent; a "precautionary" concept was first used in regulation of hazardous substances transported on the North Sea.¹⁷⁵ Significant confusion surrounds the precise scope of this principle, in part because it was initially developed as an "approach" to environmental policy problems.¹⁷⁶ As such, the

173. Robert Brownwell, Jr., Remarks at the 31st Meeting of the Marine Mammal Commission and the 25th Meeting of the Committee of the Scientific Advisors on Marine Mammals, Bellevue, Wash. (Apr. 25, 1991).

174. See William T. Burke, *Regulation of Driftnet Fishing and the New International Law of the Sea*, 3 GEO. INTL ENVTL. L. REV. 265, 283-85 (1990).

175. See Lothar Gundling, *The Status in International Law of the Principle of Precautionary Action*, 5 INT'L J. ESTUARINE & COASTAL L. 23, 24 (Lothar Gundling trans., 1990) (citing German Council of Experts on Envtl. Matters, Reports on Environmental Problems of the North Sea (1980)). The report identified the principle as a "requirement for a successful environmental policy for the North Sea ecosystem." *Id.*

176. Accepting that, in order to protect the North Sea from possible damaging effects of the most dangerous substances, a precautionary approach is necessary which may require action to control inputs of such substances even before a causal link has been established by absolutely clear scientific evidence . . . [and later, the participants] accept that by combining, simultaneously and complementary, approaches based on emission standards and environmental quality objectives, a more precautionary approach to dangerous substances will be established.

Gundling, *supra* note 175, at 25 (quoting the Final Declaration of the Second International Conference on the Protection of the North Sea, Items VII & VIII, London, Nov. 24-25, 1987) (emphasis added). The precautionary approach is still being espoused today. In a recent meeting of over 200 international corporations and industry groups, a new "business charter for sustainable development" recognized the need for a precautionary

principle was not a positive obligation on negotiators to reach a result or suffer the consequences of prohibiting the activity.

The precautionary approach has more recently emerged in the context of air pollution standards. Negotiations on carbon dioxide (CO₂) emissions resulted in the formulation of this approach as a principle:

Environmental measures must therefore anticipate, prevent and attack the causes of environmental degradation, even if final scientific proof is lacking. Doubt should not be used as a reason for postponing measures to prevent environmental degradation.¹⁷⁷

The principle has been criticized by many, including the U.S., for its inherent ambiguity due to the use of this "single criterion" to resolve policy issues, potentially before even scientific evidence has indicated the most appropriate course of action.¹⁷⁸ Yet the United States was a chief proponent of the U.N. driftnet Resolution, despite the lack of scientific evidence of the ecological effect of large-scale pelagic driftnet fishing.¹⁷⁹ Of course, one could argue that the policy considerations in CO₂ emissions reduction are not as complex as those involved in driftnet usage.¹⁸⁰ Whatever its justification, a precautionary approach

approach to environmental degradation. Nick Cater, *Charter Seeks Marriage of Market and Environment*, INDEPENDENT, Apr. 10, 1991, at 23.

177. Document Identified as State Department Telex to U.S. Embassies on U.S. Position at Bergen Environmental Conference, Released by the Friends of the Earth International, Daily Rep. for Executives (BNA) No. 91, at M-1 (May 10, 1990), available in LEXIS, Nexis Library, Currnt File [hereinafter *Bergen Environmental Conference*] (discussing para. 7 of the Bergen Declaration). A recent British White Paper takes a similar formulation:

The government will be prepared to take precautionary action to limit the use of potentially dangerous materials or the spread of potentially dangerous pollutants, even where scientific knowledge is not conclusive, if the balance of likely costs and benefits justifies it.

David Thomas, *Environment White Paper: Government Presents Qualified Vision of a Greener Age*, FINANCIAL TIMES (London), Sept. 26, 1990, at 12 (quoting HMSO, THIS COMMON INHERITANCE: BRITAIN'S ENVIRONMENTAL STRATEGY (1990)).

178. *Bergen Environmental Conference*, *supra* note 177, at ¶4 (discussing para. 7 of the Bergen Declaration).

179. It appears that the United States has not rejected the principle entirely. The United States agreed to a softer version of the principle in a joint declaration with the U.N. Economic Commission for Europe. The reworded principle calls for environmental measures to "anticipate, prevent and attack the causes of environmental degradation." 34 *Countries and Commission Agree Joint Declaration on Environment*, European Rep. No. 1588, at 7, May 19, 1990, available in LEXIS, Nexis Library, Currnt File.

180. Loss of jobs from a driftnet fishing ban, while certainly important, does not involve the same kind of trade-offs involved when heavy industry, energy, and transportation policies reduce emissions. Korean fishermen claim that more than 50,000

can accelerate the norm-forming process, pressuring states to reduce bycatch before economic and environmental evidence is complete.¹⁸¹

Since this article was initially prepared, the U.N. has adopted a much more far reaching resolution which calls for a global moratorium on all large-scale high seas driftnetting by December 31, 1992.¹⁸² "Passage of this resolution sets a global precedent. It now sets a strong standard for international maritime law. Millions of marine fish and wildlife will now be protected each year from certain death in high seas driftnets,"¹⁸³ including six species listed under the U.S. Endangered Species Act and eighteen listed in CITES.¹⁸⁴ The U.S. Congress is currently developing a bill to promote enforcement of the U.N. driftnet ban.¹⁸⁵

B. Dolphin Bycatch in the Eastern Tropical Pacific

The introduction of purse seiner tuna boats¹⁸⁶ to the Eastern Tropical Pacific in the 1960s created problems for several species of dolphin.¹⁸⁷ Because of the known association between dolphins and tuna, purse seiners locate adult tuna schools through dolphin surface activity.¹⁸⁸ Once located by dolphin

people would be adversely affected by a ban on driftnet fishing. See *S. Korea to Try to Avert U.S. Driftnet Sanctions*, *supra* note 168.

181. A feature of the precautionary approach, which has remained throughout its brief history, has been the need to develop and transfer the best available technology to combat environmental degradation. Grundling, *supra* note 175, at 25 (quoting the Final Declaration of the Second International Conference on the Protection of the North Sea, Item XVI(1), London, Nov. 24-25, 1987) ("[The ministers] accept the principle of safeguarding the marine ecosystem of the North Sea by reducing pollution emissions of substances . . . by the use of the best available technology . . ."). As this relates to the bycatch issue, technologies presently under development in the United States and Europe could avoid bycatch problems in the high seas fisheries through use of advanced mesh materials and net designs.

182. *U.N. Passes Global Ban; Reprieve for the Marine Environment, at Last*, U.S. Newswire, Dec. 21, 1991, available in LEXIS, Nexis Library, Wires File.

183. *Id.* (quoting Dr. Albert M. Manville, Senior Staff Wildlife Biologist, Defenders of Wildlife).

184. *Id.*

185. H.R. 2152, 102d Cong., 2d Sess. (1991) (Version: 2, Feb. 20, 1992).

186. Purse seiners are large basket-shaped nets that are used to capture the fish by encircling the targeted prey.

187. The most common species of dolphin associated with tuna are the eastern spinner dolphin, the spotted dolphin, and the common dolphin (*Delphinus delphis*).

188. *U.S. Embargo Won't Affect Mexican Tuna Exports*, UPI, Feb. 22, 1991, available in LEXIS, Nexis Library, UPI file. There are perhaps other explanations as well, although the environmental outcry was the justification given publicly when the amendments to the Magnuson Fisheries Conservation Act required a reduction of dolphin

activity, purse seine nets encircle the fish when the bottom of the net is drawn together to prevent escape. The dolphins often become entangled in the nets and are drowned.¹⁸⁹

Largely because of pressure from American environmental groups,¹⁹⁰ the American tuna fleets have attempted to minimize the dolphin catch through a variety of measures. There are several techniques available to reduce the amount of dolphin taken, including backing down a portion of the net to allow the dolphins to escape¹⁹¹ and locating adult tuna schools with electronic devices rather than using dolphins.¹⁹² Substantial declines in the bycatch of dolphin in the fishing area resulted from the use of these techniques.¹⁹³ The 1984¹⁹⁴ and 1988 amendments to the U.S. Marine Mammal Protection Act (MMPA) required foreign fishing nations to demonstrate a dolphin conservation program "comparable" to the United States' scheme and present data showing a "comparable" take of marine mammals to the U.S. Fishery.¹⁹⁵ Failure to submit this evidence required a ban on the import of that country's tuna. Four years later Congress became

bycatch. Relations between the United States and Mexico over the management of the tuna fishery have festered since the 1970s. See Miles & Burke, *supra* note 13, at 345-47.

189. See James E. Scarff, *The International Management of Whales, Dolphins, and Porpoises: An Interdisciplinary Assessment*, 6 *ECOLOGY L.Q.* 326, 379 (1977).

190. See, e.g., Laura L. Lones, Note, *The Marine Mammal Protection Act and International Protection of Cetaceans: A Unilateral Attempt to Effectuate Transnational Conservation*, 22 *VAND. J. TRANSNAT'L L.* 997, 998 n.3 (1989).

191. Backing down operations can save an estimated 75% of the capture dolphins. Techniques have also been developed for encouraging the dolphins to leave and for preventing the escaping dolphins from becoming entangled. E. MITCHELL, *PORPOISE, DOLPHIN AND SMALL WHALE FISHERIES OF THE WORLD: STATUS AND PROBLEMS* 88 (1975).

192. *Id.*

193. The current estimates for the United States' fleet bycatch of dolphin in the area is approximately 13,000 dolphins per year. *Id.* The purse seine tuna fishing industry as a whole is estimated to take 100,000 dolphins a year from the area. NORTHBRIDGE, *supra* note 24, at 41.

194. Pub. L. No. 98-364, 98 Stat. 440 (1984) (codified as amended at 16 U.S.C. § 1371(a)(2) (1988)).

195. Pub. L. No. 100-711, § 4(a), 102 Stat. 4755, 4765 (1988) (codified as amended at 16 U.S.C. § 1371(a)(2)(B) (1988)). The United States' scheme involves a permit system, whereby the numerical bycatch of dolphin for the Eastern Tropical Pacific is set for all U.S. fishing vessels, observers are required for all voyages except when unavailable, and techniques to release the dolphin are used to minimize the bycatch rate, such as backing down the net and not fishing after sunset. These requirements became mandatory with the 1988 amendments. See Pub. L. No. 100-711, § 4(d), 102 Stat. 4755, 4767 (1988) (codified as amended at 16 U.S.C. § 1374(h)(2)(B) (Supp. II 1990)).

One innovation in the American fishery is the elimination of explosives, a very destructive fishing technique, to herd the tuna and dolphin. Use of explosive devices in fishing are frequently banned in coastal fisheries.

impatient with the Department of Commerce's failure to promulgate regulations on comparability. 1988 amendments to the Act require reduction in foreign dolphin bycatch. Under the amendments, bycatch cannot exceed twice the total American bycatch of dolphin, with this figure decreasing to 1.25 times the U.S. catch over future years.¹⁹⁶ The 1988 amendments also require that the capture of Eastern Spinner Dolphins not exceed fifteen percent of the total dolphin bycatch for that year.¹⁹⁷

1. Domestically Imposed Economic Sanctions in the Tuna Fishery

In *Earth Island Institute v. Mosbacher*, the Ninth Circuit Court of Appeals granted a preliminary injunction embargoing the importation of tuna caught on Mexican tuna seines as a result of high bycatch rates.¹⁹⁸ Four other nations were threatened with embargo for similar catch rates.¹⁹⁹ The Court required the foreign fishing nation to produce evidence of reduction in bycatch and, based on that evidence, upheld the embargo.²⁰⁰

The most striking feature of these efforts to limit bycatch of the Eastern Tropical Pacific tuna fishery is the lack of concrete

196. Pub. L. No. 100-711, § 4, 102 Stat. 4755, 4765 (1988) (codified as amended at 16 U.S.C. § 1371(a)(2)(B)(II) (1988)). The law requires the vessels of a nation harvesting yellowfin tuna to ensure that "the average rate of the incidental taking by vessels of the harvesting nation is no more than 2.0 times that of United States vessels during the same period by the end of the 1989 fishing season and no more than 1.25 times that of United States vessels during the same period by the end of the 1990 fishing season and thereafter." *Id.*

197. 100 P.L. No. 100-711, § 4(a), 102 Stat. 4755, 4765 (1988) (codified as amended at 16 U.S.C. § 1371(a)(2)(B)(III) (1988)).

198. *Earth Island Inst. v. Mosbacher*, 929 F.2d 1449, 1452-53 (1991) (lifting stay on embargo ordered in October of 1990).

199. *Court Embargoes Mexican Tuna until Dolphin Killing Reduced*, UPI, Feb. 20, 1991, available in LEXIS, Nexis Library, UPI File.

200. In fact, it is this very ambiguity that required the embargo. Under the MMPA, foreign nations are required to provide data on the previous year's bycatch by July 31 of the following year. In the *Earth Island* case, Mexico provided data as required for the year 1989 on July 31, 1990. See 929 F.2d at 1450-51. It also submitted data on the first six months of 1990. *Id.* After a preliminary injunction accelerated the fact-finding process, the National Marine Fisheries Service found Mexico to have exceeded the limits for total dolphins killed and the percentage of eastern spinner dolphins set at 15% of the total dolphin kill under the MMPA. See 16 U.S.C. § 1371(a)(2)(B)(ii)(III). However, NMFS also "reconsider[ed]" the embargo based on the six month data of 1990 and lifted the statutory embargo one day after it was imposed. 929 F.2d at 1451.

The Ninth Circuit upheld the district court embargo based on its interpretation of the statute which required an embargo based on the *entire year's* bycatch rate (*i.e.*, the rate of spinner dolphins to other dolphins caught). *Id.* at 1451.

scientific evidence on either dolphin stocks or the amount of bycatch.²⁰¹ Estimates for the total catch of dolphins caught by the Mexican fleet are subject to significant dispute.²⁰² Further, Mexico contends its fleet has reduced its bycatch of dolphin by seventy percent over the past four years.²⁰³ This statistical ambiguity is exacerbated by the fact that only two U.S. tuna seiners remain active in the Eastern Tropical Pacific.²⁰⁴ Because the U.S. statute requires comparability with U.S. catch rates, it is hard enough to effectuate the statute, much less convince other states of the fairness of the extraterritorial application of the statute.²⁰⁵ The burden on the foreign fishers and foreign governments to produce evidence of compliance with the Act²⁰⁶ is further evidence of a precautionary approach to the problem of bycatch.

The use of economic sanctions such as embargoing the importation of tuna from countries that do not comply with domestic fisheries law is strong evidence of the U.S. conviction that the fishery's practices must change. Total imports of tuna from Mexico are about 14.3 million metric tons for 1990.²⁰⁷ Clearly these imports, totaling hundreds of millions of dollars,²⁰⁸

201. A recent survey by the U.S. National Oceanographic and Atmospheric Administration indicated "no evidence that dolphins are declining in abundance. But they are still considerably below what they were when the [purse seine] fishing started." *Dolphin Populations Appear Steady Scientist Says*, UPI, Dec. 6, 1990, available in LEXIS, Nexis Library, UPI File (quoting Tim Gerrodette, chief scientist for the project).

202. *See Mexico Concerned at U.S. Ban on Tuna Imports*, UPI, Feb. 21, 1991, available in LEXIS, Nexis Library, UPI File.

203. *U.S. Tuna Ban May Snag Trade Talks With Mexico*, CHRISTIAN SCI. MONITOR, Nov. 7, 1990, at 6 (quoting Clara Jusidman, Undersecretary of Fishery Development (Mexico)).

One account for this controversy is the long history of tension between the United States and Mexico over this fishery. During the 1950s, United States boats were routinely arrested for tuna fishing inside the Mexican 3-mile limit. *See Scheiber, supra* note 21, at 511-12.

204. Of the 28 U. S. flag vessels at the beginning of this year, 8 boats went to the Western Tropical Pacific (where there is no need to set on dolphins), 6 boats were sold, 1 became inactive, and 1 sank. Gary Smith, Regional Director of NMFS, Remarks at the 31st Meeting of the Marine Mammal Commission and the 25th Meeting of the Committee of Scientific Advisors on Marine Mammals, Bellevue, Wash. (Apr. 25, 1991).

205. *See infra* notes 217-21 and accompanying text.

206. *See Earth Island Inst. v. Mosbacher*, 746 F. Supp. 964, 970 (N.D. Cal. 1990) *aff'd*, 929 F.2d 1449 (9th Cir. 1991).

207. *Mexican Business Group Calls for Retaliation Against U.S. Imports for U.S. Embargo on Tuna*, 7 Int'l Trade & Pol'y (BNA) at 1610 (Oct. 24, 1990).

208. *GATT Hears Arguments on U.S.-Mexico Tuna Dispute with Focus on Trade Obligations*, 8 Int'l Trade & Pol'y (BNA) at 735 (May 15, 1991).

are not trivial trade relations.²⁰⁹

2. International Reaction to Trade Sanctions

Prohibitions against restraining trade are contained in the General Agreement on Tariffs and Trade (GATT or the Agreement)²¹⁰ to which the United States and Mexico are parties. Articles III and XI prohibit the imposition of restrictions on the importation of goods subject to the exceptions set forth in various articles of the Agreement.²¹¹ Article XX(g) of GATT permits states to restrain trade to conserve exhaustible natural resources.²¹² However, in order to comply with this provision, the restraint must: (1) Not constitute an arbitrary or unjustified discrimination, (2) not disguise an otherwise prohibited restriction in trade,²¹³ (3) be primarily aimed at the conservation of an exhaustible resource, and (4) be made effective in conjunction with restrictions on domestic consumption or production.²¹⁴

The first requirement stems directly from the overall import of the GATT to prevent arbitrary imposition of trade restrictions. The embargo is arguably not discriminatory in that others were threatened with import prohibitions for failure to meet the regulatory standard.²¹⁵ In a similar case, a GATT panel con-

209. See Barnett, *supra* note 13, at 53, 56 (discussing internationalization of seafood marketing).

210. GATT, Oct. 30, 1947, 55-61 U.N.T.S. 187.

211. Article XI states:

No prohibitions or restrictions other than duties, taxes or other charges, whether made effective through quotas, import or export licenses or other measures, shall be instituted or maintained by any contracting party on the importation of any product of the territory of any other contracting party.

Id. at 224-26.

212. GATT Article XX, which is entitled "General Exceptions," provides:

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

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

Id. at 262.

213. See *id.* art. X, at 80.

214. See *id.* art. XX(g), at 262; *In re Lobsters from Canada*, 1990 FTAPD LEXIS 11 (May 25, 1990); Ted L. McDorman, *The GATT Consistency of U.S. Fish Import Embargoes to Stop Driftnet Fishing and Save Whales, Dolphins and Turtles*, 24 GEO. WASH. J. INT'L L. & ECON. 447, 516 (1991).

215. Cf. *United States - Prohibition of Imports of Tuna and Tuna Products from Canada*, GATT Basic Instruments and Selected Documents 91, 108 (29th Supp. 1982).

vened in 1980 over the U.S. embargo of tuna from Canada. Nineteen U.S. tuna boats were seized inside the Canadian fishing zone but not within an area recognized by the United States as subject to coastal state management of a highly migratory species (*i.e.*, tuna).²¹⁶ The panel found that the prohibition was not discriminatory because it applied to several other countries.²¹⁷

Turning to the second requirement, in 1991 a GATT Panel convened to assess the U.S. embargo of Mexican Tuna as a result of the *Earth Island Institute* opinion.²¹⁸ Mexico argued U.S. trade restrictions unfairly quantified Mexican conservation efforts and thus was a disguised trade restriction. The GATT Panel agreed because the U.S. fleet is allowed a fixed bycatch quota for dolphin while other countries must satisfy the 1.25 ratio of bycatch to target catch based on the United States' fleet and conservation of stocks was not a justification for the differential treatment. This conclusion is not without precedent. In an earlier panel concerning Canadian tuna, the United States argued that Pacific yellowfin and bluefin, as well as Atlantic bluefin stocks were in "imminent danger."²¹⁹ The United States argued that necessary conservation measures should be implemented through international management of these stocks. The Panel concluded that while article XX(g) could justify the prohibition on Canadian tuna, the United States did not apply restrictions on domestic consumption or regulation of tuna so the prohibition disguised a protectionist restriction on trade.²²⁰

The United States tried to circumvent the uncertainty sur-

216. *Id.* at 92.

217. As an aside, the two countries settled the prohibition prior to the issuance of the GATT Panel decision. Canada insisted, however, that the panel issue its decisions nonetheless. A. Jane Bradley, *Implementing the Results of GATT Panel Proceedings: An Area for Uruguay Round Consideration*, in 5 *THE NEW GATT ROUND OF MULTILATERAL TRADE NEGOTIATIONS: LEGAL AND ECONOMIC PROBLEMS* 345, 350 n.25 (Ernest-Ulrich Petersmann & Meinhard Hilf eds., 2d ed. 1990).

218. The Panel sparked keen interest in the international community, as evidenced by requests from Australia, Canada, Chile, Colombia, Costa Rica, the European Community, India, Indonesia, Japan, Korea, New Zealand, Nicaragua, Norway, Peru, the Philippines, Senegal, Singapore, Tanzania, Thailand, Tunisia, and Venezuela to reserve their right to be heard by the GATT Panel. None of the third parties supported the U.S. embargo, viewing it as a means of protecting U.S. tuna interests. *See, e.g.*, GATT Panel Report, *supra* note 50, ¶ 4.7, at 29-32 (submission of Canada, the EEC, and Indonesia).

219. *Id.* at 97.

220. *Id.* at 47. *But see In Re Lobsters from Canada*, 1990 FTAPD LEXIS 11 (May 25, 1990) (The United States' assertions that Canadian lobsters were an exhaustible resource were sufficient to find a conservation purpose in regulating the smaller Canadian lobsters).

rounding the standards by arguing that the embargo was a permissible tax consistent with other internal taxes or charges. The Panel rejected this approach as well, finding the bycatch rate of dolphin for purse seine caught tuna affect tuna *as a product*, and therefore, restrictions were less favorable treatment in violation of Article III.²²¹ What disturbed the Panel even more was that Mexican fishers and officials could not predict the acceptable level of dolphin bycatch *until after the season* was complete and the data was submitted to the United States' Department of Commerce.²²²

Clearly, the variable standard in bycatch rates proved the regulation's downfall. The Panel found no justification for the trade restrictions based on Article XX(g). Similarly, U.S. arguments based on conservation measures "relating to the conservation of exhaustible natural resources" also failed because they sought to enforce extra-jurisdictional production controls. The reasons behind this interpretation were explicit:

[I]f the extrajurisdictional interpretation of Article XX(g) suggested by the United States were accepted, each contracting party could unilaterally determine the conservation policies from which other contracting parties could not deviate without jeopardizing their rights under the General Agreement.²²³

In time, the Panel concluded that GATT could not permit a country to impose trade restrictions which regulate products originating from other countries with environmental policies different from its own.²²⁴ It indicated, however, that trade restric-

221. "Regulations governing the taking of dolphins incidental to the taking of tuna could not possibly affect tuna as a product." GATT Panel Report, *supra* note 50, at 41. The GATT Panel Report is not final as of the date of this writing, and has not been accepted by either Mexico or the United States. Telephone Interview with Douglas Ryan, Office of Mexican Affairs, U.S. Department of State (Sept. 20, 1991). Differential treatment, however, has been accepted under more controlled circumstances. In *In re Electric Refrigerators*, 2 C.M.L.R. 289 (1963), the European Court of Justice permitted French restrictions on the importation of Italian refrigerators because Italy's increased imports were the primary source of disruption in the market. The court stated: "Material discrimination may consist in either treating either similar situations differently or different situations identically." *Id.* at 312.

222. In several places within the GATT Panel Report, the Panel mentions the unfairness of this means of enforcing environmental regulation. See, e.g., GATT Panel Report, *supra* note 50, at 42; see also *id.* at 46, 47.

223. *Id.* at 47.

224. The panel also evaluated United States' arguments that Article XX(b)'s exception for measures necessary to protect "human, animal or plant life or health" justifies the embargo. *Id.* at 45. The Panel found the measure was not "necessary" because other measures were available, and the post hoc comparisons of bycatch rates after the season force "trade based on unpredictable conditions." *Id.* at 47. Further, *travaux prepretoire* to

tions may be justified if the GATT Contracting Parties reached an agreement to incorporate environmental problems through joint action, and if limits on the range of policy differences and evaluation criteria were developed.²²⁵ Thus the Panel left open the possibility for environmental considerations to form a basis for a trade restriction, though apparently not on the basis of an undefined norm to conserve a species.

C. *Threatened Turtle Species in the Gulf of Mexico*

Shrimp fishing in the Gulf of Mexico has garnered considerable attention of late as a result of the bycatch in that fishery. Estimates of the bycatch rate in this industry indicate that twenty-two to forty-five percent of the catch is discarded.²²⁶ Other estimates have placed the discard rate as high as ninety percent.²²⁷ The latter rate would yield an estimate of over 1.2 million tons of bycatch in the Gulf Coast shrimp fishery alone.²²⁸

Most of the shrimp fishing in the Gulf of Mexico is within the fishing zones of Mexico, the United States, and other Caribbean States. However, there are small high seas areas in the Gulf — approximately 25,000 square miles of ocean space.²²⁹ Apart from the high seas areas, the Gulf is relevant to high seas catch because the United States is currently threatening an embargo of shrimp caught by foreign fleets that do not comply with the U.S. gear and fishing techniques requirements designed to protect several endangered and threatened species of turtles.²³⁰ To the extent that the United States attempts to impose

GATT indicated Article XX(b)'s purpose was to provide "sanitary measures" to safeguard life or health of humans, animals or plants within the contracting party's jurisdiction. It was therefore not available to protect the life and health of dolphins on the high seas. *Id.* at 45.

225. *Id.* at 51. This discussion was probably directed at current negotiations between the United States and Mexico over the impending free-trade agreement. Environmental concerns are one of the primary issues in those negotiations.

226. SAILA, *supra* note 35, at 14.

227. See, e.g., *Obscure Measure Blocks Marine Conservation Efforts*, UPI, Dec. 11, 1990, available in LEXIS, Nexis Library, UPI File; Bricklemeyer et al., *supra* note 35, at 278.

228. *Id.*

229. J.R.V. PRESCOTT, *THE MARITIME POLITICAL BOUNDARIES OF THE WORLD* 342-44 (1986). There is some disagreement as to whether the United States can claim these areas as part of the United States continental shelf. *Id.* at 346.

230. *U.S. Could Halt Shrimp Imports from Caribbean*, Reuter Business Report, Jan. 10, 1991, available in LEXIS, Nexis Library, Currnt File. "Nations that do not come up

an international standard on Mexican fishing practices in the Gulf, the United States has a direct impact on high seas fishing.

Within the Gulf region, leatherback, hawksbill, and Kemp's ridley sea turtles are endangered species under the Endangered Species Act.²³¹ The latter two are also endangered under the CITES.²³² Loggerhead and green sea turtles are not endangered but considered threatened.²³³ Amendments to the Endangered Species Act require the prohibition of importation of shrimp or shrimp products where harvesting may adversely affect endangered sea turtles.²³⁴ A trade embargo is required unless the President certifies to Congress that the importing country has a conservation program comparable to the United States and has an incidental taking rate comparable to U.S. vessels.

During shrimping operations, sea turtles are caught in the shrimp trawl nets. The nets drag the turtles behind the boats and prevent them from surfacing for air. Once a turtle is within the mouth of a shrimp trawl, the animal's initial reaction is to attempt to outswim the device; this strenuous effort consumes oxygen. Thus, once trapped, if the exhausted turtle is not released quickly, it drowns.²³⁵

with a plan by May 1 to protect endangered sea turtles from getting caught in shrimp nets face a ban on U.S. shrimp imports, the [State] department said." *Id.*

231. 16 U.S.C. § 1531-44. Presently, no international agreements prohibit the direct harvest of sea turtles in Latin America. Although two species of sea turtles are listed on Appendix I to the Bonn Convention, and all seven species are listed on Appendix II, no agreement under the Bonn Convention is, at present, contemplated for their conservation and management. Convention on the Conservation of Migratory Species of Wild Animals, entered into force Nov. 1, 1983, 19 I.L.M. 15. Five species are listed on Appendix II to the Berne Convention, and all species living in African waters are fully protected under the African Wildlife Convention. This includes the Kemp's ridley turtle threatened by the shrimp fishery. See *infra* note 315. African Convention on the Conservation of Nature and Natural Resources, opened for signature Sept. 15 1968, 1001 U.N.T.S. 3. The Nairobi Protocol on Protected Areas and Wild Fauna and Flora in the East African Region also lists all species of sea turtles that inhabit the Indian Ocean. Because sea turtles are listed as migratory species, nations are required to coordinate their efforts for the turtle's protection. The form which this coordination should take is, however, not specified. Among the 5 species so listed, 3 are fully protected, whereas the other 2, *Chelonia mydas* and *Eretmochelys imbricata*, are listed as harvestable threatened species. Cyril De Klemm, *Migratory Species in International Law*, 29 NAT. RESOURCES J. 935, 964 (1989).

232. The Kemp's ridley sea turtle (*Lepidochelys kempii*) and the Atlantic hawksbill turtle (*Eretmochelys imbricata imbricata*) are listed in Appendix I of the treaty. *Id.* at 1128.

233. Endangered species are those in danger of extinction throughout all or a significant part of their range. 16 U.S.C. § 1532(6). A "threatened" species is one likely to become endangered within the foreseeable future throughout all or a significant part of its range. *Id.* § 1532(20).

234. 16 U.S.C. § 1537(b)(1) (1988).

235. *Louisiana ex rel. Guste v. Verity*, 853 F.2d 322, 324-25 (5th Cir. 1988).

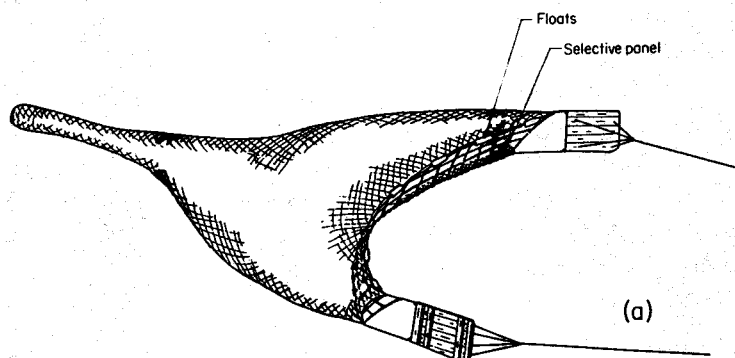
National Oceanographic and Atmospheric Administration tests on trawl times show trawls of no longer than ninety minutes can maintain a ninety-five percent survival rate of the turtles.²³⁶ Other NOAA tests developed a turtle excluder device (TED) that was seventy-one to ninety-seven percent effective in permitting the turtles to escape the net.²³⁷ As a result of these tests and Congressional legislation requiring remedial measures to assist the turtles, the Commerce Department promulgated rules limiting the time of each trawl and requiring the installation of these devices in fishing vessels.²³⁸

236. *Id.* at 325.

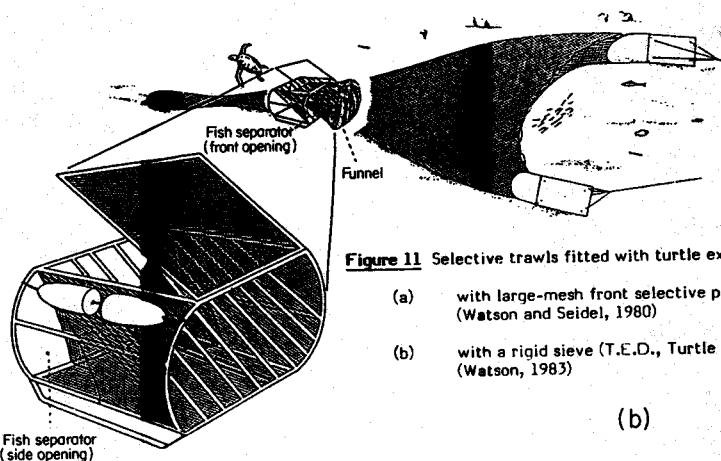
237. See U.N. FAO, *TROPICAL SHRIMP FISHERIES: TYPES OF FISHING GEAR USED AND THEIR SELECTIVITY* 26 (1990) [hereinafter *TROPICAL SHRIMP FISHERIES*]. NMFS tested three devices to eliminate bycatch. One method utilizes a large selective panel of net which excludes larger-bodied animals. Another device provides a chute for the fish, which typically swim upward in the net to escape the codend of the net. The third device was the turtle excluder device. Tests with the TED showed the greatest acceptance by Gulf shrimp fishermen and minimum loss of catch. *Id.* at 10-12.

238. 52 Fed. Reg. 24,245 (1987) (codified at 50 C.F.R. § 227 (3)(2) (1991)).

FISHING TRAWLS WITH SELECTIVE GEAR



(a)



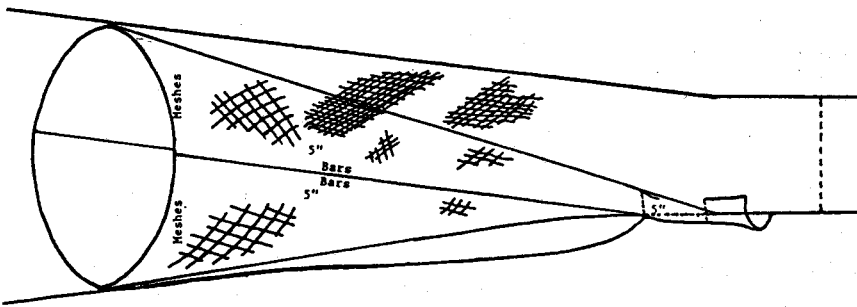
(b)

Figure 11 Selective trawls fitted with turtle excluder devices

- (a) with large-mesh front selective panel (Watson and Seidel, 1980)
- (b) with a rigid sieve (T.E.D., Turtle Excluder Device) (Watson, 1983)

Source: P. Vendeville, Tropical Shrimp Fisheries: Types of Gear Used and Their Selectivity (FAO Fish. Tech. Paper No. 261, Rev. 1) (1990).

ANDREW'S TURTLE EXCLUDER DEVICE



Source: Dep't State, *Turtles in Shrimp Trawl Fishing Operations Protection*; Guidelines, 55 Fed. Reg. 41088, 41091 (Oct. 9, 1990).

United States shrimp fishers challenged these rules on the basis that there was insufficient scientific proof of the effectiveness of these measures. The Fifth Circuit, however, upheld the regulations²³⁹ and went so far as to reverse the Secretary of Commerce when the requirements were reduced to require only 105 minute trawls and no devices.²⁴⁰

Apart from international embargoes, domestic legislation requiring specified mesh sizes and trawl net limitations is now widely accepted in shrimp fisheries management worldwide.²⁴¹ While domestic legislation is certainly not binding on international areas such as the high seas, it may provide "facts which express the will and constitute the activities of States."²⁴² This is further evidence of a trend toward recognition of the need to regulate bycatch.

V. HISTORICAL LIMITS TO USAGE OF THE HIGH SEAS

This section analyzes past limits on traditional high seas freedoms. In each instance the unfettered use of the high seas was limited either by agreement or by coercion.

239. *Guste*, 853 F.2d at 323-28.

240. *National Wildlife Fed. v. Mosbacher*, Civ. No. 89-2089 (D.D.C. Aug. 11, 1989). However, the court reached this result on the narrower ground that administrative bodies must show "good cause" for failure to hold a public hearing before modifying existing regulations. See 5 U.S.C. § 553 (b)(3)(B) (1988).

241. For example, mesh size regulations are used in coastal shrimp fisheries in Surinam, Senegal, Morocco, and Madagascar. *TROPICAL SHRIMP FISHERIES*, *supra* note 237, at 30.

242. *Certain German Interests in Polish Upper Silesia* (Ger. v. Pol.), 1926 P.C.I.J. (ser. A.) No. 7, at 19 (May 25), *quoted in* BROWNLIE *supra* note 64, at 40.

A. Conservation through Compromise: the Fur Seals Treaties

The right to regulate pelagic fur sealing in the North Pacific asserted by the United States and the U.S.S.R. initiated one of the first modern debates of the regulation of the high seas for purposes of conservation. Pelagic sealing heavily impacted the population of the fur seal herd;²⁴³ accordingly the United States prohibited pelagic sealing in the Bering Sea.²⁴⁴ In the 1880s, American interests argued the high seas area was *mare clausum* under the territorial rights gained by treaty from Russia,²⁴⁵ and thus the animals were under management by the United States. In contrast, the British argued the animals were *ferae naturae* (i.e., wild) and the sea area *res nullius* (i.e., unowned).²⁴⁶

Pending arbitration of the issue, a *modus vivendi* provided for additional research on appropriate management of the fur seals. Much like the current driftnet resolutions, the treaty provided some limitations on the fishery pending further research.²⁴⁷ While the arbitral tribunal ultimately ruled in Britain's favor, it ordered the parties to observe the recommendations of the research commission. These recommendations significantly limited the seasons, areas, and gear used for taking seals.²⁴⁸

Though arbitral recommendations proved ineffective and subsequent attempts to reach agreement were difficult, eventually, in exchange for percentages of the land-based harvest of seals,²⁴⁹ all four nations assented to coastal state authority by treaty in 1911.²⁵⁰ The success of the treaty was probably

243. Sealers took an average of 3 females to 1 male through pelagic sealing practices. J. TOMASEVICH, INTERNATIONAL AGREEMENTS ON CONSERVATION OF MARINE RESOURCES 77 (1943).

244. EDWARD MILES ET AL., THE MANAGEMENT OF MARINE REGIONS: THE NORTH PACIFIC 88 (1982). The United States gave notice to mariners of the prohibition which prompted the British to react by sealing in the area. Apparently, the subsequent arrest of these vessels almost led to a naval battle. *Id.*

245. The doctrine was described in a letter from the U.S. Secretary of the Treasury. Later, it was the basis for a decision by an American judge in sentencing 1 U.S. and 2 Canadian vessels for sealing in the area. TOMASEVICH, *supra* note 243, at 81.

246. *Id.* at 81-82.

247. *Id.* at 83.

248. The regulations prohibited (1) pelagic sealing within 60 miles of the Pribilof Islands; (2) prohibited sealing from May 1 to July 31 in the eastern area of the Bering sea; (3) required licenses and logs for ships using the area; (4) required sailing ships only be used; and (5) prohibited firearms, nets and explosives to catch seals, with the exception of shotguns during open season outside the Bering Sea. TOMASEVICH, *supra* note 243, at 85.

249. *Id.* at 96.

250. Convention for the Preservation of Fur Seals, 37 Stat. 1542, T.I.A.S. No. 564, at

inspired by the economic incentives of the compromise.²⁵¹

The Interim Convention on the Conservation of Fur Seals,²⁵² a successor to the 1911 Treaty, was significant in that Article II(1) required the parties to cooperate in the research of "the relationship . . . is between fur seals and other living marine resources and whether fur seals have detrimental effects on other marine living resources substantially exploited by any of the Parties" Thus to the extent that the Interim Convention recognized the interrelationship between marine animals in setting harvest limits, it expanded the area of appropriate inquiry to the larger ecosystem. Although no longer in force, the Interim Convention marked a change in conservation agreements in that single species harvest yields were no longer the sole criteria for managing the resource.

B. Conservation as a Justification for Unilateral Claims

Soon after World War II, discussions of extension of conservation zones into the high seas culminated in the Truman Proclamation.²⁵³ As with previous extensions of regulatory

96. Actually there was an earlier treaty between the United States and the United Kingdom, but it is not clear that this agreement covered pelagic sealing practices.

251. See TOMASEVICH, *supra* note 243, at 118. The United States provided \$200,000 as advance payment on sealskins to be taken in the future. This money was used to compensate nationals who had formerly engaged in sealing. *Id.* at 96. Though the treaty and its successor initially proved effective in replenishing fur seal populations, other environmental factors have led to the seals' decline in number. There is some concern that the use of large-scale driftnets and trawl nets in the North Pacific have led to the decline in populations. See generally William T. Burke, *Extended Fisheries Jurisdiction and the New Law of the Sea*, in GLOBAL FISHERIES: PERSPECTIVES FOR THE 1980s, at 7 (Brian J. Rothchild ed., 1983).

The total pre-exploitation population is estimated to have been 3-4 million seals, the majority of which bred in the Pribilof Islands. By 1911 seal numbers had been reduced to about 300,000. From 1911 until the 1950s, helped by a complete ban on commercial sealing from 1912-1917, the Pribilof population steadily recovered to a point where it reached its estimated pre-exploitation level of 2-2.5 million. It has now [as of 1984] dwindled to about 1.2 million.

SIMON Lyster, *INTERNATIONAL WILDLIFE LAW* 41 (1985). Current estimates continue to place the population at 1.2 million despite conservation efforts. Telephone Interview with Charles Fowler, Program Leader for Population Ecology and Assessment, NMFS (Oct. 22, 1991).

252. The novelty of this approach is by the use of the term "what." This was (and is) a new approach to resource management. Interim Convention on Conservation of North Pacific Fur Seals, Feb. 9, 1957, art. 2(1)(b), 8 U.S.T. 2283, 314 U.N.T.S. 105, 107. The treaty failed to gain U.S. approval in 1985. See Burke, *supra* note 251, at n.109.

253. Dr. Lee Alverson, Lecture in Seattle, Wash. (Feb. 14, 1991) (on the extension of United States Conservation claims and the function of the International North Pacific Fisheries Commission).

authority, the Truman Proclamation was justified in terms of conservation objectives:

In view of the pressing need for conservation and protection of fishery resources, the Government of the United States regards it as proper to establish conservation zones in those areas of the high seas contiguous to the coasts of the United States wherein fishing activities have been or in the future may be developed and maintained on a substantial scale. Where such activities have been or shall hereafter be developed and maintained by its nationals alone, activities shall be subject to the regulation and control of the United States.²⁵⁴

Recall that, in the fur seal arbitrations, the United States argued that a coastal state may prohibit the taking of marine resources "developed and maintained" by it.²⁵⁵ Recall also that the arbitral commission rejected this position, finding no property rights in a managed resource. The Truman Proclamation met with greater acceptance. After the declaration, Peru, Ecuador, and Chile extended their territorial sea to "conserve and exploit the natural resources of the sea."²⁵⁶ With the emergence of the North-South conflict in resource use, economic development was used as a further justification for the extension.²⁵⁷ Nonetheless, conservation was still regarded as a sufficient, though perhaps no longer necessary, condition for the extension of coastal state authority over high seas areas.

Notably, the Truman Proclamation claimed conservation

254. Proclamation No. 2668, 10 Fed. Reg. 12,304, 12,304 (1945). The White House press release that was issued the same day identified the maintenance of high yields of U.S. salmon as a motivation:

As a result of the establishment of this new policy, the United States will be able to protect effectively, for instance, its most valuable fishery, that for the Alaska salmon. Through painstaking conservation efforts and scientific management the United States has made excellent progress in maintaining the salmon at high levels. However, since the salmon spends a considerable portion of its life in the open sea, uncontrolled fishery activities on the high seas, by nationals of either the United States or other countries, have constituted an ever present menace to the salmon fishery.

Proclamations Concerning United States Jurisdiction Over Natural Resources in Coastal Areas and the High Seas, 13 DEP'T ST. BULL. 484 (Sept. 1945).

255. See *supra* note 250 and accompanying text.

256. *Latin American Meeting on Aspects of the Law of The Sea: Declaration and Resolutions*, Aug. 8, 1970, reprinted in 10 I.L.M. 207, 208 (1971); *First Conference on the Exploitation and Conservation of the Maritime Resources of the South Pacific*, Santiago, August 18, 1952, Chile-Ecuador-Peru, reprinted in 1 NEW DIRECTIONS IN THE LAW OF THE SEA 231-32 (S. Houston Lay et al. eds., 1973).

257. Extension of coastal state authority over unclaimed areas did not encounter the difficulties in allocation associated with the fur seals.

not only on behalf of fully exploited fisheries, but on behalf of fisheries that "in the future may be developed and maintained on a substantial scale." This extension permitted the management of areas where potentially profitable stocks, either through direct exploitation or bycatch, were not being conserved.

The concern over unexploited species was reaffirmed by President Reagan's EEZ Proclamation, reserving to the United States "sovereign rights for the purpose of . . . conserving and managing natural resources" out to 200 nautical miles.²⁵⁸ This U.S. claim to "sovereign" jurisdiction, however, came after its general acceptance by the international community through negotiations at the U.N. Conference on the Law of the Sea. This indicates greater international tolerance for extensions of authority to conserve resources as a whole, rather than specific species.

The justification of unilateral action on the basis of conservation or protection of common resources is unique to the area of international environmental law and perhaps explains why these unilateral claims frequently are tolerated by other states.²⁵⁹ As custodian of the common heritage, unilateral assertions to regulation have been quite successful.²⁶⁰ The disadvantages of unilateral action are obvious and need not be articulated in great detail. In the international arena, cooperation among states is the currency of compliance. There are, however, several distinct advantages to unilateral action. First, in the absence of any other mechanisms, it places the problem at issue (the first state of norm formation) where the alternative is merely inaction or suffering the long delays associated with multilateral negotiation. If the state has any leverage because of its size or geographical location, the unilateral act can have global or regional consequence.²⁶¹ Further, to the extent that the unilateral act attempts to marshal moral and political authority, it can create

258. Prior to President Reagan's declaration in 1983, an exclusive economic zone extending United States control over fisheries out to 200 miles, had been for conservation purposes only, not sovereign jurisdiction. Proclamation No. 5030, 3 C.F.R. § 22 (1983).

259. See generally Richard B. Bilder, *The Role of Unilateral State Action in Preventing International Environmental Injury*, 14 VAND. J. TRANSNAT'L L. 51 (1981) (arguing that common national interests have become commonplace as justifications for one nation formulating international environmental policies unilaterally).

260. See, e.g., *id.* at 77 (Canada's Arctic Waters Pollution Prevention Act on which "Prime Minister Trudeau commented that '[w]e owe it to the world to do some something [about Arctic pollution]'").

261. *Id.* at 80, 83-86.

pressure to cooperate in resolving the issue.²⁶² Finally, to the extent that other states see that the acts are reasonable in light of the environmental threat posed, they further the development of customary international law.²⁶³

C. *Halibut and Salmon: The Abstention Principle As a Means of Controlling Bycatch*

Soon after the U.S. claim to a fishery conservation zone, multilateral negotiations between Japan, the U.S.S.R., Canada, and the United States established the International Convention for the high seas Fisheries of the North Pacific Ocean to regulate the take of halibut, salmon, and herring in the North Pacific.²⁶⁴ The Convention cited conservation of existing fish stocks and the reduction of directed catches of these species as its *raison d'être*.²⁶⁵ However, as exploitation of the fishery increased, the bycatch of halibut and salmon became an issue.

1. Halibut

Halibut was one of the earliest stocks to be internationally regulated with respect to bycatch. The Halibut Treaty of 1923, between Canada and the United States, explicitly discouraged the incidental catch of halibut when prohibited by the International Fisheries Commission (later named the International Pacific Halibut Commission (IPHC)).²⁶⁶ When prohibited hali-

262. *Id.* at 82. This can provide the parties an opportunity to reduce tensions by substituting a multilateral solution to the problem. For example, U.S. legislation to protect endangered species probably helped CITES to gain international acceptance. *Id.*

263. In so doing, the act may create a minimum consensus of what is tolerable for the parties involved. This can lead to the development of minimum standards and uniformity in coastal state practice, even if no universal definition of the norm exists. "A 'soft' norm can help to define standards of good behavior corresponding to what is nowadays to be expected from a 'well-governed State' without having been necessarily consecrated as an in-force customary norm." Dupuy, *supra* note 75, at 434.

264. In fact, two authors argue it was largely as result of pressure from the Pacific Northwest salmon interests. JACKSON & ROYCE, *supra* note 77, at 23.

265. The preamble to the Convention reads:

Recognizing that . . . it is highly desirable . . . to promote and coordinate the scientific studies necessary to ascertain the conservation measures required to secure the maximum sustained productivity of fisheries of joint interest . . . and provide for necessary restraints on [the Contracting Parties] own nationals and fishing vessels.

International Convention for the High Seas Fisheries of the North Pacific Ocean, May 9, 1952, entered into force June 12, 1953, 205 U.N.T.S. 65, 80; see also *id.*, art. IV, at 86-87 (discussing the guiding considerations of the Commission).

266. Convention for the Preservation of the Halibut Fisheries of the Northern Pacific Ocean, Mar. 2, 1923, U.S.-Can., 32 L.N.T.S. 94 (1923).

but was taken incidentally, halibut could only be used for food for the crew or landed and turned over to government authorities.²⁶⁷ The landed halibut would be sold and the proceeds kept by the government.

In 1930 these regulations led to a new agreement incorporating gear, areas, and other mechanisms to protect immature fish and to preserve the fishery.²⁶⁸ Gear restrictions in areas that regularly yielded undersized fish were announced several years in advance to allow adjustment.²⁶⁹ Between the two parties, the Convention worked smoothly, but as foreign fleets began to enter the area regulation became more difficult.²⁷⁰

With the surrender of Japan after World War II, the United States sought to limit Japanese fishers in the Northern and Eastern Pacific Ocean. Pursuant to the Peace Treaty of 1952, Japan entered into negotiations with the United States and Canada on fisheries near the North American continent.²⁷¹ The result was the International North Pacific Fisheries Commission, created by the Convention for the High Seas Fisheries of the North Pacific Ocean. The Convention established the abstention principle as a means of conserving fish stocks by limiting the number of new entrants into the fishery. This principle required states to abstain from entering fisheries and taking stocks where countries have, through the expenditure of time, effort and money on research and management, and through restraints on their fishers, increased and maintained the productivity of stocks of fish.²⁷² This formulation attempted to encapsulate the principle

267. *Id.* art. 1, at 95.

268. May 9, 1930, 121 L.N.T.S. 45.

269. The Commission announced the closure of dory fishing in one area three years in advance in order to allow adequate time for replacement of appropriate gear by fishers. TOMASEVICH, *supra* note 243, at 163.

270. In 1936-37, the proposal to send the British refrigerator ship, *Thorland*, to the area sparked reaction from both Canada and the United States. Both countries passed domestic legislation to deny access to territorial waters and ports to nonsignatories. MILES, ET AL. *supra* note 241, at 97.

271. *Id.* at 92.

272. The principle is explained by the International Technical Conference on the Conservation of the Living Resources of the Sea (Rome 1955) in greater detail:

[W]here countries, through research, regulation of their own fishermen and other activities, have restored or developed or maintained stocks of fish so that their productivity is being maintained and utilized at levels reasonably approximating their maximum sustainable productivity, and where the continuance of this level of productivity depends upon such sustained research and regulation. Under these conditions, the participation of additional States in the exploitation of the resource will yield no increase in food to mankind, but will threaten the success of

argued half a century earlier in the Fur Seal Arbitration and declared a decade earlier in the Truman Proclamation. Since its creation, the character of the treaty has changed, making the use of the abstention principle less applicable.²⁷³

This initial resort to a customary principle was necessary to preserve the United States' and Canadian interest in excluding nonparties to the treaty.²⁷⁴ It proved ineffective, however, in preventing the increased bycatch of halibut from nonparty foreign trawlers. During the 1960s, the Japanese groundfish fleet took significant quantities of juvenile halibut in the Bering Sea area. The bycatch of the juvenile fish caused a dramatic decline in the fish stock, both within the Bering Sea and the coastal areas.²⁷⁵ In 1971, the bycatch of halibut was estimated at 13,589 mt, where the total longline catch was 35,855 mt.²⁷⁶ Attempts to regulate the trawler bycatch directly were unsuccessful. Subsequent bilateral negotiations through the IPHC, in which access to ports and territorial waters was traded for compliance with season closures and limitations on halibut bycatch, however, were more successful and halibut stocks slowly recovered.²⁷⁷

2. Salmon

a. *The North Pacific Fishery*

Perhaps the first international recognition of the bycatch

the conservation programme. Where opportunities exist for a country or countries to develop or restore the productivity of resources, and where such development or restoration by the harvesting State or States is necessary to maintain the productivity of resources, conditions should be made favourable for such action. [1956] Y.B. Int'l L. Comm'n A/CN.4/SER.A/1956/Add. 1, at 41, 42.

Id.

273. Experts experienced with the Commission attribute little success to developing an effective resource regime. However, the Commission helped by providing a forum for scientists and policy makers to identify problems in the fishery and meet separately on a bilateral basis to resolve issues. In this way, states were not committed to specific obligations regarding limitations on fishing high seas areas, but problems were solved through the give and take of negotiation. The continued existence of a treaty for management of the North Pacific area provided recognition of a collective will to solve problems with the fishery. Lunde, *supra* note 79, at 25.

274. See *supra* notes 145-46 and accompanying text.

275. Bricklemeyer et al., *supra* note 35, at 263-64. Of course, there is some question as to the precise "cause" of the decline in numbers, but to the extent that reputable scientists recognize the relationship, it is becoming increasingly apparent that this source of fish mortality should not be ignored.

276. *Id.* at 98.

277. *Id.*

problem came with an agreement to investigate bycatch in connection with Pacific salmon.²⁷⁸ In 1892, the United States and the United Kingdom (U.K.) on behalf of Canada, exchanged notes agreeing to investigate "[t]he limitation or prevention of exhaustive or destructive methods of taking fish and shell-fish in . . . the waters of the open seas outside the territorial limits of either country."²⁷⁹ Although it was never fully adopted, the investigation led to a proposed treaty in 1908.²⁸⁰ Further, a convention governing the direct take of salmon was signed between Canada and the United States in 1930 to preserve the Fraser River fishery.²⁸¹ Ratification of the treaty, however, took seven additional years due to the controversy over various conservation measures to be taken to preserve the salmon runs.

As a result of the Protocol to the International Convention for the High Seas Fisheries of the North Pacific Ocean, management and scientific effort were used to try to separate salmon of North American and Asian origin.²⁸² Given the wide migrations of both families of salmon across the North Pacific, this goal proved difficult to achieve.²⁸³ By 1956, it was clearly established that U.S. Bristol Bay sockeye salmon intermingled with at least three species of Asian-origin salmon.²⁸⁴

The abstention principle was used by the United States in 1958 to advocate prevention of all Japanese fishing activities in areas where there was a substantial intermingling of sockeye salmon and other species permitted to be taken.²⁸⁵ No complete

278. Domestically, regulation of the catch of undersized fish goes back to at least the English Parliamentary Act of 1714, which required larger meshed nets for use by British fishing vessels. DOUGLAS M. JOHNSTON, *THE INTERNATIONAL LAW OF FISHERIES: A FRAMEWORK FOR POLICY-ORIENTED INQUIRES* 322 & n.8 (1965).

279. *Exchange of Notes Between Great Britain and the United States of America Respecting the Preservation of the Fisheries in the Waters Contiguous to Canada and the United States*, reprinted in BERND RUSTER ET AL., *XXII INTERNATIONAL PROTECTION OF THE ENVIRONMENT: TREATIES AND RELATED DOCUMENTS* 27 (1980).

280. JOHNSTON, *supra* note 278, at 385. The proposed treaty was drawn up and ratified in 1908. The United States, however, failed to adopt regulations under the agreement and Canada withdrew her support. *Id.*

281. Convention for the Protection, Preservation and Extension of the Sockeye Salmon Fishery of the Fraser River System, May 25, 1930, T.I.A.S. No. 918, 184 L.N.T.S. 305.

282. Protocol to the International Convention for the High Seas Fisheries of the North Pacific Ocean, May 9, 1952, ¶ 3, 4 U.S.T. 380, 392, 205 U.N.T.S. 65, 98.

283. See JACKSON & ROYCE, *supra* note 77, at 86-93 (reproducing maps displaying migration ranges).

284. *Id.* at 83.

285. This was despite the fact that intermingling stocks were exempted from

resolution of the issue was reached.²⁸⁶ The unstated understanding of the resolution was that Japan should avoid the incidental catch of salmon of North American origin intermingled with Asian stocks on the high seas by restricting fishing during certain times of the year in migration areas.²⁸⁷

In the 1970s, concern over bycatch in the North Pacific intensified. Japanese fishers fishing in the Eastern Bering Sea for chinook salmon took North American salmon in small quantities, and while groundfishing in the Eastern Bering Sea and Gulf of Alaska these fishers took some chinook as well. With the development of squid driftnet fisheries just south of the two hundred-mile Alaskan area, additional strains were put on the stock.²⁸⁸ As a compromise solution to the problem, Japan restricted the northern and western limits of these operations. It further agreed, in 1983, to ban the importation of North American salmon caught in driftnet operations.²⁸⁹

b. *The Atlantic Fishery*

The abstention principle was also used in a controversy over Atlantic salmon fishing by Canadian, United States, U.K., Swedish, Danish, West German, and to a lesser extent, Norwegian fishers in the 1960s. Attempts were made to regulate the taking of this stock through the International Convention for the Northwest Atlantic Fisheries.²⁹⁰ Denmark, West Germany, and Norway exercised their option to exempt themselves from the quota regulation provided in the Convention.²⁹¹ In retaliation, the United States passed the Fisherman's Protective Act, to limit

application of the principle. Article IV(1) of the Convention exempts certain stocks where there exists:

waters in which there is an historic intermingling of the fishing operations of the parties concerned, and intermingling of the stock of fish is exploited by the operations, and a long established history of joint conservation and regulation among the parties concerned, so that there is consequent impracticability of segregating the operations and administrative control.

International Convention for the High Seas Fisheries of the North Pacific Ocean, *supra* note 265 art. IV(1)(c), at 386.

286. JOHNSTON, *supra* note 278, at 277-79.

287. JACKSON & ROYCE, *supra* note 77, at 134.

288. *Id.* at 160.

289. *Id.* at 160-61.

290. International Convention for the Northwest Atlantic Fisheries, Feb. 8, 1949, 1 U.S.T. 477, 157 U.N.T.S. 157, 170.

291. *Id.* art. VIII, ¶ 9, 1 U.S.T. at 483, 157 U.N.T.S. at 170; see also Erin K. Flory, Note, *Construing the Pelly and Packwood-Magnuson Amendments: The D.C. Circuit Court Harpoons Executive Discretion*, 61 WASH. L. REV. 631, 641 n.53 (1986).

the importation of fish products from these countries.²⁹² Eventually these countries relented and began phasing out high seas salmon fishing, limiting their catches to territorial waters.²⁹³ Other than these specific instances, however, the abstention principle has failed to reach the status of a binding customary obligation on all states.²⁹⁴ The first United Nations conference sought to embody this principle in the 1958 Convention, but most of the states present objected to the incorporation of the principle in a general law on fisheries.²⁹⁵ The use of this doctrine in these specific instances, nevertheless, is further evidence of the more generalized authority to manage living resources and to conserve limited stocks.²⁹⁶

D. Elimination of Wasteful Technologies: Gear Regulations

As evidenced by the Halibut Treaty, gear regulation and area closure were the primary tools for eliminating high seas bycatch at the turn of the century. In 1929, Denmark, Sweden, Germany, Poland, and Danzig entered into a treaty known as the Baltic Convention.²⁹⁷ The Convention prohibited trawling within territorial waters, instituted size limits for plaice and flounders, and provided inducements for fishers to return undersized fish to the water alive.²⁹⁸

Since World War II, a variety of regulations set by international fisheries commissions limited the amount of undersized and incidentally caught fish. The International Convention for the Regulation of the Meshes of Fishing Nets and the Size Limits of Fish²⁹⁹ set minimum mesh sizes, proscribed the minimum size of a dozen species of fish, and prohibited the landing or sale

292. 22 U.S.C. §§ 1971-80 (1988). The Pelly Amendment to the Fisherman's Protective Act requires the Secretary of Commerce to certify to the presidents of countries in violation "[w]hen the Secretary of Commerce determines that nationals of a foreign country, directly or indirectly, are conducting fishing operations in a manner or under circumstances which diminish the effectiveness of an international fishery conservation program." 22 U.S.C. § 1978(a)(1).

293. Cyril De Klemm, *Migratory Species in International Law*, 29 NAT. RES. J. 935, 945 (1989); McDorman, *supra* note 214, at 484.

294. See BROWNIE, *supra* note 64, at 259.

295. De Klemm, *supra* note 293, at 945-46.

296. See *supra* notes 264-65 and accompanying text.

297. 121 British and Foreign State Papers 254-56, reprinted in TOMASEVICH, *supra* note 243, at 270.

298. *Id.*

299. *Opened for signature*, Mar. 23, 1937, 115 L.N.T.S. 93. Due to the outbreak of W.W.II, many of the signatory countries did not ratify the Convention. TOMASEVICH, *supra* note 243, at 271.

of undersized fish.³⁰⁰ Undersized fish were required to be returned to the water "as soon as reasonably practicable." While many of the provisions regarding mesh sizes were embodied in regulations already in force by the contracting parties, the Convention had the salutary effect of preventing the introduction of more destructive gear into the fishery.³⁰¹

Attempts to regulate fisheries in the North Sea with mesh regulations proved difficult. The Overfishing Convention of 1946 set minimum mesh sizes, and prohibited the sale of undersized fish.³⁰² Dissatisfaction with the effectiveness of these regulations led to the establishment of a central authority, the International Commission for the North Atlantic Fisheries, to make recommendations on conservation.³⁰³ The Commission imposed regulations requiring the collection of data on bycatch and setting gear restrictions and overall catch limits, to limit the impact on young fish and bycatch of commercially valuable species.³⁰⁴ The Convention provides that the parties may either accept or reject policies of the Commission and leaves enforcement up to the contracting parties.³⁰⁵ The failure of states to actively enforce these regulations diminishes their effectiveness.³⁰⁶

E. Development of an Ecological Approach to Ocean Uses

The emergence of the concept of an ocean ecology has also contributed to the recognition of limitations on the use of the high seas. This concept surfaced in U.N. resolutions during the early 1970s. The Declaration of Principles Governing the Sea-Bed and the Ocean Floor exhorted states to prevent "pollution and contamination and other hazards to the marine environment, including the coastline and of the interference with the

300. International Convention for the Regulation of the Meshes of Fishing Nets and the Size Limits of Fish, *supra* note 299, arts. 5, 9, 11; *see also* JOHNSTON, *supra* note 278, at 361.

301. TOMASEVICH, *supra* note 243, at 273.

302. North Sea Convention of 1946, art. 9, 231 U.N.T.S. 199, *cited in* JOHNSTON, *supra* note 278, at 361.

303. North-East Atlantic Fisheries Convention, Jan. 24, 1959, art. 3, 486 U.N.T.S. 157, 160.

304. International Commission for the Northwest Atlantic Fisheries, Annual Proceedings for the Year 1968-69, *cited in* ALBERT W. KOERS, INTERNATIONAL REGULATION OF MARINE FISHERIES 94 & n.44 (1973).

305. International Convention for the Northwest Atlantic Fisheries, arts. VII, XII, entered into force July 3, 1950, 157 U.N.T.S. 157, 160.

306. *See*, KOERS, *supra* note 304, at 92.

ecological balance of the marine environment."³⁰⁷ Disruption from excessive waste fits within this exhortation.³⁰⁸

Similarly, the Stockholm Declaration enunciated the principle, discussed in other international fora,³⁰⁹ the states have "the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment . . . of areas beyond the limits of national jurisdiction."³¹⁰ While primarily concerned with pollution damage, the Declaration evidences a multifactorial approach to the regulation and management of areas beyond national jurisdiction including conservation of resources for future generations,³¹¹ conservation of nonrenewable resources,³¹² and the maintenance of the earth to reproduce

307. *Declaration of Principles Governing the Sea-bed and the Ocean Floor, and the Subsoil Thereof, Beyond the Limits of National Jurisdiction*, G.A. Res. 2749, U.N. GAOR, Supp. No. 28, U.N. Doc A/8049 (1970).

308. Little research has been done on the biological effects of large discards of fish carcasses in the open ocean. However, fish discards in enclosed bays have been shown to present a problem. A typical factory trawler discards 200,000 pounds of fish per day, *Fishing Company Faces Suit over Waste Dumping*, SEATTLE TIMES, Apr. 24, 1991, at F1, and is capable of discarding half of that amount in a four-hour period. *Arctic Alaska Fisheries Corp. — Fisher Processor Reels in Big Share of Deep-Sea Catch*, SEATTLE TIMES, Feb. 5, 1990, at D2.

309. In the Trail Smelter Arbitration, the Court declared that "no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence." *Trail Smelter (U.S. v. Can.)*, BROWNIE, *supra* note 64, at 1965.

310. *Declaration of the U.N. Conference on the Human Environment*, Principle 21, U.N. Doc. A/CONF.48/14 (1972), reprinted in 11 I.L.M. 1416, 1420 (1972). Many states consider this a normative statement. Dupuy, *supra* note 75, at 422.

Similarly, Principle 22 refers to environmental damage as a liability to responsible states:

States shall cooperate to develop further the international law regarding liability and compensation for the victims of pollution and other environmental damage caused by activities within the jurisdiction or control of such States to areas beyond their jurisdiction.

Id. Professor Brownlie observes, in the context of this declaration and the exchange of notes between Japan and the United States, that customary international laws regarding the environment developed out of classic principles of liability. BROWNIE, *supra* note 64, at 10. Because causation is a critical factor in assessing liability, recognition of environmental damage has been slowed. See, James M. Olson, *Shifting the Burden of Proof: How the Common Law Can Safeguard Nature and Promote an Earth Ethic*, 20 ENVTL. L. 891, 895 (1990) ("The most pervasive problems of environmental law today stem from the shackles the common law has placed on proving cause and, relatedly, proving harm conducive to legal remedy.").

311. *Declaration of the U.N. Conference on the Human Environment*, *supra* note 310, at 1418 (Principle 2).

312. *Id.* (Principle 5).

vital renewable resources.³¹³

1. The Berne Convention on the Conservation of European Wildlife

Although not solely concerned with marine species, the Convention for Conservation of European Wildlife and Natural Habitats³¹⁴ contains several provisions relating to the indirect capture of cetaceans³¹⁵ and migratory species.³¹⁶

Article 8 prohibits "the use of all indiscriminate means of capture and killing . . . causing the local disappearance of, or serious disturbance to, populations of a species, and in particular, the means specified in Appendix IV." Appendix IV lists the prohibited means of capture or killing of protected species, including nets used on a large scale or in an indiscriminate manner. The application of Appendix IV to driftnet fishing in the Mediterranean resulted in a ruling that such fishing practices were contrary to the Convention.³¹⁷

2. The 1982 Law of the Sea Convention Regulation of Associated and Dependent Species

The 1982 Convention on the Law of the Sea³¹⁸ is a unique agreement in that broad participation by United Nations members leads many to argue that the 1982 Convention was intended to bind all nations.³¹⁹

313. *Id.* (Principle 3).

314. Sept. 19, 1979, Europ. T.S. No. 104 [hereinafter the Berne Convention], reprinted in LYSTER, *supra* note 251, at 428.

315. These species have been listed in Appendices I and II. *Id.* at 134-35. Among the marine species listed in Appendix II include the humpback whale (*Magaptera novaengliae*) and the Kemp's ridley turtle discussed in connection with the shrimp fishery in the Gulf of Mexico. *Id.* Appendix III lists the common marine mammals found in European waters. *Id.*

316. *Id.* 147-48. It is unclear from the face of the agreement whether the treaty actually extends to high seas areas. However, the Explanatory Report to the Convention indicates that the limiting phrases "in Europe" or "European" were omitted from the phrase in Article 6, which protects wild flora and fauna and does "not restrict the geographical coverage of the convention to the European continent" and "include[s] visiting migratory animals not confined to Europe." *Id.*

317. See Report of the Secretary-General, *supra* note 42, at 13.

318. Third United Nations Convention on the Law of the Sea, opened for signature Dec. 10, 1982, art. 118, 21 I.L.M. 1261, 1291 (1982) (U.N. Doc. No. A/CONF.62/122 (1982)) [hereinafter 1982 Convention].

319. See, e.g., *id.*, pmbl. ¶ 5, at 1271 (which notes "the desirability of establishing through this Convention . . . a legal order for the seas and oceans . . ."); see also Anthony D'Amato, *The Law Generating Mechanisms of the Law of the Sea Conferences and Convention*, in CONSENSUS AND CONFRONTATION: THE LAW OF THE SEA TREATY 133

a. *High Seas Provisions*

At first blush, an unregulated approach to high seas activities, appears to be endorsed by Article 87 of the Convention. The article tracks the language developed by the 1958 Convention on the high seas discussed earlier, with the important proviso that freedom of fishing be consistent with Section 2 of the Convention.³²⁰ Unfortunately, Section 2, entitled Conservation and Management of the Living Resources of the high seas, provides no clear picture of the obligation of states on the high seas.

Article 117 of Section 2 specifically requires that: "[A]ll States have the duty to take, or to co-operate with other States in taking such measures for their respective nationals as may be necessary for the conservation of the living resources of the high seas."³²¹ Articles 118 and 119 are the delineation of this general recognition.

Article 118 requires negotiation between states where nations exploit the same resource or resources in the same area.³²² Although the treaty is not in force, should it take effect, it requires parties to submit such disputes to settlement procedures.³²³ Negotiations have occurred over high seas fisheries, as discussed above;³²⁴ however, whether the parties felt obligated under this provision to submit to negotiations is not apparent from the act of compliance alone. As discussed earlier, states have used the Convention as justification for unilateral actions to

(Jon M. Van Dyke ed., 1985) (the legislative-type rules of the Convention "have an impact upon customary law . . . because of their status in a multilateral convention.").

320. 1982 Convention, *supra* note 318, at 1272-73, Article 87 provides:

The high seas are open to all States, whether coastal or land-locked. Freedom of the high seas is exercised under the conditions laid down by the Convention and by other rules of international law. It comprises, inter alia, both for coastal and land-locked States:

.....
(e) freedom of fishing, subject to the conditions laid down in § 2.

Id. at 1286.

321. *Id.* art. 117, at 1291.

322. Article 118 provides:

States shall co-operate with each other in the conservation and management of living resources in the areas of the high seas. States whose nationals exploit identical living resources, or different living resources in the same area, shall enter into negotiations with a view to taking the measures necessary for the conservation of the living resources concerned. They shall, as appropriate, co-operate to establish subregional or regional fisheries organizations to this end.

Id.

323. *Id.* art. 297(3), at 1324.

324. *See infra* tbl. 2.

conserve high seas resources.³²⁵

Article 119 addresses the problem of bycatch in two important respects. First, it requires the determination of allowable catches for high seas fisheries based upon maximum sustainable yield (MSY), taking into account the interdependence of species and any "generally recommended minimum standards."³²⁶ It is an open question whether recommendations by the U.N. General Assembly are sufficient to qualify as "minimum standards," but given the widespread support of the U.N. Resolution on Driftnet Fishing by various international fishing and environmental organizations,³²⁷ it would be difficult to ignore the effect of that general consensus. At any rate, one could safely say that this provision leaves open the possibility for international recognition of emerging norms and practices on the high seas.³²⁸

Second, Article 119 specifically addresses the bycatch problem by requiring assessment of the effects of fishing activities on associated or dependent species whose numbers "may become seriously threatened."³²⁹ Further definition of "serious" depletion is not provided, but presumably this standard would be developed via "subregional, regional or global" organizations,³³⁰

325. See *supra* notes 142 & 143 and accompanying text.

326. *Id.* at 1291. Article 119 states:

1. In determining the allowable catch and establishing other conservation measures for the living resources in the high seas, States shall:

(a) take measures which are designed, on the best scientific evidence available to the States concerned, to maintain or restore populations of harvested species at levels which can produce the maximum sustainable yield, as qualified by relevant environmental and economic factors, including the special requirements of developing States, and taking into account fishing patterns, the interdependence of stocks and any generally recommended international minimum standards, whether subregional, regional or global. . .

Id.

327. See *supra* notes 156-60 and accompanying text.

328. 1982 Convention, *supra* note 318, art. 119, at 1291. States are also required to "tak[e] into account fishing patterns" in devising conservation measures. While this term is not defined, conservation measures inside the EEZ permit "regulating season and areas of fishing, the types, sizes and amount of gear and the type, sizes and number of fishing vessels that may be used." *Id.* art. 119, § 62(4)(c). Assuming, the sections can be construed together *in pari materia*, areal, gear, and effort regulations are acceptable restrictions on high seas fishing activities.

329. *Id.* art. 119, § 62(4)(b) provides:

[States shall] (b) take into consideration the effects on species associated with or dependent upon harvested species with a view to maintaining or restoring populations of such associated or dependent species above levels at which their reproduction may become seriously threatened.

330. There is no direct evidence that this interpretation is correct, and evidence to the

such as the International Whaling Commission (IWC)³³¹ and various fisheries councils. Widely accepted treaties, such as CITES,³³² may provide a standard by which to prohibit detrimental fishing practices. Nations are authorized to intercede in the event of "serious harm" under Article 297, which permits states to submit to dispute settlement where "a coastal State has manifestly failed to comply with its obligations to ensure . . . [that] the living resources in the exclusive economic zone [are] not seriously endangered."³³³ Thus, a contracting party may challenge fishing practices on the high seas that fail to ensure the continued survival of the resource.³³⁴

Failure to comply with obligations to conserve high seas resources also can be challenged as an abuse of the right to fish the high seas. Article 300 requires states to "exercise rights, jurisdiction and freedoms recognized in th[e] Convention in a manner which would not constitute an abuse of right."³³⁵ This

contrary is provided in the example of large-scale driftnet fishing. United States and Japanese statements of the standards to be used to evaluate the adverse impact of the practice differ significantly.

331. Articles 65 and 120 provide for coastal states or international organizations to limit or regulate the exploitation of marine mammals. 1982 Convention, *supra* note 318, arts. 65, 120, at 1282, 1291. Article 65 allows states to regulate marine mammals "more strictly" than provided for under the treaty. While this in itself does not obligate the states or provide sanctions for not regulating, the Article also *requires* that "States . . . co-operate with a view to the conservation of marine mammals . . . through . . . international organizations." The latter creates some obligation to justify regulations which are more lax than those promulgated by international organizations.

332. CITES, *supra* note 118. As of March 1983, 106 nations were signatory to the Convention. U.S. DEP'T OF STATE, TREATIES IN FORCE: A LIST OF TREATIES AND OTHER INTERNATIONAL AGREEMENTS OF THE UNITED STATES IN FORCE ON JANUARY 1, 1990, at 295 (1990).

333. 1982 Convention, *supra* note 318, art. 297(3)(b)(i), at 1324. *But see, id.* art. 297(3)(a), at 1324 (excluding coastal states from mandatory dispute resolution in some circumstances). Article 297 provides:

[t]he coastal State shall not be obliged to accept the submission to such settlement of any dispute relating to its sovereign rights with respect to the living resources in the exclusive economic zone or their exercise, including . . . the terms and conditions established in its conservation and management laws and regulations.

Id. The provisions of subsections 3(b) and 3(a) appear to be completely at odds with each other. However, if one construes the treaty according to its plain meaning, subsection (3)(a) prevents challenge only to conservation laws and regulations. Practices that seriously threaten living resources, though unregulated, presumably would be subject to challenge. The interpretation given to subsection (3)(b) depends significantly on the meaning given to "serious harm" which would authorize intercession on behalf of the resource.

334. This interpretation is somewhat bolstered by Article 290(1) which empowers an arbitral tribunal with the power to proscribe provisional measures to "prevent serious harm to the marine environment." *Id.* art. 290(1), at 1323.

335. *Id.* at 1326.

may be particularly important in construing Article 119's caution to manage associated and dependent species which are "seriously threatened."³³⁶

Finally, certain high seas species are singled out for special attention by the Convention. Article 116 subjects states' fishing rights to the "rights and duties as well as the interest of coastal States provided for, *inter alia*, in article 63, paragraph 2 [concerning stocks with an EEZ and high seas region] articles 64 to 67 [concerning highly migratory species, marine mammals, anadromous, and catadromous species]."³³⁷ The identification of specific stocks—migratory species, marine mammals, anadromous and catadromous species—indicates special management measures are required for these stocks.³³⁸ International management of marine mammals is specifically authorized under Article 65.³³⁹ However, apart from whales under the IWC, truly international management of marine mammal populations has not emerged.³⁴⁰

b. Coastal State Provisions

A complete discussion of coastal state controls over high seas bycatch is beyond the scope of this article.³⁴¹ However, effective control of high seas fishing is most dramatically changed by the most innovative, and, ironically perhaps the most widely accepted portion of the Convention: the establishment of an exclusive economic zone whereby states may exert management and extractive authority without full sovereignty

336. *Id.* at 1291.

337. *Id.* at 1290.

338. See discussion regarding state regulation of these stocks *infra* notes 346-58 and accompanying text.

339. One might argue that Article 65 provides only for exploitation of marine mammals, thus the Article is not relevant to bycatch. However, the full text of the Article clearly contemplates conservation measures:

Nothing in this Part restricts the right of a coastal State or the competence of an international organization, as appropriate, to prohibit, limit or regulate the exploitation of marine mammals more strictly than provided for in this part. States shall co-operate with a view to the conservation of marine mammals and in the case of cetaceans shall in particular work through the appropriate international organizations for their conservation, management and study.

Id. art. 65, at 1282 (emphasis added).

340. Indeed, one may argue that the United States' retreat from international management of highly migratory species is indicative of a reversal of this trend. See Pub. L. 101-627, 104 Stat. 4439 (1992) (to be codified at 16 U.S.C. § 1812).

341. See generally Burke, *supra* note 176.

over the region.³⁴²

Coastal states may exert significant control over the incidental capture of marine species on the high seas. The vast majority, perhaps ninety percent of the world's marine species live within or transit through extended coastal state zones.³⁴³ Species that migrate in and out of extended zones can move either into other countries' zones or into high seas areas. Article 63(2) requires:

Where the same stock or stocks of associated species occur both within the exclusive economic zone and in an area beyond and adjacent to the zone, the coastal State and the States fishing for such stocks in the adjacent area *shall seek*, either directly or through appropriate subregional or regional organizations, *to agree upon the measures necessary for the conservation of these stocks in the adjacent area.*³⁴⁴

The obligation to reach agreement on measures to protect migratory species is compulsory. Article 297 requires states to submit to arbitration those disputes that arise over the interpretation of the fisheries provisions of the 1982 Convention. The only exception concerns a coastal state's regulation of resources within its zone.³⁴⁵ Thus, objections to a fishing nation's use of high seas resources are subject to compulsory arbitration.

Authority for coastal state conservation of living resources is expressed in Article 61. The article requires states to take measures "designed to maintain or restore populations of harvested species [within their exclusive economic zones] at levels which can produce the maximum sustainable yield, as qualified by relevant environmental and economic factors."³⁴⁶ Similarly,

342. Article 56 of the Treaty limits the "sovereign rights" of coastal states within the EEZ for purposes of "exploring and exploiting, conserving and managing the natural resources, whether living or non-living . . . and . . . for economic exploitation and exploration of the zone." 1982 Convention, *supra* note 318, art. 56(1)(a), at 1279.

343. ANAND, *supra* note 38, at 283; De Klemm, *supra* note 293, at 946.

344. 1982 Convention, *supra* note 318, art. 63(2), at 1282 (emphasis added). This Article makes similar provision for stocks between two states' coastal zones:

Where the same stock or stocks of associated species occur within the exclusive economic zones of two or more coastal States, these States shall seek, either directly or through appropriate subregional or regional organizations, to agree upon the measures necessary to co-ordinate and ensure the conservation and development of such stocks without prejudice to the other provisions of this Part.

Id. Notice that this provision requires states to coordinate development as well as conserve of stocks. One might argue that the absence of the former requirement in Article 63(1) places a higher obligation on states to preserve high seas stocks.

345. See generally Burke, *supra* note 174, at 293-303.

346. 1982 Convention, *supra* note 318, art. 61, at 1281.

Article 62 requires the "coastal State . . . [to] promote the objective of optimum utilization of the living resources in the exclusive economic zone" ³⁴⁷

Coastal state claims to manage anadromous and catadromous stocks is the strongest case for coastal state management, given the provisions of Articles 66 and 67. States in whose rivers anadromous stocks originate have primary authority to establish conservation measures including total catches for these stocks. ³⁴⁸ Moreover, fishing for these stocks must be conducted "only" within the EEZ and landward zones, except where economic dislocation of high seas fishing states would result. ³⁴⁹ The power to establish conservation measures coupled with the power to prohibit high seas fishing of these stocks, appears to give coastal states the power to regulate high seas bycatch of these species. ³⁵⁰

Arguments for regulation of the bycatch of catadromous species "who spend the greater part of their life cycle" in coastal State waters ³⁵¹ is even stronger. Under Article 67, there is no requirement that the coastal state defer to economically dislocated high seas fishing states, and management of harvesting methods to sort mature and juvenile fish is specifically permitted. ³⁵²

347. *Id.*, art. 62, at 1281.

348. *Id.* arts. 66(1), (2), at 1282. Although finfish are clearly contemplated by the use of the term "anadromous stocks" in Article 66, the term is not defined anywhere in the treaty. Accordingly, some have argued that turtles, penguins, dugongs, and crocodiles could be considered anadromous. M. Rafiqul Islam, *The Proposed "Driftnet-Free Zone" in the South Pacific and the Law of the Sea Convention*, 40 INT'L & COMP. L.Q. 184, 189 & n.14 (1991).

349. Article 66 (3)(a) provides:

Fisheries for anadromous stocks shall be conducted only in waters landward of the outer limits of exclusive economic zones, except in cases where this provision would result in economic dislocation for a State other than the State of origin . . .

1982 Convention, *supra* note 318, art. 66(3)(a), at 1282.

350. The counter argument derives from the plain meaning of Article 66(3). Because bycatch is not within the purview of "[f]isheries for anadromous stocks," coastal states appear to be limited in their exercise of authority. See *id.* However, subsection (2) authorizes states to set the total allowable catch of anadromous fish. This would seem to include direct and indirect catches.

351. *Id.* art. 67(1), at 1283.

352. *Id.* art. 67(3), at 1283.

VI. POSSIBLE AND PROBABLE OUTCOMES OF EFFORTS TO
LIMIT HIGH SEAS BYCATCHA. *Models for the Regulation of Bycatch*

1. The Convention For the Regulation of Whaling

As we have seen, perhaps the earliest recognition of the concern for an entire ocean ecology was in the polar regions. The Convention for the Regulation of Whaling was concluded in 1931.³⁵³ Although not concerned with bycatch per se, the Convention tried to prevent excessive waste of other species by requiring whalers to make full use of the whale carcasses and prohibiting whalers from killing immature or female whales.³⁵⁴

This Convention was later superseded by the International Convention for the Regulation of Whaling (ICRW).³⁵⁵ Under the superseding Convention, the International Whaling Commission (IWC) is granted the authority for management of all whale stocks.³⁵⁶ The significance of this Convention to the bycatch issue is twofold. First, the ICRW attempts to control the commercial exploitation on "all waters" in which whaling is carried on commercially.³⁵⁷ Some parties to the ICRW seek to globally manage a family of species whether found within coastal waters or on the high seas. While this interpretation of the Convention is supported by most state parties to the Convention, several Latin American countries have consistently opposed such an interpretation.³⁵⁸

353. *Entered into force* Jan. 16, 1935, 155 L.N.T.S. 349.

354. *Id.* arts. V, VI; see also LYSTER, *supra* note 251, at 18.

355. *Opened for signature* Dec. 2, 1946, T.I.A.S. No. 1849, 161 U.N.T.S. 72 [hereinafter ICRW].

356. It is interesting to note that much controversy surrounds the scope of the treaty with respect to which species are regulated. The text of the treaty refers to "whales" but leaves the species undefined. See LYSTER, *supra* note 251, at 22.

357. ICRW, *supra* note 353, art. I, at 76. Of course, the Convention does not purport to control whaling practices of noncontracting parties. Article I reads:

2. This Convention applies to factory ships, land stations, and whale catchers under the jurisdiction of the Contracting Governments, and to all waters in which whaling is prosecuted by such factory ships, and whale catchers.

Id. art. I(2), at 76. Although the use of the conjunctive in this sentence would appear to increase the jurisdictional area, Article XI makes it clear that any contracting party may withdraw from the convention "on June thirtieth of any year by giving notice on or before January first of the same year" and the Convention shall cease to be in force against that party. *Id.* art. XI, at 86.

358. Peru, Mexico, Panama, Argentina, and Brazil have rejected this interpretation. Patricia W. Birnie, *International Legal Issues in the Management and Protection of the Whale: A Review of Four Decades of Experience*, 29 NAT. RESOURCES J. 903, 916 & n.60 (1989).

One authority points out that this interpretation is not necessarily in conflict with the concept of the EEZ as expressed in the 1982 Convention.³⁵⁹ Although Article 56 of the 1982 Convention grants the sovereign right "for the purpose of exploring and exploiting, conserving and managing" the resources within the 200 NM zone, Article 311 specifies that the 1982 Convention does not modify pre-existing agreements to the extent they are compatible with the 1982 Convention or agreement expressly preserved under it.³⁶⁰ Article 65 of the 1982 Convention appears to defer to the IWC in cautioning "[N]othing in this Part [V concerning the EEZ] restricts the right of a coastal State or the competence of an international organization, as appropriate, to prohibit, limit or regulate the exploitation of marine mammals more strictly than provided in this Part."³⁶¹ Thus, regulations "more strictly" limiting the bycatch of marine mammals could be argued.³⁶²

The Whaling Convention has been amended to require collection of information on vessels targeting on smaller whales such as minke, bottlenose, pilot, or killer whales. Minke,³⁶³ killer,³⁶⁴ and pilot whales³⁶⁵ have been observed in driftnet and purse seine gear. However, neither reports of incidental catch nor reports on many of the other small cetaceans caught in other

359. *Id.*

360. Articles 311(2) and (5) of the 1982 Convention provide:

2. This Convention shall not alter the rights and obligations of States Parties which arise from other agreements compatible with this Convention and which do not affect the enjoyment by other States Parties of their rights or the performance of their obligations under this Convention.

5. This article does not affect international agreements expressly permitted or preserved by other articles of this Convention.

1982 Convention, *supra* note 318, art. 311(2)(5), at 1327.

361. Of course, a major problem with this interpretation is applying the new, expanded scope of the ICRW after signature to the Law of the Sea Treaty. The ability to opt out of the ICRW would make Article 300 ineffective.

362. See 1982 Convention, *supra* note 318, art. 278 (international organizations "shall take all appropriate measures to ensure, either directly or in close co-operation among themselves, the effective discharge of their functions and responsibilities" in securing development and transfer of marine technology.).

363. Minke whales (*Balaenoptera acutorostrata*) have been observed captured in California swordfish driftnets. See, Northridge, *supra* note 24, at 30; Cal. Fish & Game Code § 8664.8 (Doering's 1990).

364. Killer whales (*Orcinus orca*) have been observed in driftnets in the Mediterranean, the Northwest and Southeast Pacific Ocean regions. Northridge, *supra* note 24 at 17, 30, & 43.

365. Pilot whales (*Globicephala spp.*) have been observed in driftnets in the Mediterranean and Northwest Pacific Ocean regions. *Id.* at 18, 30. They are also taken in small numbers in the eastern Tropical Pacific purse seine fishery. *Id.* at 39.

fisheries are required. Efforts to extend authority of the IWC to implement regulations on the killing of small cetaceans also attempt to assess the bycatch problem.³⁶⁶ A special subcommittee, which formed to study the possibility of extending the Convention's species coverage to include small cetaceans, was unsuccessful in changing the accepted scope of the Conventions.³⁶⁷

Second, unlike the Eastern Tropical tuna embargo, the Council may recommend economic sanctions, thus avoiding the imprimatur of trade barriers raised by unilateral state action.³⁶⁸ The ICRW allows the IWC to "make recommendations to any or all contracting Governments on matters which relate to whales or whaling."³⁶⁹ This vehicle has been used to effect measures against "pirate" whaling outside the Convention by recommending embargo of whale meat and products of nonmember countries and operations,³⁷⁰ and the prohibition on the transfer of vessels, equipment, information, or expertise on whaling to nonmembers.³⁷¹ While these recommendations are not legally binding on the parties, they reportedly have had significant practical effect in eliminating pirate whaling.³⁷²

366. See *Killings Tallied of Dolphins, Small Whales; Conservation Groups Appeals for Action*, *supra* note 24, at A13 (Friends of the Earth requesting the IWC to pass regulations regarding small cetaceans).

367. The Sub-Committee thought that an international body (which could be the IWC or a special body to be established) was needed to manage all stocks of cetaceans not on the IWC schedule. The issue was referred to a then impending conference as one which should be considered by it (to be held outside the IWC as the ICRW does not provide for revision) to revise the convention. In all, three conferences were held to consider revision of the ICRW, but all failed to reach agreement.

Birnie, *supra* note 358, at 919 (footnote omitted).

368. Each Contracting Government shall take appropriate measures to ensure the application of the provisions of this Convention and the punishment of infractions against the said provisions in operations carried out by persons or by vessels under its jurisdiction."

ICRW, *supra* note 355, art. IX(1).

369. *Id.* art. VI.

370. INT'L WHALING COMM'N, 30TH ANN. REP. 38, App. 9 (1980), *cited in* LYSTER, *supra* note 251, at 29. The European Economic Community also prohibits the import of whale products that are listed in the Annex to the Convention. Member states must enforce Community policies against vessels which violate the regulation.

371. *Id.* South African domestic legislation prohibits persons from supplying stores or offering services or expertise to foreign whalers. See LYSTER, *supra* note 251, at 33.

372. LYSTER, *supra* note 251, at 30; Birnie, *supra* note 358, at 926 & n.80. The United States, on a number of occasions, has threatened certification of Japan for "diminish[ing] the effectiveness of an international fishery program," and therefore requiring a ban on importation of fish products from Japan or reduction in the allocation of fish stocks within the coastal fishery zone. See Fisherman's Protective Act of 1967, 22

2. The Antarctic Treaty Regime as a Model for International Cooperation in Conservation

Perhaps the best model for development of regulatory norms over high seas fishing is the Antarctic Treaty system. Due to the suspension of territorial claims over the area, it has functioned as a regulated communal resource regime.

Initial claims to exercise of sovereignty over portions of the region date back to the period between 1908 and 1942.³⁷³ Two major maritime powers, the United States and the U.S.S.R. did not and do not recognize territorial claims to the area. This created a unique circumstance: sovereignty was at issue in the Antarctic, but the area was considered communal by two major world powers. Hence, national and territorial interests were high, yet some of these very same interests required community management. These circumstances allowed the development of management measures in an area much like the high seas. These jurisdictional oddities are generally thought to be the impetus behind the negotiations which began in 1958 and culminated in the Antarctic Treaty in 1959.³⁷⁴ Ten years later, measures on

U.S.C. § 1978 (banning imports of fish products); Fishery Conservation and Management Act of 1976, 16 U.S.C. § 1821(e)(2)(B) (reducing allocation of fish stocks).

In 1983 the United States withheld 171,000 tons from Japan's fish allocations within the U.S. coastal zone in response to Japan's objections to the 1982 moratorium. Lyster, *supra* note 251, at 35. Agreement on a limited extension of the moratorium deadline until 1988 resolved the issue. Birnie, *supra* note 358, at 926 & n.81.

The same pattern of threats and tradeoffs was repeated in the driftnet fishery issue. The United States sought to monitor Japanese fishing vessels in the North Pacific and support South Pacific forum nations in their efforts to eliminate large-scale driftnet fishing from the South Pacific. After an eleventh hour threat to certify Japan, agreement was reached through a compromise, whereby Japanese vessels would not fish the South Pacific region and Japan would accept monitoring in the North Pacific. See Miles & Fluharty, *supra* note 13, at 21. Professors Miles and Fluharty argue that national pressures by the Japanese longline tuna fishery also contributed to Japan's willingness to withdraw large-scale driftnets from the South Pacific.

373. The United Kingdom, New Zealand, France, Norway, Australia, Chile, and Argentina have made formal declarations of sovereignty over the area. Rolph Trolle-Anderson, *The Antarctic Scene: Legal and Political Facts*, in THE ANTARCTIC TREATY REGIME 57 (Gilland D. Triggs ed., 1987).

374. Antarctic Treaty, opened for signature Dec. 1, 1959, 402 U.N.T.S. 72. Obviously, there were multiple reasons for conclusion of the treaty. Between 1957 and 1958, 12 countries operated research stations on the continent. "The reluctance of some participants to dismantle their bases and the end of the [International Geophysical Year] seems to have led to the negotiation of a *modus vivendi* which sought to reconcile . . . the claimant States on the one hand, and the non-claimant researching States on the other." A. PARSONS, ANTARCTICA: THE NEXT DECADE 18 (1987).

Territorial claims are evidenced in the Antarctic Treaty by the care taken to deal with territorial issues. Articles IV and VII attempt to deal with this issue, while conservation of

conservation of flora and fauna were developed without much effect.³⁷⁵

It was not until 1978 that more formal mechanisms for regulation of Antarctic seals came into effect. The Convention for the Conservation of Antarctic Seals prevented the commercial exploitation of six species of seals.³⁷⁶ Much like other international management mechanisms, the Convention provided for the analysis and exchange of information on the effects of the harvest of a single species "on the total stock of such species" but went further to allow analysis of the effects of the harvest "on the ecological system of any particular locality."³⁷⁷

The Convention also outlined a "traffic light" system of regulation. Each year it is assumed that a "green light" is given for pelagic sealing within the areas and times set forth in Annex I to the Convention. Article VI(3) allows any contracting party to convene a meeting if the Scientific Committee on Antarctic Research (SCAR) reports harmful effects of the harvest to any particular stock or ecological system ("yellow light"). If the Total Allowable Catch (TAC) is reached, Article V(5) requires the contracting parties to prevent their nationals from further sealing ("red light").³⁷⁸

In 1980, a concern about the entire region inspired the

the land species is dealt with only briefly in Article IX(1)(f) in which the "[r]epresentatives of the Contracting Parties . . . shall meet . . . for the purpose of exchanging information, . . . and formulating and considering, and recommending to their Governments measures regarding . . . preservation and conservation of living resources in Antarctica". *Id.* at 78. Further Article VI provides:

[N]othing in the present Treaty shall prejudice or in any way affect the rights, or the exercise of the rights, of any State under international law with regard to the high seas within [the area south of 60 degrees].

Id. at 76.

375. Agreed Measures for the Conservation of Antarctic Fauna and Flora, June 2-13, 1964, 17 U.S.T. 996, T.I.A.S. No. 6058.

376. Convention for the Conservation of Antarctic Seals, done June 1, 1972, art. 2(1), 29 U.S.T. 441, 444. The six species protected were the southern elephant seal (*Mirounga leonina*), leopard seal (*Hydrurga leptonyx*), weddell seal (*Leptonychotes weddelli*), crabeater seal (*Lobodon carcinophagus*), Ross seal (*Ommatophoca rossi*), and southern fur seals (*Arctocephalus* sp.). *Id.* art. 1(2), at 443.

377. *Id.* art. 5(5), at 445. The Preamble to the Convention also recognizes that an aim of the Convention is the maintenance of "a satisfactory balance within the ecological system." *Id.*, pmbl. ¶7, at 443.

378. J.A. Heap, *Has CCAMLR Worked? Management Policies and Ecological Needs*, 10 INT'L CHALLENGES 13, 16 (1990).

Further, Annex I invited scientific opinion on the methods of sealing "with a view to ensuring that the killing or capturing of seals is quick, painless, and efficient." Convention for the Conservation of Antarctic Seals, *supra* note 376, at Annex I, ¶7(a).

development of the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR).³⁷⁹ Two distinct features of this treaty, as they relate to the bycatch of marine resources are: (1) The treaty takes an ecological approach to the management of living marine resources within the area, and (2) it attempts to regulate the use of the area globally rather than regulating just those party to the Convention. With regard to the first feature the Convention seeks to set levels of harvest for all species, which ensures stable recruitment.³⁸⁰ If one fishery was to take significant bycatch of a species, Article II(3) would limit the "harvesting and associated activities" of "dependent and related populations."³⁸¹ Some latitude is given in fluctuations of stocks; management of stocks should seek to reduce the risk of change to the entire ecosystem in a manner irreversible over a period of two or three decades.³⁸² This approach sharply contrasts the earlier 1958 Conventions that

379. Convention on the Conservation of Antarctic Marine Living Resources, May 20, 1980, 33 U.S.T. 3476 [hereinafter CCAMLR].

380. *Id.*, art. II (3)(a), at 84.

Any harvesting and associated activities in the area . . . shall be conducted . . . with the following principles of conservation:

(a) prevention of decrease in the size of any harvested population to levels below those which ensure its stable recruitment. For this purpose its size should not be allowed to fall below a level close to that which ensures the greatest net annual increment

Id.

At the time of this writing a full text on a recent protocol to the Antarctic treaty was not yet available. However, advance reports of the Protocol indicate that Article 2 requires "the parties commit themselves to the comprehensive protection of the Antarctic environment and dependent and associated ecosystems and hereby designate Antarctic as a natural reserve devoted to peace and science." *Protocol to Protect Antarctica Signed by 31 Nations at Meeting*, 14 Int'l Env't Rep. (BNA) 540 (Oct. 10, 1991) (emphasis added). Whether this will restrict fishing activities in the area remains to be seen. Nevertheless the emphasis on associated and dependent species appears to remain significant.

Reports indicate that the Protocol also requires environmental impact assessments for any activity with the potential for other than minor or transitory environmental impacts. *Id.* Without a verbatim record of the text of the Protocol, the author is unable to assess if this provision supports a trend shifting the burden from proving significant environmental impact to proving lack of such impact.

381. Article II (3)(b) provides for "maintenance of the ecological relationships between harvested, dependent and related populations of Antarctic marine living resources and the restoration of depleted populations to the levels defined . . ." CCAMLR, *supra* note 379, at 84.

382. *Id.* art. II, § (3)(c). Any harvester should attempt the:

prevention of changes or minimization of the risk of changes in the marine ecosystem which are not potentially reversible over two or three decades, taking into account the state of available knowledge of the direct and indirect impact of harvesting, the effect of the introduction of alien species, the effects of associated activities on the marine ecosystem and of the effects of environmental changes,

sought levels of harvest solely in terms of exploitable maxima.³⁸³ Paragraph (a), for example, limits harvest of fauna to levels below MSY (or other measures of stable recruitment) to insure stable recruitment. The Convention does not resolve, however, the difficult problem of the precise measure of overharvest of some species, be they targeted, dependent, or bycatch.³⁸⁴

The second interesting feature of the Convention is that it seeks to control the activities of nonparties through diplomatic communications. Its application to high seas areas is obvious. Article X(2) requires the Commission to "draw the attention of any State which is not a Party to this Convention to any activity undertaken by its nationals or vessels which, in the opinion of the Commission, affects the implementation of the objectives of th[e] Convention." Thus, the convention uses international approbation to provide enforcement of global objectives to regulate the Convention area.³⁸⁵ In this way, the Convention embodies a formal and relatively impartial method of conveying prescriptive communications (the second level of international norm formation) without the need for complete consensus by all the parties.

B. Recognizing Modification of Deep Ocean Ecosystems

1. Competing Philosophies

A fundamental problem with regulating bycatch arises from differing opinions as to what a multispecies management plan should look like. Because the manager must make decisions on the overall size, composition, and stability of the fishery, the

with the aim of making possible the sustained conservation of Antarctic marine living resources.

Id.

383. See *supra* notes 83-99 and accompanying text.

384. Obviously, significant ambiguities arise out of the conflicting priorities contained in paragraphs (b) and (c). First among these is the quantification of the greatest net annual recruitment. Assuming that this level can be set, consistent with the purpose of the Convention, subsection (b) provides a model for management which conflicts with subsection (c). The former contemplates a static model of species relationships, while the latter admits of variability in the ecosystem over "two or three decades." It is unclear if a return to the same model of species relationships is required or merely provides an order of magnitude for change. The model that forms a basis for subsection (c) appears closest to current theory. However, other articles of the Convention appear to endorse a model which seeks to maintain a present species ratios. See CCAMLR, *supra* note 379, art. IX(g), at 3483.

385. One author has noted that because the "opinion of the Commission" can only be achieved by consensus voting, one party member could conceivably prohibit the use of this device to censure offending nationals. Lyster, *supra* note 251, at 171.

philosophical approach to fisheries management becomes more pronounced. One Fishery biologist has described the problem as a sliding scale from ranging from maximum use of all species without regard to individual species changes, to full protection of the intrinsic processes of the marine community, allowing no exploitation at all.³⁸⁶

A second dimension to this problem is the position of many undeveloped states, which reject management plans or technologies that may require greater dependence on Western values and technologies.³⁸⁷ "[T]he western concept of conservation is alien and irrelevant to . . . subsistence [cultures]" who struggle to maintain their survival.³⁸⁸

A strong current in the bycatch issue is the concern over depletion of species. The initial concern over the direct exploitation of marine mammals flowed from the relatively slow reproductive rates. The previous discussion of fur seals and Antarctic whales demonstrated how this concern over the diminishing biodiversity of a specific region may provide impetus for claims concerning the need for conservation. Present arguments over mammal populations are taking a distinctly moral turn. Despite lack of evidence of diminishing populations of porpoises in the Eastern Tropical Pacific or sperm whales in the Antarctic, pressures to eliminate completely bycatch of these species remain quite viable.³⁸⁹ Aesthetic arguments for preservation of species not threatened with extinction also exist. These aesthetic values may have real economic value to the extent that high seas stocks of mammals and sea turtles support and populate animal populations subject to tourist activity.³⁹⁰

2. Management Realities

Management of multispecies fisheries is complicated not

386. Ellen K. Pikitch, *Objectives for Biologically and Technically Interrelated Fisheries*, in *FISHERY SCIENCE AND MANAGEMENT* 107, 114-16 (Warren S. Wooster ed., 1988).

387. See *Some Papua New Guinean Views on Conservation*, in *THE MELANESIAN ENVIRONMENT* 237, 249 (John H. Winslow ed., 1977).

388. H.A. Haantjens, *A Conservation Opportunity in the Humid Tropics*, in *THE MELANESIAN ENVIRONMENT* 263, 264 (John H. Winslow ed., 1977).

389. The IWC moratoria remain in effect and recently legislation introduced in Congress would seek a bycatch rate of zero for dolphin in the Eastern Tropical Pacific. A Bill to Amend the Marine Mammal Protection Act of 1972 to Restrict Purse Seine Fishing for Tuna, and for Other Purposes, H.R. 261, 102d Cong., 1st Sess. (1991).

390. For example, whale watching, is fast becoming a popular and a lucrative enterprise.

only by the high degree of scientific uncertainty about the species themselves, but also by the inability to predict modifications to large marine ecosystems through physical changes in weather, temperature, and currents. These changes effect the fish stocks and thus, may account for wide fluctuations in fish stocks. Such uncertainties make prediction very difficult and the need for improved management more crucial. As a result, many countries ban only the most obviously ecologically harmful fishing practices such as explosives and poisons.³⁹¹

Moreover, bycatch is a more significant problem for distant water fishing vessels that lack the capacity to store lesser valued bycatch. Using the shrimp fishery as an example, by far the largest catch comes from developed countries in Europe and North America.³⁹² These countries have the economic means to develop technologies that can eliminate or greatly reduce bycatch waste.³⁹³

At least two recent developments may indicate an increasing recognition of the need for international regulation of high seas bycatch. The first, and perhaps most obvious one, is the increasing popular support for global resource management. The Passage of the U.N. Resolution on large-scale driftnet fishing must attribute part of its successes to public concern for the bycatch within the fishery.

Economic motivations are mounting as well. United States' tuna manufacturers and legislation approving "dolphin free" tuna labeling³⁹⁴ is supported by consumer spending. Further, current economic theories underscore the ability of managed fisheries to secure greater profits for their participants.³⁹⁵ Signifi-

391. See U.N. FAO, REGIONAL COMPENDIUM OF FISHERIES LEGISLATION-WEST AFRICA (CECAF REGION) 5-8 (FAO Legis. Series No. 27, 1983) (all countries in the region have legislation prohibiting environmentally harmful fishing practices); U.N. FAO I REGIONAL COMPENDIUM OF FISHERIES LEGISLATION (WESTERN PACIFIC REGION) 32 (FAO Legis. Series No. 35, 1984) (explosives, poisons and other noxious substances prohibited in most countries); U.N. FAO, I REGIONAL COMPENDIUM OF FISHERIES LEGISLATION (INDIAN OCEAN REGION) 8-9 (FAO Legis. Study No. 42, 1986) (22 countries prohibit explosives, poisons, and other noxious substances, and 15 countries regulate mesh sizes).

392. SAILA, *supra* note 35, at 5.

393. The exceptions to this theory are India and Indonesia whose shrimp bycatch are estimated at the high end of the single country bycatch rate for shrimp production. *Id.* An assessment of the need for technology transfers to provide support for their fishing activities is beyond the scope of this paper.

394. See Magnuson Fishery Conservation and Management Act Amendments, Pub. L. No. 627, § 901, 104 Stat. 4436, 4465-67 (1990) (to be codified at 16 U.S.C. § 1835).

395. See, e.g., H. Scott Gordon, *The Economic Theory of The Common Property*

cant savings can be achieved by lowering the overall level of fishing effort while maintaining catch limits. Domestic regulation, to the extent that it limits fishers in their high seas fishing activities, can marginally press states to force others to adopt similar mechanisms. This phenomenon may account for U.S. pressure to reduce bycatch in the Eastern Central Pacific and the Gulf of Mexico. Regulations requiring American fishers to reduce the bycatch of dolphins and turtles puts them at a competitive disadvantage. As mentioned previously, observers suspect that the U.S. embargoes seek to compensate for this disadvantage.³⁹⁶

Easing relations between the United States and the former U.S.S.R. may facilitate increased regulation of high seas fisheries.³⁹⁷ Much of the concern over regulation of high seas areas during the negotiations of the 1958 and 1982 Conventions stemmed from the military interests associated with unfettered navigation. This concern may be easing with the Cold War thaw. Relaxed international relations may diminish the reluctance to accept regulation of the high seas.³⁹⁸

C. *Development of Manageable Standards*

Problems created by recruitment overfishing,³⁹⁹ pertain to instability in the stock size. This phenomenon may actually lead to economic pressures to reduce bycatch. By eliminating the adverse effects on a given stock, the fishery can support a fleet targeted on the stock, or allow high bycatch of the stock from other fisheries. Where the fish stock is of little or no value, these economic pressures may not be present. High valued stocks have a relatively high unit value, however, creating direct economic incentives to avoid bycatch of the stock or a species upon which it depends.

Resource: *The Fishery*, 80 J. POL. ECON. 1031 (1954); L. ANDERSON, *THE ECONOMICS OF FISHERIES MANAGEMENT* 46-55 (1986).

396. See McDorman, *supra* note 214 at 505.

397. In a 1986 speech, former President Gorbachev "announced that the new Soviet objectives in the Pacific called for reduction of tensions and armaments between the superpowers and increased cooperation with the U.S., Canada, China, all of Southeast Asia, and Oceania." Miles & Fluharty, *supra* note 13, at 7.

398. Evidence of this development was seen prior to the dissolution of the Soviet Union in independent United States and Soviet proposals to enclose the Bering Sea in extension of Article 123 of the Law of the Sea Treaty. Earlier proposals to extend authority to coastal states over semi-enclosed seas described in Article 123 were rejected by the U.S. negotiators during the 1982 Convention conferences. See *id.* at 15.

399. See discussion *infra* Part II.B.

1. Self-Regulation of High Seas Bycatch

There are several self-regulating mechanisms in the industry that may either retard or prevent increased regulation of high seas fisheries. First, declining productivity in a fishery causes the fleet to turn to other types of catch.⁴⁰⁰ It is the continual growth of the industry, tied to the biological carrying capacity of the oceans that drives the need to regulate bycatch. To the extent that this observation is not accurate, other less persuasive influences on the international system are not likely to provide sufficient impetus to require modification of the existing *laissez faire* system.

Additionally, active measures may be taken by the fishing community to prohibit bycatch. For example, fishing cooperatives in East Java organized to ban trawlers and purse seiners in the area.⁴⁰¹ Local or national organizations may ban vessels carrying particularly "dirty" gear from landing their catch.⁴⁰² Even without economic incentives, fishers may undertake the added expense to fish with more expensive gear out of personal concern or recognition of an emerging rule.⁴⁰³

2. Proposed Developments for the Reduction of High Seas Bycatch

a. Goals for a Bycatch Régime

Development of clearly defined goals are essential to the rational management of an environmental régime.⁴⁰⁴ As an

400. J. McGoodwin, *Some Examples of Self-Regulatory Mechanisms in Unmanaged Fisheries*, in U.N. FAO, *EXPERT CONSULTATION ON THE REGULATION OF FISHING EFFORT (FISHING MORTALITY)*, at 41, 46 U.N. Doc. No. FIPP/FIRM/R289 (FAO Fisheries Rep. 289, 1983).

401. *Id.* at 150.

402. *Id.* For example, New Zealand's driftnet regulation bans the landing of catch caught in the nets. This provision is supported by the Convention for the Prohibition of Fishing with Long Drift Nets in the South Pacific, Nov. 23, 1989, art. 3, *reprinted in* 14 LAW SEA BULL. 31, 32-33 (1989).

403. This is what contributes, in part, to the development of new trawl gear in the Northwest. Many fishermen are buying nets out of a recognition that "this is the way the industry is going," as well as a sense of environmental responsibility as an individual. Telephone Interview with Bill West, *supra* note 11.

404. Clarity about objectives is important for guiding the performance of [data and information gathering] by identifying the critical needs for data and information and by informing officials adequately to select research priorities . . .

[Bringing policies to the attention of those charged with their consideration and adoption] is especially important in connection with shared stocks where other nations or entities are necessarily involved in management If management objectives are vague and ambiguous or erratically changeable, it may be difficult to elicit accommodation and coordination by other decision makers.

emerging norm, however, these policies need not function as fully integrated concepts. In the exploratory phase of development, the policies must be of general character so as not to overshadow the development of a scientific and technological basis for its formation. A certain laxity in the application of international norms is necessary to permit development and individual assessment of the problem as it arises.

The scope of the norm also affects the specificity with which it can hope to guide international behavior. If global application of the principle is sought, a very general principle must develop.

b. Management Mechanisms

As an emerging régime, it is far too early to ascertain what mechanisms will be used to prevent excess bycatch on the high seas. However, use of gear restrictions is a traditional method of regulating fisheries. Various high seas fishery agreements in the Atlantic have employed this device.⁴⁰⁵ Its advantages are that it can regulate the average age and size limits on the target fish, and can be selective about body size and type with respect to untargeted species.⁴⁰⁶ Technological innovations of bycatch control have the advantages of being easier to assess qualitatively, assuming consistent practice within a fishery. Such innovations also have obvious advantages to the users that may stimulate compliance. The difficulty with gear regulations is that they disproportionately burden some fishers, such as trawl and large net fishers, seriously hampering the willingness of these fishers to adopt this approach. The regulation of nets may also be difficult given the various designs used internationally.⁴⁰⁷ Absent an observer program or voluntary assent by the major fishing fleets, enforcement and monitoring of a gear regulation

Burke, *supra* note 251, at 14.

405. Convention for the Regulation of the Meshes of Fishing Nets and the Size Limits of Fish, arts. 5-9, opened for signature Apr. 5, 1956, 231 U.N.T.S. 200, 202-04. EEC efforts to regulate bycatch have been particularly hampered by the differences in square and diamond shaped nets. See *Greenpeace Calls New EC Driftnet Curbs Too Feeble*, Reuters Wire Serv., Oct. 29, 1991, available in LEXIS, Nexis Library, Currnt File.

406. R. Jones, *Mesh Size Regulation and Its Role in Fisheries Management*, in Report of the Expert Consultation on the Regulation of Fishing Effort (Fishing Mortality) 87 FIPP/FIRM/R289 (1983); Telephone Interview with Bill West, *supra* note 11.

407. Jones, *supra* note 406, at 87. Some nets are sewn in such a way that the mesh is more square, others are cut and retied after purchase, while still others are made of materials or supplemented with ribs and other devices to maintain the full shape of the mesh. Telephone Interview with Bill West, *supra* note 11.

also may be difficult.⁴⁰⁸

Creating economic incentives to use bycatch can have a significant impact on fishing behavior.⁴⁰⁹ EEC fishers are now discussing how the bycatch can be profitably brought to market given Norway's requirement that vessels have the adequate space to retain bycatch caught within her waters.⁴¹⁰ Norway currently requires vessels fishing within its fishing zone to retain all bycatch,⁴¹¹ in an effort to ensure that the catch was included in quotas and bycatch ratios set for the fishery.⁴¹² As one author has observed:

Under certain circumstances where a fishery is aimed at a high value species and where a significant over-investment in vessels and fleet capacity prevails . . . regulations requiring that a given tonnage or proportion of the hold space be devoted to bringing back edible by-catch species will have the effect either of discouraging excessive further investment in the fishery, increasing the proportion of fishing time devoted to culling the catch, or reducing time spent fishing specifically for target catch.⁴¹³

Developments in coastal fisheries management have shown that limitations on fishing effort can dramatically increase the total harvest. Various mechanisms have been explored, including the traditional catch quota system used by many nations within their EEZ's. Limiting the number of fishers within an area by granting transferrable quotas has been suggested as a way to reduce pressures toward inefficient or wasteful fishing practices.⁴¹⁴ With transferrable quotas, ships will be able to fish at a slower pace and the overall quota can create an incentive to

408. The difficulty in establishing this kind of regulation is evidenced by the fact that it has taken over 17 years to implement an ad hoc observer scheme thorough the IWC. Birnie, *supra* note 358, at 927.

409. Pikitch reports a 9% margin of bycatch discarded due to trip limits in the U.S. (coastal) groundfishery. Pikitch, *supra* note 386, at 124-25. With increased transportation and time costs associated with the high seas fishery, perhaps these kinds of gains could be realized in regulation of high seas fisheries.

410. See *Fisheries: No Headway on What to Do about the Norwegian Discard Ban*, Eur. Info. Serv., No. 1602, July 11, 1990, available in LEXIS, Nexis Library, Currnt File.

411. Telephone Interview with Fisheries Attaché Raasoc, Norwegian Embassy to the United States, (May 30, 1991).

412. *Id.*

413. J.F. Caddy, *Indirect Approaches to Fishery Effort*, in U.N. FAO, EXPERT CONSULTATION ON THE REGULATION OF FISHING EFFORT (FISHING MORTALITY), at 63, 71, U.N. Doc. No. FIPP/FIRM/R289 Supp. 2 (FAO Fisheries Rep. 289, Supp. 2, 1983).

414. See, e.g., Ralph E. Townsend, *Entry Restrictions in the Fishery: A Survey of the Evidence*, 66 LAND ECON. 359, 373 (1990).

avoid bycatch in the fishery.⁴¹⁵ However, the difficulty in setting quotas for multiple species makes this approach hard to apply to the high seas.

One suggested solution is the creation of a World Fishery Organization (WFO), which would be primarily responsible for the conservation. It could resolve many of the current common property problems associated with high seas fisheries.⁴¹⁶ Its functions would include the full utilization of underexploited stocks and regulation of those overexploited to achieve optimum economic efficiency. Inspection, gear regulation, and dispute settlement would be the responsibility of the organization as well.⁴¹⁷ Suggestions for this kind of organization were rejected when proposed by China in the negotiations on the Law of the Sea Treaty.⁴¹⁸ Without the formation of a norm requiring comprehensive management of bycatch and other high seas issues, it seems unlikely that this is the proper vehicle for addressing the problem.⁴¹⁹

VII. CONCLUSION

The examination of three current fisheries, wherein the issue of bycatch has become most acute, reveals that a full panoply of international controls have been used to regulate the practice. There is a long history of attempts to address the problem with respect to specific stocks in specific areas. Most of these agreements have met with limited success. The three fisheries examined in more detail differ from past practice in that the fishery is new to the area (as in the case of driftnets) and/or the species involved are considered threatened or endangered (as in the case of dolphins and turtles). The perceived need to protect these species has led to unilateral action on the part of the United States and multilateral efforts on the part of the South

415. For an excellent discussion of the benefits achieved through a transferable quota system, see ANDERSON, *supra* note 395, at 215-18.

416. KOERS, *supra* note 305, at 258-62, 307-17.

417. *Id.* at 312.

418. U.N. Doc. A/AC.138/SCII/L.45.

419. One author suggests a lack of resources is not the only reason for rejecting the proposal at the U.N. conference: "Il y avait évidemment d'autres intérêts en jeu et ce n'est pas seulement l'absence de ressources biologiques importantes qui a fait écarter cette solution." Jean Carroz, *Les Problèmes de la Pêche à la Conférence sur le Droit de la Mer et Dans la Pratique des États*, 84 REVUE GÉNÉRALE DE DROIT INTERNATIONAL PUBLIC 705, 725 (1980) ("There are evidently other interests in play and its not only the absence of important biological resources that has caused the rejection of this solution.").

Pacific states and the EEC. The use of economic embargos and denial of access to port facilities has precipitated accelerated inquiry into the basis for the concern.

Research on turtles of the Gulf of Mexico has already established their endangered or threatened status. The process of norm building here is one of characterization of the situation; scientific standards are being formed. The Mexican response to the United States concern recognizes the need to eliminate the capture of these turtles and has posed countermeasures to ensure their continued existence by protecting nesting sites. The failure of these measures to gain acceptance by the GATT panel, coupled with renewed efforts to incorporate explicit environmental controls into the GATT indicate change is occurring.⁴²⁰ Nonetheless, a characterization of the fishing practice is disputed, and no prohibition has emerged.

With regard to the driftnet fishery, the proposed worldwide ban on driftnet fishing indicates a full-formed norm with respect to the characterization of that fishing practice as unnecessarily wasteful. While statements by the driftnet nations indicate a recognition of world opinion on the fishing practice, it is still too early to give that recognition the imprimatur of an international norm.

The situation in the Eastern Tropical Pacific Tuna fishery lies somewhere between these two stages of development. While more information is known on the Eastern Tropical Pacific dolphin species, estimates of critical population density are still missing.⁴²¹ These factual ambiguities muffle attempts at prescriptive communication of the need to prevent the bycatch of these species.

While the international efforts to regulate bycatch have not consistently succeeded, the issue is clearly one of increasing import. The development of biological models and legal instruments calling for ecosystem management indicate a trend toward increasing authority to regulate bycatch. The precise scope of the norm will, of course, be dependent upon the scope of its application. If it continues to be used as a vehicle for global regulation of bycatch, its character must be broad and adaptive. If the principle fully evolves only in the context of

420. See *supra* note 225 and accompanying text.

421. Dr. D. DeMaster, NMFS, Statement before the 31st Meeting of the Marine Mammal Commission, Bellevue, Wash. (Mar. 11, 1991).

limited circumstances, for example only in the preservation of endangered species, it is likely to have a more definite character and stronger appeal.

Assuming, *arguendo*, the current trend toward intolerance of particularly wasteful fishing technologies will continue, there are models for comparison. The IWC, with limited success, has managed to create an international forum on species considered fragile and subject to exploitation. The multiple species models developed in the Antarctic Treaty System provide further guidance. The "traffic light" system enables continued regulation and exploration of the relationship between harvested and associated species thus combining all three phases of norm formation into a single process under the Treaty.

As an emerging norm, further action to regulate high seas fisheries will require significant and new steps. The process, however, has already begun.

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