

Comment

DOLPHIN CONSERVATION IN THE TUNA INDUSTRY: THE UNITED STATES' ROLE IN AN INTERNATIONAL PROBLEM

Thousands of dolphin die annually in the international tuna fishery. This Comment explores the history of that problem and the domestic and international attempts to alleviate it. Foreign legislation, positions of international organizations, and documents of the United Nations Law of the Sea Conference are reviewed as potential sources of an international solution. The Comment emphasizes the need for active United States involvement in international programs, comprehensive data on the dolphin populations, and immediate action to avoid excessive exploitation. It concludes with a suggestion that increased public concern for dolphin may be utilized effectively to support conservation initiatives.

The hunting of Dolphins is immoral and that man can no more draw nigh the gods as a welcome sacrificer nor touch their altars with clean hands but pollutes those who share the same roof with him, whoso willingly devises destruction for Dolphins. For equally with human slaughter the gods abhor the deathly doom of the monarchs of the deep¹

INTRODUCTION

Dolphin² have been exploited throughout recorded history in

1. OPPIAN, *Halieutica*, in OPPIAN, COLLUTHUS, TRYPHIODORUS 201, 493 (1928).

2. The terms "dolphin" and "porpoise" are often confused and used interchangeably. Reiger, *Dolphin Sacred, Porpoise Profane*, AUDUBON, Jan., 1975, at 3. Some authors consider the porpoise family, *Phocoenidae*, to be a subfamily of the dolphin family, *Delphinidae*. Scarff, *The International Management of Whales, Dolphins, and Porpoises: An Interdisciplinary Assessment* (pt. 2), 6 ECOLOGY L.Q. 571, 611 n.749 (1977). In common usage the term "porpoise" is often used to refer to dolphin as well as to the true porpoise of the *Phocoenidae* family. This Com-

virtually every sea on earth.³ In some areas dolphin are fished intentionally as a source of food, animal food, oil, fertilizer, and leather.⁴ They are also captured alive for display, research, and military uses.⁵ Fishermen catch them incidentally and inadvertently in other operations throughout the world.⁶ Thousands are now taken incidentally after intentional capture in conjunction with tuna purse-seining operations.⁷

In the late 1950's, fishermen observed that yellowfin tuna school with certain species of dolphin in the Eastern Tropical Pacific (ETP).⁸ In approximately 1960 commercial fishermen began setting their purse-seines around these schools. Although the fishermen attempted to free the dolphin, thousands became entangled in the nets and suffocated or drowned.⁹ Between 1960 and

ment will follow the taxonomical distinction that porpoise are beakless mammals, generally small in size with a triangular dorsal fin. Reiger, *supra*. Virtually all the literature concerning the Eastern Tropical Pacific (ETP) tuna fishery refers to the "tuna-porpoise" problem while in reality the animals involved are dolphin. "Setting on porpoise" is a common phrase for the fishing procedure, but the reader should remember that dolphin are being discussed.

3. For a detailed historical account of dolphin exploitation by geographical region, see *Report of the Meeting on Smaller Cetaceans*, 32 J. FISHERIES RESEARCH BOARD CAN. 883, 946-52 (1975) (discusses the 1974 deliberations of the Subcommittee on Small Cetaceans, Scientific Committee, International Whaling Commission) [hereinafter cited as *Smaller Cetaceans*].

4. *Id.* at 955-56.

5. *Id.* at 956. The United States Navy has a dolphin program called Sea Search. The program entails housing bottlenose dolphin in floating pens to guard United States submarine bases in the Philippines. The Navy used dolphin in the recovery of a nuclear weapon accidentally dropped into shallow water off Puerto Rico. Six dolphin were used in Vietnam literally to blow up enemy frogmen by ramming them with hypodermic needles attached to high-pressure gas cylinders mounted on their rostrums. Chapple, *Day of the Dolphins—In Court*, NEW W., Mar. 27, 1978, at 33, 34.

6. *Smaller Cetaceans*, *supra* note 3, at 956. Such inadvertent takings occur in gillnet, trawl, purse-seine, set-net, and longline fisheries. Gillnets cause the gravest problem because they are composed of monofilament webbing that is probably acoustically invisible to cetaceans. Cetaceans are members of the order *Cetacea* and are completely aquatic mostly marine mammals of the subclass *Eutheria*; they include whales, dolphin, and porpoise. WEBSTER'S NEW INTERNATIONAL DICTIONARY OF THE ENGLISH LANGUAGE (unabr. 2d ed. 1957). See also note 2 *supra*. Research is needed to develop gillnet webbing that will be more easily avoided by cetaceans and yet will be efficient in catching fish. *Smaller Cetaceans*, *supra*.

7. *Smaller Cetaceans*, *supra* note 3, at 957. Fishermen using the purse-seine procedure deploy speedboats to herd groups of dolphin into large purse-seine nets. Both tuna traveling with dolphin and dolphin are trapped when the huge net is "pursed" beneath them, like a drawstring purse. *Committee for Humane Legis., Inc. v. Richardson*, 414 F. Supp. 297, 300 (D.D.C.), *aff'd and modified*, 540 F.2d 1141 (D.C. Cir. 1976).

8. Minasian, *Dolphins and/or Tuna: An Update on the Problems of Purse Seining for Yellowfin*, OCEANS, Nov., 1977, at 60, 61-62. Yellowfin tuna, canned as "light tuna," are the only tuna that associate to any degree with dolphin. Skipjack, Albacore, Bluefin, Bigeye, and Bonita tuna do not school with dolphin. *Id.*

9. *Committee for Humane Legis., Inc. v. Richardson*, 414 F. Supp. 297, 300 (D.D.C.), *aff'd and modified*, 540 F.2d 1141 (D.C. Cir. 1976). Many dolphin would

1972 a total of three to five million dolphin were lost.¹⁰ Although in 1971 the United States performed ninety-eight percent of the tuna fishery on dolphin, more States are constantly becoming involved in this highly efficient method of harvesting yellowfin.¹¹ The problem is also expanding geographically as dolphin are found to associate with yellowfin tuna in other parts of the world.¹² In 1976 there were already unconfirmed reports that European and African fishermen were killing dolphin in the Atlantic at rates estimated to be as high as a quarter of a million per year.¹³ This Comment discusses the actions taken within both

dive to the bottom of the net where their snouts and fins would become snagged in the webbing. Unable to surface, the air-breathing dolphin would suffocate. Others would drown as a result of physical injury, shock, or the refusal to abandon trapped dolphin. *Id.* Such entanglement occurs partially because the dolphin primarily involved in the ETP fishery are of the open-ocean *Stenella* species and are high-strung, active, and nervous. When frightened, their only response is forward flight. These dolphin cannot maneuver in tight quarters and must use their entire bodies to turn. Once its rostrum is caught in the net, backing up is physically difficult and psychologically impossible for the *Stenella* dolphin—it can continue only to attempt to swim forward. Pryor & Norris, *The Tuna/Porpoise Problem: Behavioral Aspects*, OCEANUS, Spring, 1978, at 31, 34-35.

10. Minasian, *supra* note 8, at 60. The estimated kill of the United States fleet for 1971 reached 312,400. Committee for Humane Legis., Inc. v. Richardson, 540 F.2d 1141, 1144 (D.C. Cir. 1976).

11. Annual Report of the Inter-American Tropical Tuna Commission for 1977, at 17 (1978) (on file with the *San Diego Law Review*). Eighty percent of the international fleet, in terms of seiner capacity, take part in the fishery for dolphin-associated tuna. National Marine Fisheries Service, National Oceanic and Atmospheric Administration, Dep't of Commerce, FEIS [Final Environmental Impact Statement], Promulgation of Regulations and Proposed Issuance of Permits to Commercial Fishermen Allowing the Taking of Marine Mammals in the Course of Yellowfin Tuna Purse Seining Operations from 1978 through 1980, at 25 (1977) [hereinafter cited as FEIS]. During 1977 vessels from Bermuda, Canada, Colombia, the Congo, Costa Rica, Ecuador, Japan, Mexico, Netherlands Antilles, New Zealand, Nicaragua, Panama, Peru, Senegal, Spain, the United States, and Venezuela were involved in the ETP tuna fishery. Annual Report of the Inter-American Tropical Tuna Association for 1977, *supra*. Current reports include France, the Netherlands, South Korea, and Taiwan in the dolphin-associated tuna fishery in the eastern Pacific. Interview with Witold L. Klawe, IATTC researcher (Jan. 30, 1979).

12. *Smaller Cetaceans*, *supra* note 3, at 947, 951. Areas of probable expansion include the Eastern Tropical Atlantic, the Caribbean, and the Indian Ocean. *Id.*

13. *Porpoise Slaughter*, AUDUBON, Sept., 1976, at 122. Fishermen occasionally catch Dusky, common, and Heaviside's dolphin accidentally at night in a purse-seine fishery off the west coast of Africa. This take amounts only to about 100 animals per year. No figures exist on the intentional yet incidental taking of dolphin by the tuna purse-seiners in that area. *Ad Hoc* Group II — Small Cetaceans and Sirenians, Advisory Committee on Marine Resources Research, Food and Agriculture Organization of the United Nations, Mammals in the Seas, U.N. Doc.

the United States and the international community to alleviate this formidable threat to the dolphin populations.

THE UNITED STATES' POSITION

The Marine Mammal Protection Act of 1972

In 1972 the United States Congress passed the Marine Mammal Protection Act (MMPA).¹⁴ The protection of the dolphin, as members of the biological order *Cetacea*,¹⁵ falls within the scope of this Act¹⁶ and was a major impetus in its enactment.¹⁷ The primary objective of the legislation is to protect marine mammals as significant elements within their ecosystems.¹⁸ The realization of that goal necessitates the maintenance of the optimum sustainable population (OSP)¹⁹ of each species or population stock²⁰ of marine mammal.²¹ The Act also calls for immediate action to replenish any species or population stock that has fallen below its OSP.²²

In formulating the Act, Congress specified its recognition that marine mammals have esthetic and recreational values as well as value as an economic resource.²³ Such values are of international significance,²⁴ and the Act mandates initiation by the United States of international agreements for marine mammal research and conservation.²⁵ Research was a particularly essential element of the Act initially because current knowledge of marine mammal ecology and population dynamics was inadequate to direct any effective management program.²⁶

FAO/ACMRR/MM/SE/3, at 12-13 (1976) [hereinafter cited as *Mammals in the Seas*].

14. Pub. L. No. 92-522, 86 Stat. 1027 (codified at 16 U.S.C. §§ 1361-1407 (1976)).

15. See note 6 *supra*.

16. 16 U.S.C. § 1362(5) (1976).

17. Minasian, *supra* note 8, at 60.

18. 16 U.S.C. § 1361(2) (1976).

19. The MMPA originally defined the OSP of any population stock as "the number of animals which will result in the maximum productivity of the population . . . , keeping in mind the optimum carrying capacity of the habitat and the health of the ecosystem of which they form a constituent element." *Id.* § 1362(9). "The term 'optimum carrying capacity' means the ability of a given habitat to support the optimum sustainable population of a species or population stock in a healthy state without diminishing the ability of the habitat to continue that function." *Id.* § 1362(8). For the current definition of OSP, see note 88 *infra*.

20. A population stock is a group of marine mammals of the same species or of smaller taxa in a common geographical distribution that interbreed when mature. 16 U.S.C. § 1362(11) (1976).

21. *Id.* § 1361(2).

22. *Id.*

23. *Id.* § 1361(6).

24. *Id.*

25. *Id.* § 1378(a).

26. *Id.* § 1361(3). The National Marine Fisheries Service (NMFS) is the fed-

The MMPA imposes a complete moratorium²⁷ on the taking²⁸ and importation of marine mammals and marine mammal products.²⁹ However, exceptions to the moratorium allow takings for scientific research, for public display, or for other purposes consistent with the Act.³⁰ The Act also allowed the commercial fishing industry a two-year grace period beginning October 21, 1972, to reduce its incidental dolphin kill to an insignificant level.³¹

The MMPA applies to all takings within waters under the jurisdiction of the United States³² except as expressly provided by an international treaty, convention, or agreement to which the United States was a party before the effective date of the MMPA.³³ The prohibitions further apply to takings on the high seas by persons or vessels subject to the jurisdiction of the United States³⁴ but do not apply to takings within the territorial

eral agency in charge of research. The United States government also supports research related to the tuna-dolphin problem through the National Science Foundation—Research Applied to National Needs (NSF/RANN) and the Marine Mammal Commission (MMC). These organizations make funding for research contracts available, but funds are limited. The Porpoise Rescue Foundation (PRF) has been established with funding from United States tuna producers and processors. The objective of this organization is to foster, promote, and fund the development of dolphin-saving techniques, not only through modification of equipment and fishing strategies, but also through study of dolphin and tuna themselves. Funding is also a problem for the PRF. Inter-American Tropical Tuna Commission, *The Tuna-Porpoise Relationship: Research, Management, and Possible IATTC Role 43 (1977)* (background paper) [hereinafter cited as *IATTC Background Paper*].

27. Moratorium means complete cessation of the taking of marine mammals and a complete ban on their importation into the United States. 16 U.S.C. § 1362(7) (1976).

28. "The term 'take' means to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal." *Id.* § 1362(13).

29. *Id.* § 1371(a).

30. *Id.* § 1371(a)(1)-(3). Permits are required for all such takings. The Act authorizes no permits for the taking of depleted species except for scientific research. *Id.* § 1371(a)(3)(B).

31. *Id.* § 1371(a)(2).

32. (15) The term "waters under the jurisdiction of the United States" means—

(A) the territorial sea of the United States, and

(B) the waters included within a zone, contiguous to the territorial sea of the United States, of which the inner boundary is a line coterminous with the seaward boundary of each coastal State, and the outer boundary is a line drawn in such a manner that each point on it is 200 nautical miles from the baseline from which the territorial sea is measured.

Id. § 1362(15).

33. *Id.* § 1372(a)(2).

34. *Id.* § 1372(a)(1).

waters of another State.³⁵

The greatest incidence of taking of marine mammals involves the dolphin taken in the ETP yellowfin purse-seine fishery.³⁶ This problem has continued to be one of the most significant encountered by the National Marine Fisheries Service (NMFS) in the administration of the MMPA.³⁷

Regulating the Domestic Kill

In December, 1972, interim regulations were adopted to implement the MMPA.³⁸ These regulations allowed the taking without permits of marine mammals incidental to commercial fishing operations during the two-year grace period.³⁹ An incidental catch was originally broadly defined.⁴⁰ This definition was subsequently limited, however, to prevent a growing practice of tagging dolphin with radio transmitters, releasing them, and tracking them to find dolphin and tuna schools. Since April 2, 1973, no taking is incidental if the marine mammal is subsequently used to assist in fishing operations.⁴¹

Research soon revealed that equipment modifications and specialized fishing techniques could drastically reduce the dolphin mortality rate.⁴² Two important developments were the use of a backdown procedure and of a fine mesh safety panel in the net. Backdown procedures begin with a series of maneuvers used after the seine is tied down and pursed to hold the net open to the greatest degree possible. The vessel then backs up, causing the far end of the net to dip into the water to allow the dolphin to escape.⁴³ Fishermen discovered that the use of a panel of fine mesh netting minimizes dolphin entanglement during this proce-

35. *United States v. Mitchell*, 553 F.2d 996, 1003 (5th Cir. 1977). The *Mitchell* court recognized that the legislative authority of the United States extends to the acts of its citizens even within the territory of other sovereigns but held that the intent of the MMPA did not imply extraterritorial application. *Id.* at 1001 & n.10.

36. 39 Fed. Reg. 9685, 9685 (1974).

37. 41 Fed. Reg. 30,152, 30,153 (1976).

38. 37 Fed. Reg. 28,173, 28,177 (1972) (current version at 50 C.F.R. §§ 216.1-108 (1977)).

39. *Id.* at 28,177, 28,181 (50 C.F.R. § 216.10, *see note 38 supra*, was effective December 21, 1972-October 21, 1974).

40. "Incidental catch shall mean the taking of a marine mammal (1) because it is directly interfering with commercial fishing operations or (2) as a consequence of the steps used to secure the fish in connection with commercial fishing operations." *Id.* at 28,178 (current version at 50 C.F.R. § 216.3 (1977)).

41. 38 Fed. Reg. 7987 (1973). The current definition of "incidental catch" is at 50 C.F.R. § 216.3 (1977).

42. 38 Fed. Reg. 31,180, 31,180 (1973).

43. *Id.* at 31,181. For a full discussion of the procedure, *see* National Marine Fisheries Service, National Oceanic and Atmospheric Administration, Dep't of Commerce, Progress of Research on Porpoise Mortality Incidental to Tuna Purse-

ture.⁴⁴ Through the combined use of the safety panel and the backdown procedure an estimated ninety-eight percent of all netted dolphin were released.⁴⁵

Amended interim regulations, effective March 1, 1974, required the installation of a safety panel in all tuna purse-seine nets, the tightening of hand-hold openings to resist the insertion of a cylindrical object two inches in diameter, and the use of backdown and other release procedures until all live dolphin were released.⁴⁶ The effective date of these regulations was subsequently postponed until April 1, 1974, to allow persons affected to obtain and instal the fine mesh safety panels.⁴⁷ On March 13, 1974, a petroleum shortage, which resulted in limited supplies of nylon netting, led to the effective date being further postponed until June 1, 1974.⁴⁸ The nylon netting shortage continued, and on June 10, 1974, a provision was passed permitting the Regional Director of the NMFS to waive the safety panel requirement if the order for the netting was still in force and if he was convinced that the panel would be inserted as soon as possible after its delivery.⁴⁹ This final indefinite postponement appears to stand in direct contradiction to section 1381(b) of the MMPA, which provides for a maximum of four months to allow affected persons to implement the regulations.⁵⁰

Despite the petroleum shortage and the inconsistencies in-

Seine Fishing for Fiscal Year 1975, at 54 (1975) [hereinafter cited as Progress of Research 1975].

44. Progress of Research 1975, *supra* note 43, at 58-59. Two statistical studies revealed that one such panel reduces mortality in trouble-free sets by 35% or more. This "Medina Panel" was developed by Captain Harold Medina, who, in 1971, replaced the 4 1/2" mesh in the backdown area of his net with a 720' long, 36' deep strip of 2" mesh webbing to reduce the chances of dolphin becoming entangled in the mesh during the backdown procedure. *Id.*

45. Committee for Humane Legis., Inc. v. Richardson, 540 F.2d 1141, 1143-44 n.4 (D.C. Cir. 1976); Progress of Research 1975, *supra* note 43, at 51.

46. 39 Fed. Reg. 2481 (1974); 38 Fed. Reg. 31,180 (1973) (current version at 50 C.F.R. § 216.24(d)(2)(iv) (1977)).

47. 39 Fed. Reg. 2481 (1974).

48. *Id.* at 9684. To fish without a safety panel under this postponement, the owner or master of a vessel was required to show that a netting order was placed prior to April 1, 1974, that the order could not be filled by April 1, 1974, and that at least the hand-hold openings had been secured as prescribed in 50 C.F.R. § 216.24(b)(4). *Id.*

49. *Id.* at 20,406, 20,407.

50. In establishing regulations for the 24-month grace period "the Secretary . . . shall provide a reasonable time not exceeding four months for the persons affected to implement such regulations." 16 U.S.C. § 1381(b) (1976).

volved in the application of the interim regulations, the dolphin mortality rates of the domestic fleet decreased substantially from 1973 to 1974. The figures failed to approach an insignificant number, however, and stabilized at approximately 100,000 deaths per year.⁵¹

The NMFS promulgated regulations that provided for the issuance of permits for the taking of marine mammals incidental to commercial fishing operations for one year after the expiration of the two-year grace period on October 21, 1974.⁵² Before these regulations became effective, the NMFS published in the *Federal Register* a notice of intent to prescribe such regulations, of the estimated existing levels of the species and population stocks of the marine mammals concerned, and of the expected impact of the proposed regulations on the OSP of each species or population stock.⁵³ The NMFS made the required publication on March 13, 1974. It specified six dolphin species, listed the estimated population level of each, and noted the importance of the incidental take on the OSP's as unknown.⁵⁴ Despite this lack of information, the final regulations became effective September 30, 1974,⁵⁵ and the American Tunaboat Association (ATA) was issued a general permit allowing an unlimited number of dolphin to be taken between October 21, 1974, and December 31, 1975.⁵⁶

These regulations restricted purse-seining on dolphin to use of certain equipment and procedures. Requirements included a one and one-half inch stretch mesh safety panel,⁵⁷ securing of handhold openings, torque-balanced cable lines on vessels with histories of frequent roll-ups, use of a minimum of two auxiliary speedboats to hold the net open to the maximum extent, a platform or raft to allow physical removal of the live dolphin, and continued use of backdown and other rescue procedures until all live dolphin were released.⁵⁸ Although the regulations set no quota

51. Actual estimates were: 1972—304,600, 1973—175,000, and 1974—97,800. *Committee for Humane Legis., Inc. v. Richardson*, 540 F.2d 1141, 1144 (D.C. Cir. 1976).

52. 39 Fed. Reg. 32,117 (1974) (current version at 50 C.F.R. § 216.24 (1977)).

53. 16 U.S.C. § 1373(d) (1976).

54. 39 Fed. Reg. 9685, 9685 (1974). Species of dolphin listed were Bottlenose, Sarawak (Fraser's), spotted, spinner, striped, and common. *Id.*

55. *Id.* at 32,117, 32,118.

56. *Committee for Humane Legis., Inc. v. Richardson*, 540 F.2d 1141, 1146 (D.C. Cir. 1976).

57. The proposed regulations provided that two-inch mesh safety panels which had been approved in accordance with the interim regulations met the specifications until replaced because of normal wear and tear or until July 1, 1975, whichever occurred first. 39 Fed. Reg. 12,356, 12,358 (1974). This provision was deleted from the final regulations, which became effective September 30, 1974. *Id.* at 32,117, 32,118 (current version at 50 C.F.R. § 216.24(d)(2)(iv) (1977)).

58. *Id.*

for 1975, they established a goal of a fifty percent reduction in the mortality rate.⁵⁹ The 1975 regulations also required all certificate holders⁶⁰ to attend formal training sessions run by the NMFS.⁶¹ Despite these requirements, the number of dolphin deaths in 1975 was thirty-seven percent higher than in 1974.⁶²

An amendment to the regulations that would impose a quota was proposed in September, 1975.⁶³ At this time the NMFS gave population estimates for the offshore spotted dolphin and the eastern spinner dolphin which together comprised approximately eighty-two percent of the 1974 kill. The NMFS made no statement as to the effect of the kills on the OSP's⁶⁴ because it had not yet determined them.⁶⁵ The NMFS rejected this proposal in December, 1975, stating that it would impose a quota if dolphin mortality during the first part of 1975 did not approach the desired level.⁶⁶ This approach reflected an attempt by the NMFS to balance the interests of the dolphin against those of the tuna industry and to rely initially on the voluntary cooperation of the industry.⁶⁷ The

59. 40 Fed. Reg. 764, 765 (1975). This goal was considered obtainable assuming full cooperation of the United States tuna fleet and a harvest similar to that of 1974. *Id.*

60. Once the NMFS had issued a general permit to the ATA, individual captains of ships could apply for certificates of inclusion under the general permit. 50 C.F.R. § 216.24(c) (1977).

61. 40 Fed. Reg. 764, 765 (1975). These sessions are comprised of instruction concerning the provisions of the MMPA, the applicable regulations, the requirements of the certificate of inclusion and the general permit, and techniques that are required or that will contribute to reducing serious injury and mortality of dolphin. *Id.* (current version at 50 C.F.R. § 216.24(d)(2)(iv)(N) (1977)).

62. 41 Fed. Reg. 30,152, 30,155 (1976). In setting the 50% reduction goal it was assumed that fishing conditions in 1975 would be comparable to those in 1974. The increased kill rate was attributed to different conditions such as increased dolphin school size, different species composition of dolphin schools, and an increase in the percent of the total yellowfin catch that was caught in association with dolphin in 1975. Attempts to adjust the data for comparable fishing conditions resulted in an apparent decrease of 25% in the kill rate from 1974 to 1975. *Id.* at 30,155-56.

63. 40 Fed. Reg. 41,531, 41,532 (1975).

64. No intelligible or generally accepted definition of OSP existed until July, 1976, when an international workshop of scientists reached agreement and NMFS accepted their definition. Fox, *Tuna/Dolphin Program: Five Years of Progress*, OCEANS, May, 1978, at 57, 58. See note 88 *infra* (current definition).

65. 40 Fed. Reg. 41,531, 41,535-36 (1975).

66. *Id.* at 56,899, 56,899. The quota was to be imposed if, based on the mortality rates for the first three to four months of 1976, the total projected kill exceeded 70% of the final estimated 1975 kill. *Id.* at 56,900. This quota would result in only a 4.1% reduction from the 1974 mortality rate in 1976. A 50% reduction in 1975 was considered an obtainable goal. See note 59 *supra*.

67. The NMFS recognized a responsibility not to curtail significantly the activities of the tuna fleet. The NMFS agreed with the Marine Mammal Commission

NMFS did, however, amend the regulations to prohibit sets on pure schools of striped dolphin.⁶⁸

In response to the issuance of the regulations and the granting of the ATA's general permit for 1975, fourteen conservation organizations⁶⁹ filed suit against the Secretary of Commerce, the Administrator of the National Oceanic and Atmospheric Administration (NOAA), and the Director of the NMFS.⁷⁰ The suit was tried in May, 1976.⁷¹ District Judge Richey rejected the assertion that the MMPA supports any balancing of interests of the fishing industry and the marine mammals.⁷² He held that the interests of the fishing industry are to be considered only after protection of the marine mammals has been assured.⁷³ The regulations issued by the NMFS were declared void because of the agency's failure to publish adequate estimates of the existing population level of each species affected by the proposed regulations, the OSP of each of these species, and the expected impact of the regulations on the effort to achieve an OSP level for each species.⁷⁴ The MMPA requires all these statements.⁷⁵ The district court also declared void the ATA's general permit because the ATA had failed to prove that the takings would not work to the disadvantage of the marine mammals concerned⁷⁶ and because the permit did not specify the number and kind of animals authorized to be taken.⁷⁷ In granting relief to the plaintiffs, Judge Richey ordered the complete cessation of incidental killings and expressly rejected the

(MMC) that it lacked sufficient data to determine a level of mortality that would allow the stock of dolphin to increase with "reasonable assurance." For this reason, the MMC advocated no quota. The NMFS, however, felt that an overall quota could be set that would reasonably assure stability for the principal stocks. 40 Fed. Reg. 56,899, 56,990 (1975).

68. *Id.* at 56,900, 56,903 (current version at 50 C.F.R. § 216.24(d)(2)(i)(A) (1977)).

69. Among the larger organizations were the Fund for Animals, the Environmental Defense Fund, and the Committee for Humane Legislation. Minasian, *supra* note 8, at 61. The number 14 is comprised of both plaintiffs and plaintiff-intervenors. Committee for Humane Legis., Inc. v. Richardson, 414 F. Supp. 297, 299 (D.D.C.), *aff'd and modified*, 540 F.2d 1141 (D.C. Cir. 1976).

70. Pursuant to lawful delegations by the Secretary of Commerce and the Administrator of the NOAA, the Director of the NMFS is responsible for carrying out the functions prescribed by the MMPA. 414 F. Supp. at 299. The court permitted five organizations representing key elements of the United States tuna industry to intervene as defendants. *Id.*

71. *Id.*

72. *Id.* at 306-09.

73. *Id.* at 309.

74. *Id.* at 309-12.

75. 16 U.S.C. § 1373 (1976).

76. 414 F. Supp. at 312. Such proof is required under 16 U.S.C. § 1374(d)(3) (1976).

77. 414 F. Supp. at 313. Specificity of permits is required under 16 U.S.C. § 1374(b)(2)(A) (1976).

suggested alternative of imposing a quota.⁷⁸

Judge Richey's ruling was to be effective as of May 31, 1976.⁷⁹ On May 29, 1976, the NMFS requested a stay and submitted an affidavit promising to impose a quota of 78,000 animals for the 1976 season if the stay were granted.⁸⁰ The United States Court of Appeals for the District of Columbia Circuit immediately stayed Judge Richey's order.⁸¹ Within two weeks the NMFS published notice of the imposition of the 78,000-animal quota.⁸² The appellate court subsequently affirmed Judge Richey's decision but stayed the effective date of the order until January 1, 1977.⁸³ The court agreed with Judge Richey that the NMFS had not fulfilled the procedural requirements of the MMPA⁸⁴ but did not agree entirely with his interpretation of the intentions behind the MMPA. The appellate court was more persuaded than Judge Richey had been by language indicating that the MMPA was never intended to ruin the tuna industry.⁸⁵ The appellate court accepted a compromise approach of balancing the interests of the tuna industry against those of the marine mammals. The court emphasized that purse-seine fishing on dolphin is not prohibited by the MMPA but is merely subject to certain regulations.⁸⁶

In October, 1976, the NMFS published its proposed regulations for 1977. It proposed a quota of 29,920 incidental deaths comprised of eleven specific stock quotas.⁸⁷ The publication included estimated population and OSP⁸⁸ levels for twelve dolphin stocks; no

78. 414 F. Supp. at 314. The alternative was proposed by the Environmental Defense Fund as an attempt at "conciliation" with the tuna industry. The suggestion was rejected on the basis of the continued lack of required data and the failure of the NMFS to impose a quota despite a rise in dolphin mortality following the expiration of the grace period. *Id.*

79. *Id.* at 315.

80. 41 Fed. Reg. 23,680 (1976).

81. *Id.* at 23,205.

82. *Id.* at 23,680.

83. *Committee for Humane Legis., Inc. v. Richardson*, 540 F.2d 1141, 1151 (D.C. Cir. 1976).

84. *Id.* at 1150.

85. *Id.* at 1148-49.

86. *Id.* at 1149.

87. 41 Fed. Reg. 45,015 (1976). The official quota of 29,920 included an allowable take of five short-finned pilot whales. These small whales are occasionally found in association with the dolphin-tuna herds and are taken incidentally in the purse-seines along with the dolphin. *Id.*

88. [OSP] is a population size which falls within a range from the population level of a given species or stock which is the largest supportable within the ecosystem to the population level that results in maximum net productivity.

estimates were available for coastal spotted dolphin or Costa Rican spinner dolphin. Taking of these stocks was prohibited as were takings of eastern and white-belly spinner dolphin. A proposed worldwide take of each stock which would virtually assure its population increase was published, along with the portion of that take reserved for the domestic fleet.⁸⁹ The proportion of the allowed worldwide take reserved for the domestic fleet varied significantly between designated stocks. The NMFS gave no justification for the inconsistent distribution.⁹⁰

Also, in October the ATA reached its quota of 78,000 for 1976; the general permit and its certificates of inclusion were rendered

Maximum net productivity is the greatest net annual increment in population numbers of biomass resulting from additions to the population due to reproduction and/or growth less losses due to natural mortality.

50 C.F.R. § 216.3 (1977). For an earlier definition of OSP, *see* note 19 *supra*.

89. 41 Fed. Reg. 45,015, 45,016 (1976). Specific figures published were:

Species Stock Management Units	Estimated Population Level	Proposed Limit on Worldwide Take	Proposed United States Take
spotted dolphin (coastal)	unknown	0	0
spotted dolphin (offshore)	3,674,000	47,960	21,800
spinner dolphin (Costa Rican)	unknown	0	0
spinner dolphin (eastern)	1,292,000	0	0
spinner dolphin (white-belly)	549,000	3,032	0
common dolphin (northern)	400,000	480	400
common dolphin (central)	230,000	2,000	1,600
common dolphin (southern)	800,000	7,100	5,600
striped dolphin (northern)	18,000	65	40
striped dolphin (north-equatorial)	230,000	653	400
Bottlenosed dolphin	588,000	97	60
rough-toothed dolphin	450	5	5
Fraser's dolphin	7,800	5	5
Risso's dolphin	7,500	7	5

90. For an example of this inconsistency, compare the proposals for the white-belly spinner dolphin and for the rough-toothed dolphin, note 89 *supra*. The estimated population of the white-belly spinner was 549,000 while that of the rough-toothed dolphin was only 450. The proposed limits on the worldwide takes of these stocks were 3,032 and 5 respectively. The inconsistency arises in the proposed quotas for the United States fleet. Taking of white-belly spinners was totally banned while the entire allowable take of five of the extremely rare stock was claimed by the domestic fleet. Such figures do not indicate a competent attempt by the NMFS to provide the basis for a logical stock-level international conservation scheme.

invalid as of October 22, 1976.⁹¹ On October 21, 1976, however, a United States district court in San Diego, California, issued a temporary restraining order that precluded revocation or limitation of the general permit until such time as the litigation was resolved.⁹² The total estimated kill for 1976 was 104,000.⁹³

By November, 1976, it was evident that even with expedited procedures, final regulations for 1977 could not be effected before mid-February. To avoid a lapse during which fishermen might take no marine mammals, the NMFS proposed amending the 1976 regulations to allow continued takings until the 1977 regulations became effective.⁹⁴ In early January, 1977, the NMFS extended the ATA's general permit to cover the period from January 1 to April 30, 1977. The allowable take, designated by species and stock, amounted to one third of the proposed quota for 1977. The ATA opposed these limitations as unduly restrictive.⁹⁵

On March 1, 1977, the NMFS promulgated final regulations for 1977. The regulations prohibited sets on any school containing coastal spotted dolphin, Costa Rican spinner dolphin, or eastern spinner dolphin. They also prohibited sets on any pure school of other than offshore spotted dolphin and common dolphin.⁹⁶ The proposed approach of specific stock quotas was accepted, but the total quota was finally set at 59,050 as a result of battling between the tuna industry and conservation organizations.⁹⁷ The increase from the proposed quota of 29,920 resulted from an increase in the quota for offshore spotted dolphin (21,800 to 43,090) and from replacement of the ban on the taking of white-belly spinners with a quota of 7,840.⁹⁸

91. 41 Fed. Reg. 45,569 (1976).

92. *Id.* at 47,254.

93. Fox, *supra* note 64, at 58.

94. 41 Fed. Reg. 49,859 (1976).

95. 42 Fed. Reg. 1034 (1977).

96. *Id.* at 12,010.

97. *Id.* at 12,015, 12,018. Representatives of the tuna industry testified that the quota of 29,920, along with the ban on the taking of spinner dolphins, would be economically disastrous to the industry. The NMFS recognized an obligation to consider the economic feasibility of implementing the regulations. The industry's record indicated that a quota of less than 80,000 would, in the short run, adversely affect the profitability of the seiners. The NMFS refused to raise the quota above 59,050, stating that their primary consideration had to be protection of the animals. *Id.* at 12,019.

98. *Id.* at 12,018. Not only was the ban on white-belly spinners lifted, but the final domestic quota was more than twice the number determined to be the worldwide biological limit necessary for the population to increase. *See* note 89 *supra*.

The 1977 regulations required the use of a one and one-fourth inch mesh safety panel, speedboats and rescuers during backdown and release, floodlights when sets occurred in darkness, and a rubber raft and face mask to enable rescuers to determine whether any live dolphin were left in the net.⁹⁹ The fishermen encountered difficulty in acquiring and installing the required fine mesh safety panels by the April 30, 1977, deadline, but again the NMFS made allowances.¹⁰⁰ The uninterrupted use of purse-seining on dolphin continued to receive high priority.

In May, 1977, the NMFS adopted a "reasonable enforcement" policy to govern the prohibited but accidental taking of eastern spinner dolphins.¹⁰¹ The policy specifies the time in the purse-seine procedure when fishermen must determine whether prohibited species are among the herd.¹⁰² If after that point any of the prohibited species are identified, the set may continue, and no notice of violation will be issued or penalty assessed if the prohibited dolphin are subsequently encircled and killed.¹⁰³ The NMFS later applied this policy to takings of rough-toothed dolphin¹⁰⁴ and Fraser's dolphin¹⁰⁵ when their quotas were reached. Such a policy appears, at first, to emasculate any ban on takings of a certain species. However, the NMFS concluded that after the net is in the water and partially encircles the school, a full deployment, pursing, and retrieval of the net in compliance with the required protective measures is less dangerous to the dolphin than an uncontrolled net in the water.¹⁰⁶

Unfortunately, no adequate means of protecting the rarest species have yet been devised. In its proposal for the 1977 regulations, the NMFS specified that the maximum biological allowable

99. 42 Fed. Reg. 12,015, 12,019 (1977). The NMFS reserved the option to prohibit sets that could not be completed before darkness if such sets continued to result in high mortality. *Id.* (current version at 50 C.F.R. § 216.24(d)(2)(iv) (1977)).

100. The Southwest Regional Director of the NMFS was given authority to deal with these cases on an individual basis. He could allow continued usage of approved two-inch stretch mesh safety panels under limited or conditional time extensions until the fine mesh panels could be installed. 42 Fed. Reg. 24,742, 24,742-43 (1977).

101. *Id.* at 22,575. The NMFS accepted this policy as a result of a hearing at which participants discussed the difficulty of identifying the different dolphin species and the degree of error involved in such identification. Both the Environmental Defense Fund and the Marine Mammal Commission agreed that an accidental take of up to 6,500 eastern spinners would allow the population of that stock to increase with virtual certainty. *Id.*

102. The time when the net skiff is released from the vessel attached to the net at the start of a set is determinative. *Id.*

103. *Id.*

104. 43 Fed. Reg. 9632 (1978); 42 Fed. Reg. 42,370, 42,371 (1977).

105. 42 Fed. Reg. 58,195 (1977).

106. *Id.* at 64,548, 64,551.

take that would ensure the increase of the population of rough-toothed dolphin was five, of Fraser's dolphin five, and of Risso's dolphin seven.¹⁰⁷ The "reasonable enforcement" policy accepts the fact that, despite the best efforts of the fishermen, members of prohibited species and stocks will be taken accidentally. In light of this acknowledgement it would seem that quotas should be set sufficiently below the maximum biological limits to compensate for such accidental takings. In 1977, however, the NMFS allowed the domestic fleet a quota of five of each of these three rare species, making no allowance for accidental takings or for takings by other States.¹⁰⁸ Adequate protection of these rare species is of utmost importance. The application of the "reasonable enforcement" policy should encourage the NMFS to ban the taking of these three species altogether. Allowing the industry an initial intentional take of five individuals of these species does not significantly benefit the industry. In the conservation of these rare species, however, the difference between an annual take of five or ten animals may well be significant.¹⁰⁹ With little advantage for the industry provided by a quota of five, and a distinct advantage for the dolphin provided by a total ban, the NMFS's choice appears unsupported by any logical, economic, or policy basis.

In August, 1977, the overall quota was increased to 62,429. This change resulted from an increase in the quota on white-belly spinner dolphin from 7,840 to 11,219¹¹⁰ based on updated estimates of existing population levels.¹¹¹ The increase came after the ATA had petitioned to have the quota increased to 81,707.¹¹² Once again the requests of the ATA, although not entirely successful, were effective in acquiring a modification of the regulations. The history of the implementation of the MMPA and of its regulations

107. 41 Fed. Reg. 45,015, 45,016 (1976). See note 89 *supra*.

108. 42 Fed. Reg. 12,015, 12,017-18 (1977).

109. Loss of Fraser's dolphin in the ETP fishery may be insignificant in terms of absolute numbers, but when one considers the rarity of the species, the numbers are dramatic. Twenty-nine of 34 identified specimens worldwide have been taken incidentally by tuna seiners. 41 Fed. Reg. 30,152, 30,183 (1976).

110. 42 Fed. Reg. 40,230 (1977).

111. *Id.* at 29,533. The updated information resulted in an increase in the estimated population from 549,000 to 690,000. *Id.*

112. *Id.* The ATA, in its petition of April 15, 1977, requested that the white-belly spinner quota be increased to 17,000 (an increase of 9,160), that the eastern spinner quota be increased to 6,587 (an increase of 6,587), and that the offshore spotted quota be increased to 50,000 (an increase of 6,910). The NMFS found the revisions of the existing population estimates for eastern spinners and offshore spotted to be insignificant. *Id.*

regarding the tuna industry reflects a periodic oscillation between strict regulation and an enforcement policy characterized by stays, postponements, and compromises. This oscillation has resulted from the battle between conservationists, advocating strict adherence to the MMPA, and the tuna industry, armed with economic policy arguments supported by the industry's money and influence. This battle has influenced both the courts and the NMFS. The result has been a periodically fluctuating enforcement policy that has unsuccessfully attempted to achieve an acceptable balance between the competing interests.

Despite the compromises and allowances made by the NMFS in its enforcement policies, the industry achieved miraculous results in 1977. The nature of the problem and the economics of the fishery itself motivated the industry to find a solution. The motivating factors include the time involved in removing dolphin from the net when high mortality occurs and the jeopardy in which the crew is placed. Most important, reductions in dolphin populations will eventually terminate the use of this highly efficient fishing method.¹¹³ Estimates of incidental mortality for 1977 showed a substantial drop of 27,000 to 28,000—far below the final quota of 62,429. Entanglement of dolphin in nets dropped from six to seven per set in 1976 to less than one per set in 1977. The number of animals killed during the hauling in of the net dropped from one per set in 1976 to less than one in ten sets in 1977. The proportion of sets in which no animals were killed rose from forty percent in 1976 to sixty percent in 1977.¹¹⁴ The dolphin apron was extensively tested in 1977, and vessels using it averaged dolphin mortality rates of about half those of other vessels.¹¹⁵

In December, 1977, the NMFS established final regulations for tuna purse-seine operations in the ETP for 1978, 1979, and 1980. These regulations set declining individual species and stock quo-

113. National Marine Fisheries Service, National Oceanic and Atmospheric Administration, Dep't of Commerce, Progress of Research on Porpoise Mortality Incidental to Tuna Purse-Seine Fishing for Fiscal Year 1976, at 6 (1976) [hereinafter cited as Progress of Research 1976].

114. Fox, *supra* note 64, at 58. The tuna fleet remained in port for nearly three months during 1977, but the yellowfin catch was near the average amount for the preceding four years. The low mortality was thus attributed to the mandated equipment and procedures and to the diligent efforts of the United States fishermen. *Id.* If these extremely low rates are accurate it is interesting that the industry clamored in August, 1977, to have the quotas raised. See note 112 and accompanying text *supra*.

115. Fox, *supra* note 64, at 58. The apron is a trapezoidal-shaped strip of webbing added to the net in the vicinity of the safety panel. The apron serves to prevent formation of canopies of webbing during backdown that sometimes entrap dolphin and to reduce the depth of the pocket at the end of the backdown channel, which will allow faster and more effective release of dolphin. Progress of Research 1975, *supra* note 43, at 55.

tas, totaling 51,945, 41,610, and 31,150 respectively, for the three years.¹¹⁶ The NMFS considered economic data on the effect of these quotas on the profitability of purse-seiners and determined that it would not be greatly affected.¹¹⁷

The mortality rate continued to drop during early 1978. In the first three months mortality was down twenty percent from the same period for 1977.¹¹⁸ The NMFS added the apron to the required equipment and vessels equipped with them in early 1978 averaged dolphin mortality rates sixty percent below those of other vessels. All vessels were to have aprons installed by July 1, 1978.¹¹⁹ The use of a man with a face mask in a raft to check for dolphin in the bottom of the net has been credited with substantial reduction in post-backdown losses in 1977 and 1978. Dolphin have been known to react to frustration by holding their breath and sinking for a few minutes. This behavior explained the presence of dead dolphin in the nets when the entire herd appeared to have been successfully released. The man with the face mask now checks for these dolphin and notifies the skipper to continue backdown until they all surface and are released.¹²⁰

The dolphin are also contributing to the reduction in mortality. They appear to be familiar with the purse-seine and backdown procedures, resting calmly until backdown begins and then proceeding quickly to the appropriate area. Dolphin have been observed hiding when pursuit begins, hanging motionless just below the surface. The net must be set to the port side of the ship; some herds race across to the starboard side and away to safety while others swim under the noisy speedboats and bubbly wake rather than turn away from them.¹²¹

Although the overall kill rate has decreased drastically, the quotas continue to play an important role in the preservation of individual species and stocks. Because its quotas were reached, taking of rough-toothed dolphin was prohibited on March 15,

116. 42 Fed. Reg. 64,548, 64,548 (1977).

117. *Id.* at 64,550.

118. Fox, *supra* note 64, at 58. Kills per set dropped from 0.26 in 1977 to 0.15 for early 1978. Pryor & Norris, *supra* note 9, at 37.

119. Fox, *supra* note 64, at 58.

120. Pryor & Norris, *supra* note 9, at 36.

121. *Id.* Some spotted dolphin in coastal areas off Ecuador are so skilled at escape procedures that fishermen have nicknamed them the "Untouchables." *Id.* For an amusing account of an encounter with this herd, see Kessler, *The Hunt for Tuna*, OCEANS, July, 1976, at 50, 56-57.

1978.¹²² For the same reason, the NMFS prohibited taking of northern common dolphin on June 30, 1978.¹²³ Such prohibitions are essential to the comprehensive dolphin conservation program¹²⁴ but will undoubtedly continue to frustrate fishing efforts and to irritate the fishing industry whose overall kill rate is currently well below the allowable quota.

With direct observable mortality having been reduced to such a low level, the NMFS has expanded its research on the effects of the pursuit and capture process on the dolphin.¹²⁵ The NMFS considers the current quotas and mortality rates sufficiently conservative to ensure that any adverse effects will not prevent maintenance of the OSP.¹²⁶

If the kill were reduced to 10,000 animals per year, and if an adequate means to protect the rare species were developed, the population dynamicist and probably the environmentalist would be satisfied. However, to an animal protectionist, who is concerned with the survival of the individuals of the species, 10,000 is not satisfactory. To the pure protectionist there may be no acceptable number other than zero and therefore no possible solution but to discontinue the practice of setting on dolphin.¹²⁷ It is recognized and accepted that unless fishermen devise systems that are economically more efficient than the present method of simultaneously capturing both tuna and dolphin, incidental mortality will not be eliminated.¹²⁸ The debate is certain to continue, if not on ecological grounds, then surely on emotional ones.¹²⁹

Regulations on Imported Tuna

Prior to the issuance of the 1977 regulations, the tuna industry argued that strict compliance with the MMPA would actually exacerbate the plight of the dolphin: Compliance would supposedly drive domestic vessels and crews to foreign States that have little

122. 43 Fed. Reg. 9632 (1978).

123. *Id.* at 28,502. Taking of common dolphin was prohibited north of a line drawn between 18°N, 102°30'W and 8°N, 114°W. *Id.*

124. The enforcement of the specific stock quotas is essential to the preservation of the rare species for which very low quotas have been set. *See* notes 107-09 and accompanying text *supra*.

125. *See* Prepared Testimony Submitted by SWFC Staff at Hearing to Consider Amendments to Regulations Governing Incidental Taking of Marine Mammals in the Course of Commercial Fishing Operations, San Diego, California (Aug. 22-29, 1977) (statement of Dr. Wm. F. Perrin).

126. 42 Fed. Reg. 64,548, 64,551 (1977).

127. Pryor & Norris, *supra* note 9, at 37.

128. Fox, *supra* note 64, at 59.

129. Pryor & Norris, *supra* note 9, at 37.

or no official concern for dolphin protection.¹³⁰ The final 1977 regulations did in fact stimulate the first major threat from the domestic fleet to reregister under foreign flags.¹³¹ The effect on the domestic fleet of prohibiting fishing on dolphin had not been accurately determined. Reported estimates indicated that anywhere from thirty-three to fifty percent of the total domestic tuna catch was acquired by fishing on dolphin.¹³² The MMPA was not intended to drive the tuna industry out of business,¹³³ and threats from the tuna fleet that they would leave the country met with matter-of-fact statements that the government would not allow it.¹³⁴ Even if domestic vessels had registered under foreign flags they might still have been subject to United States law. For the law of the flag to govern, more than registration is required. All ties with the United States would effectively have to have been cut.¹³⁵ In making such threats, the domestic fleet faced the realization that the MMPA provides for restricting the importation of tuna to States that have documented their vessels' conformance to the United States' standards.¹³⁶ Elimination of the United States market removed any advantage of registration because virtually all yellowfin caught in association with dolphin is destined for the United States.¹³⁷

130. *Committee for Humane Legis., Inc. v. Richardson*, 414 F. Supp. 297, 312 (D.D.C.), *aff'd and modified*, 540 F.2d 1141 (D.C. Cir. 1976).

131. Jackson, *The Dolphin Catch- and Catch-22*, SPORTS ILL., May 24, 1976, at 59, 60.

132. *Committee for Human Legis., Inc. v. Richardson*, 414 F. Supp. 297, 300 (D.D.C.), *aff'd and modified*, 540 F.2d 1141 (D.C. Cir. 1976).

133. *Committee for Humane Legis., Inc. v. Richardson*, 540 F.2d 1141, 1148 (D.C. Cir. 1976).

134. Representative Robert L. Leggett (D-Cal.), Chairman of the House Merchant Marine and Fisheries Committee's Subcommittee on Fisheries and Wildlife Conservation and the Environment, stated: "We're not going to let them leave the United States. If they try, we'll just pass a law to stop them." Prather, *The All-Porpoise War*, 1977 NAT'L REV. 439, 439.

135. *Committee for Humane Legis., Inc. v. Richardson*, 414 F. Supp. 297, 312 n.33 (D.D.C.), *aff'd and modified*, 540 F.2d 1141 (D.C. Cir. 1976). For a detailed discussion of the probability that changing to foreign flags would enable the tuna vessels to escape the United States' jurisdiction, see Nafziger & Armstrong, *The Porpoise-Tuna Controversy; Management of Marine Resources After* Committee for Humane Legislation, Inc. v. Richardson, 7 ENV'T'L L. 223, 266-75 (1977).

136. 16 U.S.C. § 1372(c) (1976). A State may obtain certification by showing either that its fishing operations are conducted in conformance with United States regulations and standards or that such fishing does not result in an incidental mortality and serious injury rate in excess of that resulting from domestic fishing operations under United States regulations. 50 C.F.R. § 216.24(e) (5) (i) (1977).

137. *Tuna Enforcement Down—Porpoise Slaughter Up*, AUDUBON, Nov., 1975, at 120. Historically, the United States has been the largest importer and consumer of

As early as January, 1975, the NMFS had certified that Canada and Denmark were fishing in compliance with United States regulations regarding the taking of marine mammals.¹³⁸ When the district court invalidated the 1976 regulations, all importation of tuna caught in association with dolphin was also banned.¹³⁹ This order followed the same series of stays as did the prohibition of domestic purse-seining on dolphin.

When the NMFS promulgated the 1977 regulations, foreign States were allowed a three-month grace period to effect technical changes and to obtain certification.¹⁴⁰ Certification is not required for the importation of cans that are marked as containing other than yellowfin tuna.¹⁴¹ No statement of past enforcement actions by foreign States under their laws and regulations is required for certification.¹⁴² The effective date of these regulations was initially June 1, 1977; in May, 1977, it was extended to August 1, 1977;¹⁴³ in August, 1977, it was extended to October 1, 1977;¹⁴⁴ and in October, it was extended to December 31, 1977.¹⁴⁵ The NMFS justified these extensions as an attempt to avoid an unwarranted interruption in the flow of tuna and of tuna products. It emphasized that all States that either had been visited or had responded to communications had been receptive and had taken steps to conform with United States regulations.¹⁴⁶ Another primary consideration in making the extensions was the work of the Inter-American Tropical Tuna Commission (IATTC) in formulating an international resolution for the ETP fishery. Implementation of that resolution would influence the decision on import exemptions for many States.¹⁴⁷ By October, 1978, Bermuda, Canada, the Congo, Costa Rica, Ecuador, Mexico, New Zealand, Spain, Senegal, and Venezuela had been granted exemptions from the em-

tuna and the second largest harvester (Japan is first). The United States accounts for approximately 45% of the world tuna consumption and 15% of the world tuna catch. FEIS, *supra* note 11, at 24-25.

138. 40 Fed. Reg. 819 (1975).

139. 41 Fed. Reg. 21,782, 21,783 (1976).

140. 42 Fed. Reg. 12,015, 12,019 (1977).

141. 50 C.F.R. § 216.24(e)(2)(ii) (1977).

142. 42 Fed. Reg. 12,015, 12,019 (1977).

143. *Id.* at 24,742, 24,742.

144. *Id.* at 39,394.

145. *Id.* at 54,294, 54,294.

146. *Id.* Canada, Ecuador, Mexico, and the Netherlands Antilles were in substantial conformance with United States regulations and standards. Costa Rica, Nicaragua, and Panama had indicated an intent to comply and had undertaken good faith efforts to achieve conformance. The remaining States, Bermuda, Peru, Senegal, Spain, and Venezuela, had been contacted, but their position with respect to conformance was still unclear. *Id.*

147. *Id.* at 54,294-95.

bargo provisions.¹⁴⁸

To determine the effect of the foreign fleets on dolphin mortality, the United States sent inquiries in July, 1975, to governments whose nationals fish for yellowfin tuna in the Atlantic and Pacific Oceans.¹⁴⁹ Only five States responded. The Ivory Coast, Nicaragua, and South Korea indicated that their vessels did not set on dolphin schools. Canada and Mexico replied that their vessels used safety panels and backdown procedures but that no research programs were underway.¹⁵⁰

Despite the lack of direct data from foreign fleets, the NMFS estimated that foreign involvement in the tuna-dolphin fishery increased six-fold from 1971 to 1974—from two to twelve percent of the total catch.¹⁵¹ By 1975, the NMFS attributed twenty-six percent of the kill to foreign vessels. Although only fourteen foreign States were involved in the ETP tuna fishery in 1975, a substantial increase in foreign involvement was anticipated. Several States with governmental policies of fishery expansion had obtained inexpensive capital from international sources.¹⁵² In 1977 vessels of twelve of the seventeen foreign States involved in the ETP fishery, representing eighty percent of the foreign fleet's seiner capacity,¹⁵³ were fishing in association with dolphin. The foreign fleet controlled thirty percent of the ETP fishery, and the IATTC reported that most newly constructed foreign vessels would be large seiners capable of fishing on dolphin.¹⁵⁴ The NMFS estimated the total incidental dolphin mortality for the foreign fleet

148. Canada, Ecuador, Mexico, and the Netherlands Antilles were exempt as of October, 1977. *Id.* at 56,617. Nicaragua was exempted in December, 1977. *Id.* at 64,121. Bermuda and Panama were exempted in January, 1978. 43 Fed. Reg. 1093, 3566 (1978). Costa Rica was exempted in February, 1978. *Id.* at 5521. Venezuela was exempted in July, 1978. *Id.* at 31,144, 31,145. New Zealand was exempted in August, 1978. *Id.* at 36,263. The Congo, Senegal, and Spain were exempted in September, 1978. *Id.* at 40,025.

149. 41 Fed. Reg. 30,152, 30,160 (1976). The inquiries asked: (1) whether the State was carrying on tuna fishing on dolphin in the Atlantic, and if so, where and to what extent, (2) what technological research was underway or under consideration to reduce or eliminate the incidental take of dolphin, (3) how the State regulated the take of marine mammals incidental to the tuna fishery, and (4) whether it would be useful to conduct future discussions on a mutual observer program. *Id.*

150. *Id.*

151. Progress of Research 1975, *supra* note 43, at 64.

152. Progress of Research 1976, *supra* note 113, at 4.

153. See note 11 *supra*.

154. FEIS, *supra* note 11, at 25.

for 1977 as 41,000.¹⁵⁵ The NMFS required States that were exempted from the United States' import restrictions to provide detailed data on their incidental takings.¹⁵⁶ This data will lead to more accurate estimates of the foreign fleet's effect on dolphin population stocks. Regardless of the actual figures for the foreign fleet, it is clear that the problem is international in scope and cannot be solved by unilateral United States action.

THE INTERNATIONAL PICTURE

The United Nations Law of the Sea Conferences

Three major treaties pertinent to this discussion resulted from the 1958 United Nations Conference on the Law of the Sea. The first treaty, the Convention on the High Seas, guarantees freedom of fishing on the high seas¹⁵⁷ limited only by "reasonable regard" for the rights of other States.¹⁵⁸ However, the treaty does not specify the rights and obligations of States utilizing living marine resources.¹⁵⁹

The Convention on the Territorial Sea and the Contiguous Zone grants to coastal States sovereign authority¹⁶⁰ over living re-

155. 42 Fed. Reg. 12,015, 12,020 (1977).

156. Reports received were as follows: Canada—1976 estimated incidental dolphin mortality was 115-693. 1977 mortality was not expected to exceed 1,000. *Id.* at 56,617. Ecuador—no direct pursuit and encirclement of dolphin is used. *Id.* Mexico—1976 estimated mortality was 7,087, not expected to increase in 1977. *Id.* Netherlands Antilles—1976 estimated mortality was 217. *Id.* Panama—collection of data on 1977 dolphin mortality not yet complete. 43 Fed. Reg. 1093, 1094 (1978). Bermuda—1977 estimated mortality was 200, not expected to increase in 1978. *Id.* at 3566. Costa Rica—1977 dolphin mortality from three small seiners which were not capable of intentionally setting on dolphin was five. Estimated 1978 mortality, due to addition of four large seiners, not expected to exceed 2,500. *Id.* at 5521. Venezuela—estimated dolphin mortality of three seiners from May, 1978, to May, 1979, is 150 animals. *Id.* at 31,144, 31,145. New Zealand—estimated dolphin mortality for 1977 was 320 animals. *Id.* at 36,263. Congo—estimated dolphin mortality for the one purse-seiner operating in the ETP during 1977 was 40 animals. *Id.* at 40,025. Senegal—estimated dolphin mortality for its three seiners from June, 1977, to June, 1978, was 29 animals. *Id.* Spain—estimated dolphin mortality for its one seiner during 1977 was 50 animals. *Id.*

157. "High seas" are defined as "all parts of the sea that are not included in the territorial sea or in the internal waters of a state." Convention on the High Seas, art. 1, *done* Apr. 29, 1958, [1962] 13 U.S.T. 2312, T.I.A.S. No. 5200, 450 U.N.T.S. 82.

158. *Id.* arts. 1-2. The Convention has been ratified by all major whaling States but not by all minor ones, such as South Korea, Chile, Peru, and Norway. Scarff, *supra* note 2, at 608. Of the 17 States involved in the ETP fishery in 1977, only Costa Rica, Japan, Mexico, the Netherlands, Senegal, Spain, the United States, and Venezuela have ratified. TREATY AFFAIRS STAFF, OFFICE OF THE LEGAL ADVISER, U.S. DEPT OF STATE, TREATIES IN FORCE 326 (1978).

159. Scarff, *supra* note 2, at 608.

160. This sovereign authority includes the right to prohibit, regulate, and monopolize the exploitation of marine resources. Convention on the Territorial Sea and the Contiguous Zone, art. 1, *done* Apr. 29, 1958, [1964] 15 U.S.T. 1606, T.I.A.S. No. 5639, 516 U.N.T.S. 205.

sources within their territorial seas.¹⁶¹ This Convention does not, however, establish the breadth of the State's territorial sea. This issue has become one of international dispute as States have extended the traditional three-mile claim to as much as 200 miles.¹⁶² Although regulations of such international commissions as the International Whaling Commission and the IATTC bind member States, those States are free to adopt more stringent conservation measures within their territorial seas.¹⁶³

The Convention on Fishing and Conservation of the Living Resources of the High Seas distinguishes two management zones: the high seas and areas of the high seas adjacent to the territorial sea of a coastal State.¹⁶⁴ The Convention specifically recognizes the need for cooperation and coordination between coastal States and States fishing the adjacent high seas in management of species, such as dolphin, that migrate between territorial waters and the high seas.¹⁶⁵ The conservation measures of the coastal State are binding on all signatory States whose nationals fish for migratory species in the adjacent high seas.¹⁶⁶ The Convention also provides that when several States are fishing the same stocks on the high seas they must cooperate in reaching agreement on conservation measures.¹⁶⁷ This Convention, although not widely ratified,¹⁶⁸ provided the basis for the current Law of the Sea negotiations concerning fishery and economic zones.¹⁶⁹

161. This Convention has been signed by all major but few minor whaling States. Scarff, *supra* note 2, at 609. Japan, Mexico, the Netherlands, Spain, the United States, and Venezuela are the only signatory States involved in the ETP fishery. TREATIES IN FORCE, *supra* note 158, at 327.

162. Scarff, *supra* note 2, at 609.

163. *Id.*

164. Convention on Fishing and Conservation of the Living Resources of the High Seas, arts. 1-5 (high seas), arts. 6-8 (high seas adjacent to territorial sea of coastal State), *done* Apr. 29, 1958, [1966] 17 U.S.T. 139, T.I.A.S. No. 5969, 559 U.N.T.S. 285.

165. *Id.* art. 6(4).

166. *Id.* arts. 6-7. If other States object to the coastal State's conservation measures they may invoke a dispute-settlement procedure. *Id.* arts. 6-11. If negotiation fails, the coastal State has the right to impose unilateral conservation measures in any area of the high seas adjacent to its territorial sea where it can be shown that such measures are urgent, have an appropriate scientific basis, and are non-discriminatory toward foreign fishermen. *Id.* art. 7.

167. *Id.* arts. 6-7.

168. Scarff, *supra* note 2, at 609. Of the ETP tuna fishing States, only Colombia, France, Mexico, the Netherlands, Spain, the United States, and Venezuela have ratified the Convention. TREATIES IN FORCE, *supra* note 158, at 300.

169. Scarff, *supra* note 2, at 610.

Any attempts at international conservation of dolphin will be influenced by the resolution of two issues under discussion at the Third United Nations Conference on the Law of the Sea: the 200-mile exclusive economic zone (EEZ) and the special problems regarding migratory species. Under the Informal Composite Negotiating Text (ICNT)¹⁷⁰ position, the coastal State is sovereign within its EEZ¹⁷¹ but has a duty to ensure optimum utilization of fisheries resources within that zone¹⁷² while ensuring protection against over-exploitation.¹⁷³ If unable to harvest fully the allowable catch, the coastal State must allow other States to harvest the remainder.¹⁷⁴ Marine mammals are addressed as a special case, however, and coastal States are free to prohibit or regulate their exploitation. A general duty is imposed on all States to cooperate in the protection of marine mammals, but each coastal State will determine what regulations will be applicable within its EEZ.¹⁷⁵ Thus, the groundwork for a pluralistic regulatory scheme has been set, and the consequences for the dolphin are as yet undetermined. One author has suggested that some States may provide complete protection for cetaceans whereas a large international agency is unlikely to agree to absolute nonexploitation.¹⁷⁶ Another author has expressed the concern that coastal States may exploit the stocks within their EEZ's with little restraint, effectively defeating any attempt at global conservation.¹⁷⁷

170. U.N. Doc. A/Conf. 62/WP. 10, *reprinted in* 8 UNCLOS III OR 1, *and in* 16 INT'L LEGAL MATERIALS 1108 (1977). The ICNT was adopted at the Sixth Session of the Third United Nations Conference on the Law of the Sea, held in New York City from May 23 to July 15, 1977.

171. *Id.* art. 61(1).

172. *Id.* art. 62(1).

173. *Id.* art. 61(2). Over-exploitation is determined with reference to Maximum Sustainable Yield (MSY). *Id.* art. 61(3). The conservation program required under the ICNT is intended to be the result of an integration of economic, technical, social, and environmental factors. *Id.* art. 61(3), (4); Mirvahabi, *Significant Fishery Management Issues in the Law of the Sea Conference: Illusions and Realities*, 15 SAN DIEGO L. REV. 493, 507 (1978). Because the ICNT's guidelines are broad and leave specific interpretation and implementation to the discretion of the coastal State, the success of the conservation programs will depend on the reactions of the various States involved. *Id.* at 508.

174. ICNT, art. 62(2), U.N. Doc. A/Conf. 62/WP. 10, *reprinted in* 8 UNCLOS III OR 1, *and in* 16 INT'L LEGAL MATERIALS 1108 (1977). Each coastal State determines the "allowable catch" within its EEZ. *Id.* art. 61(1).

175. *Id.* art. 65. See Richardson, *Introduction*, 16 SAN DIEGO L. REV. 451, 457 (1979). See also note 182 *infra* (describes New Zealand's recent enactment of comprehensive marine mammal legislation).

176. Scarff, *supra* note 2, at 613. Although Scarff is referring to the ICNT's predecessor, the Revised Single Negotiating Text (RSNT), U.N. Doc. A/Conf. 62/WP. 8/Rev. 1/pt. 2, *reprinted in* 5 UNCLOS III OR 125 (1976), the provisions are identical in pertinent part to the provisions in the ICNT.

177. Holt, *International Cooperation to Protect the Whales*, OCEANS, July, 1977, at 63, 64. It is unclear whether Holt's comments are based on the ICNT or on the RSNT; however, the provisions he discusses are identical in the two texts. For a

Both situations will undoubtedly occur. The dolphin will best be protected if an international organization establishes minimum conservation standards with each coastal State retaining the right to impose more stringent regulations within its own EEZ.

The ICNT also contains a special provision for the regulation of highly migratory species, including all species of marine dolphin. Coastal States whose citizens fish such species have a duty to cooperate with other States to ensure conservation of the species and to participate in an appropriate international conservation organization.¹⁷⁸ The balance between the sovereignty of the coastal State and the authority of the international organization is as yet unsettled.¹⁷⁹ Again, the welfare of the dolphin may be best served if the regulations of an international organization set a minimum standard of conservation while allowing each State to impose more stringent standards within its EEZ.

Conservation Efforts by Individual States

Dolphin conservation measures undertaken by foreign governments are extremely limited. Of the States involved in the ETP tuna fishery, only the United States has conducted any equipment or behavioral research on the tuna-dolphin problem. In the devel-

full discussion of the possibilities of inconsistent application of provisions left within the discretion of the coastal State, see Mirvahabi, *Significant Fishery Management Issues in the Law of the Sea Conference: Illusions and Realities*, 15 SAN DIEGO L. REV. 493, 508-10 (1978). The United States advocates clarification of the ICNT to indicate that each State has an obligation to impose regulations at least as stringent as those contemplated by the ICNT. Richardson, *Introduction*, 16 SAN DIEGO L. REV. 451, 457 (1979).

178. ICNT, art. 64(1), U.N. Doc. A/Conf. 62/WP. 10, reprinted in 8 UNCLOS III OR 1, and in 16 INT'L LEGAL MATERIALS 1108 (1977). See Richardson, *Introduction*, 16 SAN DIEGO L. REV. 451, 457 (1979).

179. The United States' position gives more authority to the international organization than does the proposal of Australia and New Zealand, which stresses the rights of the coastal State. Taft, *The Third United Nations Law of the Sea Conference: Major Unresolved Fisheries Issues*, 14 COLUM. J. TRANSNAT'L L. 112, 115 (1975). This observation is based on documents that preceded the ICNT, but the balance between the international organization and the coastal State is still not clearly defined, see ICNT, art. 64(1), U.N. Doc. A/Conf. 62/WP. 10, reprinted in 8 UNCLOS III OR 1, and in 16 INT'L LEGAL MATERIALS 1108 (1977), and recognition of the traditional opposing positions may be helpful in appreciating the tension involved in the issue. Past attempts by international organizations to be active in fishery management have failed for lack of enforcement power, adequate funding, and capacity for scientific research. Mirvahabi, *Significant Fishery Management Issues in the Law of the Sea Conference: Illusions and Realities*, 15 SAN DIEGO L. REV. 493, 513 (1978).

oping States the limited research resources have been directed toward other goals. In more developed States the dolphin problem has not been of great concern, perhaps because of the relatively minor roles these States play in the fishery.¹⁸⁰ The only data contribution has come from Canada, which has placed field technicians on its vessels to record dolphin mortality data since 1974.¹⁸¹

Most States involved in the ETP fishery have no legislation dealing with the dolphin problem in the tuna fishery.¹⁸² Costa Rica, France, Guatemala, Mexico, and the Netherlands Antilles have laws that recognize the problem and advocate conservation measures, but such laws are not incorporated in comprehensive conservation schemes and are merely token policy statements.¹⁸³

Purse-seining is the only economically efficient means of harvesting tuna in most of the ETP.¹⁸⁴ No efficient alternatives are available, and it is highly improbable that all States involved

180. IATTC Background Paper, *supra* note 26, at 66.

181. Progress of Research 1975, *supra* note 43, at 7.

182. IATTC Background Paper, *supra* note 26, at 15. These States include Bermuda, Canada, Chile, Colombia, Ecuador, El Salvador, Honduras, Japan, Nicaragua, Panama, Peru, Senegal, Spain, and Venezuela. *Id.* The government of New Zealand has recently enacted the Marine Mammals Protection Act 1978 (on file with the *San Diego Law Review*). The Act is a comprehensive piece of legislation that attempts to protect all marine mammals within New Zealand or New Zealand fisheries waters. *Id.* § 1(3)(a). The Act requires a permit for the taking of any marine mammal including dolphin taken in the purse-seine fishery. *Id.* § 4. However, showing that the death or injury of a marine mammal was "accidental" constitutes a defense to any action brought under the Act if the offender meets certain reporting requirements. *Id.* § 24(3). This legislation is the first action taken by any State, other than the United States, to provide comprehensive protection for marine mammals; its general scope and complexity parallel that of the MMPA. The government of Spain has recently indicated that it is studying various provisions similar to those of the United States for protecting marine mammals. 43 Fed. Reg. 40,025 (1978).

183. IATTC Background Paper, *supra* note 26, at 15-16. Costa Rica—Article 9 of an Order of January 11, 1949, prohibits fishing or hunting for any species of dolphin and requires that they be returned to the sea alive if inadvertently caught. France—Article 1 of an Order of October 20, 1970, prohibits the kill, pursuit, or capture, by any means, even without intent to harm any of the marine mammals caught incidentally in the ETP tuna fishery. Guatemala—Articles 1 & 3 of an Order of January 13, 1973, prohibit hunting for the bottlenose dolphin, and Article 4 requires that when caught incidentally in fishing operations they must be returned to the sea immediately. Mexico—A presidential decree dated October 26, 1967, prohibits the capture of marine mammals in the Gulf of California. Letters, dated October 21, 1976, from the Secretaria de Industria y Comercio request that the directors of the Oficinas de Pesca in Ensenada, Cape San Lucas, and Mazatlan inform the holders of tuna fishing licenses (1) that all dolphin caught during purse-seining for tuna must be released immediately, (2) that estimates of the number killed must be reported, and (3) that the presence of dolphin-saving devices on each boat must be reported. Netherlands Antilles—The Nature Conservation Act, art. 24, para. 1, of the Netherlands prohibits the catching or killing of bottlenose dolphins. *Id.*

184. IATTC Background Paper, *supra* note 26, at 38. Japan, South Korea, and

would be willing to prohibit purse-seining on dolphin. The United States' control of a large percentage of the yellowfin market coupled with the import restrictions of the MMPA may play a major role in encouraging other States to implement dolphin conservation programs.

When Mexico was exempted from the import restrictions it had expressed its intent to place fishery technicians, trained in San Diego, California, on its seiners to collect marine mammal mortality and sighting data and to instruct the skippers and crews as to the latest developments in dolphin rescue equipment and techniques.¹⁸⁵ When the NMFS exempted Nicaragua it knew that Nicaragua would participate in the IATTC international tuna-dolphin research and observer program. Nicaragua was also considering taking advantage of the United States' offer to assist in training Nicaraguan observers.¹⁸⁶ Prior to exemption, Panama¹⁸⁷ and Costa Rica¹⁸⁸ also agreed to participate in the IATTC program and to send two biologists apiece to San Diego, California, for the NMFS observer training program.

The Bermudian government agreed to allow observers, Bermudian or international, aboard its vessels upon request before the vessels were exempted. The Bermudian government also obtained agreements from the vessel owners that more detailed dolphin logbooks would be kept and that observers would be allowed upon the vessels.¹⁸⁹ Venezuela informed its vessel operators that they must conduct fishing operations in accordance with United States law and that they must follow all dolphin release procedures required of United States operators. Although Venezuela has no immediate plans for observers, agreements have been secured from all vessel owners that all Venezuelan flag vessels will be available for inspection by United States technicians in Panama and that any deficiencies in required equipment will be corrected. The Venezuelan government placed these requirements on Venezuelan vessels in conformance with its policy of protecting the environment, flora, and fauna, which included the

Taiwan conduct some longline fishing operations, but production is slow and economically marginal. *Id.*

185. 42 Fed. Reg. 56,617 (1977). This program was to be developed even prior to the implementation of the IATTC program. *Id.*

186. *Id.* at 64,121.

187. 43 Fed. Reg. 1093 (1978).

188. *Id.* at 5521.

189. *Id.* at 3566.

recent establishment of a Ministry of the Environment and Renewable Natural Resources. Yellowfin exports from Venezuela to the United States were banned from January 1, 1978, to July 20, 1978, when they were exempted from the United States' import restrictions.¹⁹⁰

The governments of the Congo, New Zealand, Senegal, and Spain have informed their vessel operators that they must fish in accordance with United States law and follow the dolphin release procedures required of United States operators. None of these States has any immediate plans for placing observers upon its vessels. The NMFS exempted New Zealand from the import restrictions in August, 1978,¹⁹¹ and the Congo, Senegal, and Spain in September, 1978.¹⁹² In addition, the government of Senegal assured the United States that its vessels would be available for inspection by United States technicians when possible. Senegal went further than any other State to date in volunteering to be bound by the United States' quotas and to cease setting on any species for which the quotas have been reached.¹⁹³

Participation of International Organizations in Dolphin Conservation

The tuna-dolphin problem is an international issue. Many States are involved in the fishery, and both the tuna and the dolphin migrate between the juridical zones of different States and into and from international waters.¹⁹⁴ As of this writing, the United States is the State most actively involved in control of incidental dolphin mortality. The possibility of other States instigating unilateral conservation measures could result in conflicts in the absence of a coordinating international organization.¹⁹⁵ The necessary means for international cooperation are relatively undeveloped.¹⁹⁶

The Food and Agriculture Organization of the
United Nations

The Advisory Committee on Marine Resource Research of the

190. *Id.* at 31,144, 31,145.

191. *Id.* at 36,263.

192. *Id.* at 40,025.

193. *Id.*

194. IATTC Background Paper, *supra* note 26, at 9.

195. *Id.* at 71.

196. Mammals in the Seas, *supra* note 13, at 36. Such international coordination has to date been limited to the activities of special scientific groups within the International Whaling Commission, the International Union for the Conservation of Nature, and a few specialized "Associations." *Id.*

Food and Agriculture Organization of the United Nations (FAO/ACMRR) sponsored the work of the *Ad Hoc* Group II (Small Cetaceans and Sirenians), which produced a comprehensive report on marine mammals in 1976.¹⁹⁷ This report categorized the four species of dolphin primarily involved in the ETP tuna fishery as in urgent need of population assessment.¹⁹⁸ Of these the ETP stock of spotted dolphin was considered an especially critical problem.¹⁹⁹ Research indicated that the minimum estimate of incidental kill of this species is tentatively at or near the increase capacity of the present stock size.²⁰⁰ Greater exploitation rates of the past inevitably reduced the stock from its original size.²⁰¹ The annual kill rate for the spinner dolphin is even higher,²⁰² and the net production of the species is still unknown. The population of eastern spinners is, however, assumed to be declining.²⁰³

The FAO report acknowledged the technological advances acquired by the United States' research and conceded that absolute prevention of the kill by proscribing the fishing method would not be feasible because of economic consequences and international complexities. The solution to the problem, as seen by the FAO, is the development of new techniques for releasing the dolphin unharmed from the seines.²⁰⁴

The FAO advocates an expanded comprehensive program of international research on the small cetaceans and sirenians before the problems of their conservation become large-scale battles of conflicting public interests. The means for the necessary international cooperation are admittedly non-existent and in need of study.²⁰⁵ The FAO's program is to be concentrated on the species and on the kinds of research that need most immediate attention. The International Union for the Conservation of Nature (IUCN)

197. *Id.*

198. *Id.* at 5. Species so categorized included the spinner, striped, spotted, and common dolphin. *Id.*

199. *Id.* at 6.

200. *Id.* at 11. The annual incidental exploitation rate (catch/stock) was estimated as 1.6 to 4.2%. The natural rate of increase has been calculated as between -2.5 to 6.6% per annum, with a most likely value between 1.6 and 4.0%. *Id.*

201. *Id.*

202. *Id.* at 13. The annual incidental exploitation rate for spinners was estimated to be between 2.4 and 8.1%. *Id.*

203. *Id.*

204. *Id.* at 26.

205. *Id.* at 35-36.

Whale Group, the Small Cetacean Subcommittee of the Scientific Committee of the International Whaling Commission, and Group II of ACMRR agree that among the projects most urgently needed are detailed studies of the spinner, spotted, striped, and common dolphin.²⁰⁶

The FAO program is purportedly designed to cure the gaps and deficiencies in existing research programs. The FAO report notes several deficiencies in the current United States research program and the need for international integration of the development of technological research tools. Problems of reliability of the catch data exist for several reasons: (1) the catch is not landed, (2) essentially only the United States' fishery is sampled, (3) only the Commission Yellowfin Regulatory Area (CYRA)²⁰⁷ is sampled, and (4) it is assumed that dolphin mortality on vessels with observers is representative of that on vessels without observers. Other problems exist with the reliability of data obtained from the fishery, which is used as a basis for evaluating the entire population regarding such factors as age and sex composition.²⁰⁸

After making these evaluations of the problem, the current research, and the objectives, the FAO proposed two international workshops: one on age-determination methods²⁰⁹ and one on female cetacean reproductive data.²¹⁰ These workshops may act as inroads in international scientific cooperation on how to study the dolphin, but they fall far short of an attempt at international cooperation to protect and conserve them.

The International Whaling Commission

Many of the whaling States signed the International Whaling Convention²¹¹ in 1946. The International Whaling Commission (IWC) was established when the Convention came into effect on December 10, 1948.²¹² The function of the IWC is the management of whale populations for the protection of both the whale species and the whaling interests.²¹³ A scientific Committee composed of

206. *Id.* at 60.

207. *See* note 222 *infra*.

208. *Mammals in the Seas*, *supra* note 13, at 61.

209. *Id.* at 74.

210. *Id.* at 77.

211. International Convention for the Regulation of Whaling with Schedule of Whaling Regulations, *done* Dec. 2, 1946, 62 Stat. 1716, T.I.A.S. No. 1849, 161 U.N.T.S. 72.

212. As of January, 1978, members include Argentina, Australia, Brazil, Canada, Denmark, France, Iceland, Japan, Mexico, the Netherlands, New Zealand, Norway, Panama, South Africa, the Soviet Union, Great Britain, and the United States. Panama gave notice of withdrawal on November 16, 1977, effective June 30, 1978. *TREATIES IN FORCE*, *supra* note 158, at 382.

213. Clark, *Whales: Time for a Fresh Start*, 65 *NEW SCIENTIST* 206, 207 (1975).

recognized world authorities on assessment of whale populations from the member States advises the IWC.²¹⁴ Based on this advice the IWC publishes a schedule which specifies protected species, whaling seasons, closed waters and sanctuary areas, size limitations, methods of whaling, quotas, permitted equipment, and other information and requirements necessary for effective whale management.²¹⁵

The IWC has consistently rejected the imposition of an absolute moratorium on commercial whaling.²¹⁶ The United States and Great Britain have repeatedly advocated such a moratorium, while the Soviet Union and Japan have repeatedly opposed it.²¹⁷ The IWC rejected a blanket moratorium as inconsistent with its policy of management of the species and stock levels. However, the IWC did call for an International Decade of Cetacean Research in 1972.²¹⁸

While the IWC's primary concern has been with protection of the large cetaceans, its emphasis has recently been shifting to the smaller cetaceans. In April, 1974, the Subcommittee on Small Cetaceans of the IWC's Scientific Committee reviewed the biology, geographical subdivisions, and fisheries status of each species of the smaller cetaceans.²¹⁹ The Subcommittee produced a detailed scientific report that provided the first comprehensive analysis of international data on the smaller cetaceans.²²⁰

At the 1976 meeting of the IWC, the Small Cetaceans Subcommittee urged that the IWC assume management of all cetaceans taken deliberately for their own value.²²¹ Such a step would extend the IWC's involvement into many dolphin and porpoise fisheries. The IWC also adopted a resolution requiring member

214. *Is the Whale Doomed?*, AUSTL. FISHERIES, June, 1975, at 12, 13.

215. International Convention for the Regulation of Whaling with Schedule of Whaling Regulations, art. 5, done Dec. 2, 1946, 62 Stat. 1716, T.I.A.S. No. 1849, 161 U.N.T.S. 72.

216. The IWC first rejected the recommendation of the delegates of the Conference on the Human Environment, held in Stockholm, who proposed a 10-year moratorium on all commercial whaling in 1972. *No Whaling Moratorium, but Quota System Set*, 102 SCI. NEWS 23, 23 (1972). The moratorium, advocated again by the United States at the IWC's 1975 meeting, was again rejected. 41 Fed. Reg. 30,152, 30,153 (1976).

217. *No Whaling Moratorium, but Quota System Set*, 102 SCI. NEWS 23, 23 (1972).

218. *Is the Whale Doomed?*, AUSTL. FISHERIES, June, 1975, at 12, 14.

219. Martin, *Foreword*, 32 J. FISHERIES RESEARCH BOARD CAN. 879 (1975).

220. *Smaller Cetaceans*, note 3 *supra*.

221. Scarff, *The International Management of Whales, Dolphins, and Porpoises: An Interdisciplinary Assessment* (pt. 1), 6 ECOLOGY L.Q. 323, 374 & n.289 (1977).

nations to report incidental kills of cetaceans in tuna purse-seine and other operations.²²² The IWC may become a reliable and comprehensive source of mortality data, but there are no indications that the IWC will assume a more active management role in future dolphin conservation.

The Inter-American Tropical Tuna Commission (IATTC)

Current multilateral conservation measures consist primarily of agreements concerning specific populations designated by geographical and biological distribution.²²³ In regard to the ETP tuna fishery, it has been suggested that one international organization should manage both the tuna harvest and the dolphin problem. The goals of maximizing the tuna harvest and of minimizing dolphin mortality are potentially conflicting. If both goals are to be attained, each must be pursued with conscious consideration of the other. A balance is more likely to be maintained if one body coordinates the attack on both problems.²²⁴

The IATTC manages the ETP yellowfin fishery under a quota system.²²⁵ This international conservation program has been necessary since 1966 because of heavy exploitation of yellowfin.²²⁶ The IATTC's tuna-conservation regulations tend to increase fishing in areas where dolphin-associated tuna predominate in the latter half of the year. In this way the IATTC has acted as an impediment to the reduction of incidental dolphin mortality.²²⁷ As

222. Progress of Research 1976, *supra* note 113, at 7.

223. Schaefer, *Some Recent Developments Concerning Fishing and the Conservation of the Living Resources of the High Seas*, 7 SAN DIEGO L. REV. 371, 379 (1970).

224. IATTC Background Paper, *supra* note 26, at 9.

225. FEIS, *supra* note 11, at 23. The IATTC operates under the authority and direction of a convention originally entered into by Costa Rica and the United States. Convention for the Establishment of an Inter-American Tropical Tuna Commission, *done* May 31, 1949, [1950] 1 U.S.T. 230, T.I.A.S. No. 2044, 80 U.N.T.S. 3. The Convention, which came into force in 1950, is open to adherence by other governments whose nationals fish for tropical tunas in the ETP. Under this provision Panama adhered in 1953, Ecuador in 1961, Mexico in 1964, Canada in 1968, Japan in 1970, and France and Nicaragua in 1973. In 1967 Ecuador gave notice of its intention to withdraw from the Commission, which became effective in 1968. Annual Report of the Inter-American Tropical Tuna Commission for 1977, at 7 (1978) (on file with the *San Diego Law Review*). Mexico gave notice of its intention to withdraw on November 8, 1977, effective November 8, 1978. TREATIES IN FORCE, *supra* note 158, at 300.

226. Annual Report of the Inter-American Tropical Tuna Commission for 1977, at 16 (1978) (on file with the *San Diego Law Review*). The conservation program applies within the Commission Yellowfin Regulatory Area (CYRA), which is defined as the area bounded on the east by the North and South Americas and on the west by 125° longitude between 40°N and 20°N latitude, 120°W longitude between 20°N and 5°N latitude, 110°W longitude between 50°N and 10°S latitude, and by 90°W longitude between 10°S and 30°S latitude. *Id.* at 118.

227. Progress of Research 1976, *supra* note 113, at 5.

of 1975 the IATTC's only contribution to the resolution of the dolphin problem was an additional 1,000-ton allocation of the IATTC quota to the United States for the purpose of equipment research in the Commission Yellowfin Regulatory Area (CYRA) during 1975. The IATTC renewed this research allocation for 1976. Discussions favorable to the possibility of a mutual observer program began. The IATTC passed a resolution that supported joint agreements between the Commission and any State desiring to conduct research on the tuna-dolphin problem.²²⁸ The IATTC called upon its Director of Investigations to prepare a report on the necessary research; that report was submitted at the October, 1976, meeting.²²⁹

At its 1976 annual meeting, the IATTC called for a comprehensive technical review of existing information pertaining to the tuna-dolphin problem and for the preparation of a detailed proposal for IATTC dolphin research.²³⁰ At that time the Commission agreed upon three objectives: to strive to maintain a high level of tuna production, to maintain dolphin stocks at or above levels that assure their survival in perpetuity, and to make every reasonable effort to avoid needless or careless killing of dolphin.²³¹ Although the second objective could be fulfilled at population levels less than those that result in maximum net productivity, the goal of the NMFS under the MMPA, the third objective may result in larger population sizes than the second objective demands.²³² It cannot yet be determined whether the objectives and policies of the IATTC will conflict with those of the United States on this issue.

The report prepared for the 1977 meeting indicated that the IATTC should be the international organization to take full responsibility for dolphin management in the ETP tuna fishery.²³³

228. 41 Fed. Reg. 30,152, 30,159 (1976).

229. IATTC Background Paper, *supra* note 26, at 21. The title of that report is *The Tuna-Porpoise Relationship and the IATTC. Id.*

230. 42 Fed. Reg. 38,982, 38,990 (1977).

231. IATTC Background Paper, *supra* note 26, at 4-5. The Commission chose these objectives instead of the extreme positions that it would do nothing, believing that there was no problem or that if there was it would be resolved by the industry itself, by actions of individual States, or by another organization; or that it would attempt to protect all dolphin in the ETP from the possibility of death caused by the fishery either by imposing an immediate ban on all purse-seining on dolphin or by phasing out the procedure. *Id.* at 24.

232. *Id.* at 8.

233. *Id.* at 9.

The report also emphasized the economic health of the fishery. It stated that changes in fishing technology not only must protect the dolphin but must reward the fishermen as well. The developments in United States equipment research have fulfilled both criteria.²³⁴

The report further delineated four focal elements for any serious effort to reduce dolphin mortality: (1) It should be international in scope, (2) all vessels should be equipped with the best dolphin-saving equipment currently available, (3) the fishermen, especially the skippers, should be well-trained in dolphin-saving techniques and highly motivated to use them, and (4) some system should exist to ensure that the proper equipment is fished in the correct manner.²³⁵ In conclusion, the report advocated the use of observers aboard non-United States vessels to allow additional biological data to be gathered²³⁶ and to eliminate the uncertainty in estimating kill rates for non-United States vessels.²³⁷

In June, 1977, the IATTC reviewed this proposal. It unanimously passed a resolution to fund an international dolphin research and observer program that would include workshops and seminars to evaluate and disseminate dolphin-saving techniques and equipment technology. This program will provide new data on the mortality rates of the non-United States fleet and could result in the reduction of those rates such that the aggregate mortality would not increase in direct proportion to the increased fishing efforts.²³⁸ This resolution further provided for the inclusion of non-member States operating in the ETP fishery. Implementation of this resolution by IATTC member States played a significant role in their subsequent exemption from United States import restrictions.²³⁹

If the IATTC proves to be an efficient management vehicle for the implementation of dolphin-protection programs in the ETP fishery, the Commission involved in management of the Atlantic

234. *Id.* at 39.

235. *Id.* at 50.

236. *Id.* at 78. The use of observers would result in data from vessels that fish on dolphin-associated tuna inside the CYRA during the latter half of the year. United States vessels do not fish at this time and place. *Id.*

237. *Id.* Kill rates for non-United States vessels have previously been assumed to be the same as for United States vessels. *Id.*

238. FEIS, *supra* note 11, at 48-49.

239. 42 Fed. Reg. 54,294, 54,294-95 (1977). For the full text of the resolution, see Annual Report of the Inter-American Tropical Tuna Commission for 1977, at 8-9 (1978) (on file with the *San Diego Law Review*). All members of the IATTC were represented at the meeting except for France, which later cabled approval of the resolution. Observers from Bermuda, Colombia, Ecuador, Honduras, Italy, and Peru were also present. *Id.*

tuna fishery could assume similar responsibility.²⁴⁰ Because the practice of purse-seining on dolphin in the Atlantic is as yet less developed and widespread than in the Pacific, an opportunity exists for conservation measures to precede an urgent situation created by the expanding practice of purse-seining on dolphin.²⁴¹

The Responsibility of the United States in International Programs

Whatever action is taken by other States and international organizations, the responsibility of the United States in formulation and enforcement of a global protection program is undeniable. The MMPA imposes an obligation on the Department of State to initiate negotiations for the development of bilateral and multilateral agreements with other States for the protection and conservation of all marine mammals covered by the Act.²⁴² This obligation is specifically emphasized with respect to States that engage in fishing operations that are unduly hazardous to marine mammals.²⁴³ In the past such actions have been limited to suggestions and proposals indicative of a passive United States attitude toward global conservation. The possibility of the United States becoming more actively influential in such negotiations by using the MMPA's import-restriction provision, as well as its effect on the success of the IATTC's programs, has been discussed above.

In addition to the moratorium on imported yellowfin under the MMPA, the United States could ban the importation of all tuna-fish products from any State whose nationals fish in a manner that diminishes the effectiveness of an international fishery conservation program under the Pelly amendment.²⁴⁴ The amendment's broad definition of international fishery agreements

240. See International Convention for the Conservation of Atlantic Tunas, *done* May 14, 1966, [1969] 20 U.S.T. 2887, T.I.A.S. No. 6767, 673 U.N.T.S. 63. Current signatories include Brazil, Canada, France, Gabon, Ghana, the Ivory Coast, Japan, South Korea, Morocco, Portugal, Senegal, South Africa, Spain, the United States, and the Soviet Union. TREATIES IN FORCE, *supra* note 158, at 301.

241. See note 13 *supra*.

242. 16 U.S.C. § 1278(a)(1) (1976).

243. *Id.* § 1378(a)(2).

244. 22 U.S.C. § 1978 (1976). The Pelly amendment is part of the Fishermen's Protective Act of 1967, 22 U.S.C. §§ 1971-1979 (1976). It is intended to enhance the effectiveness of international fishery conservation programs.

includes international programs for cetacean conservation.²⁴⁵ Thus, the United States may ban not only all yellowfin imports but all other fish-product imports as well from any State that frustrates the purpose of an international program to protect the dolphin and to reduce their incidental kill in the tuna industry. The invocation of these trade sanctions does not demand that a species or stock be in danger of extinction or that a treaty be violated. The "offending" party need not even be a party to the conservation program it is hindering. The National Oceanic and Atmospheric Administration (NOAA) has used the Pelly amendment to encourage non-IWC States to join the IWC or at least to comply with IWC regulations.²⁴⁶ It could actively be used in connection with the IATTC's attempts to internationalize dolphin protection if the United States decides to accept fully the responsibilities imposed by the MMPA.

A RADICAL GOAL OF DOLPHIN PROTECTION

Given increasingly efficient dolphin-protection technology and a well-coordinated international program, an ecological solution to the problem of dolphin *conservation* may conceivably be found. However, the emotional issue of protecting the *individuals* of the species may never be resolved.²⁴⁷ With regard to cetaceans generally, and dolphin specifically, the concept of individual protection is spreading rapidly. Recognition is increasing that these creatures are different from other animals and that the extent of that difference is as yet undetermined.

Throughout history ocean-going peoples have recognized dolphin in their poetry and folklore. With the development of civilization, however, Man has distinguished himself from other animals on both religious and scientific grounds. Few people question the difference between individual human rights and the types of rights that man bestows on animals. The idea of a dolphin being represented in court claiming the right to freedom from slavery is not generally accepted. Few people, if any, would place the incidental mortality of dolphin in the tuna industry on the same plane with a situation in which several thousand humans died each year because of their involvement in an efficient technique of hunting, fishing, or harvesting.

245. "International fishery conservation program" means any ban, restriction, regulation, or other measure in force pursuant to a multilateral agreement to which the United States is a signatory party, the purpose of which is to conserve or protect the living resources of the sea. *Id.* § 1978(g)(3).

246. Scarff, *supra* note 2, at 604.

247. Pryor & Norris, *supra* note 9, at 37.

A few people, however, believe strongly in the individual rights of cetaceans. They are speaking out more and more frequently. John C. Lilly, M.D.,²⁴⁸ has studied both the biological²⁴⁹ and the behavioral²⁵⁰ evidence that dolphins are intelligent, ethical, and social creatures deserving rights as individuals under our laws. Lilly proposed guidelines for such new laws in 1976, including:

- (1) Cetaceans are no longer to be considered as property, nor as an industrial resource, nor as stocks of animals.
- (2) Cetaceans are to have complete freedom of the waters of the earth.
- (3) Individual dolphins and whales are to be given the legal rights of human individuals. Human individuals and groups are to be given the right to sue in behalf of, or otherwise represent in court, cetacean individuals placed in jeopardy by other humans.²⁵¹

Social and judicial acceptance of these ideas has already begun to be tested. In May, 1977, the individual rights of two Atlantic bottlenose dolphin were asserted by two men who released them from the University of Hawaii Institute of Marine Biology. In January, 1978, the first of these two men, Ken LeVasseur, came to trial on the charge of grand theft. The trial posed the moral and philosophical issue of whether humans have the right to hold in-

248. John C. Lilly, M.D., is a trustee of the Human/Dolphin Foundation and is doing research with minicomputers on communication with dolphin. He is the author of *LILLY ON DOLPHINS: HUMANS OF THE SEA* (1975); *MAN AND DOLPHIN* (1961); and *THE MIND OF THE DOLPHIN* (1967). Lilly, *The Rights of Cetaceans Under Human Laws*, *OCEANS*, Mar., 1976, at 67, 68.

249. Among the biological evidence are the facts that: Man's brain differs from that of apes, his nearest cousins in the size of cerebral cortical "silent" areas in the frontal, parietal, and temporal lobes. These "silent" areas are devoted to central processing, e.g., thinking, imagination, long-term goals, and ethics. Man uses these cortical areas for understanding, justice, compassion, and the need for social interdependence. Recent neurological studies by several scientists show that in cetaceans whose brains are larger than Man's, the additional mass is in the "silent" areas. Recent microscopic analysis of cetacean brains has revealed that their cellular densities and connections are as large and complex as Man's. Brain size is not directly related to body size, and the "silent" areas of the brain are not involved in body movement at all. Lilly, *The Rights of Cetaceans Under Human Laws*, *OCEANS*, Mar., 1976, at 67, 67-68.

250. Behavioral studies indicate that the lives of cetaceans are regulated by a cetacean education and a cetacean ethic. Man is treated as a special case in this system and is not to be injured even under extreme degrees of provocation. Dolphin show an awareness of the needs of their group; the group cares for a sick or grieving dolphin, but if the care interferes with group survival the individual voluntarily stops breathing and thus commits suicide. Dolphin also appear to be very interested in communicating with humans and will reprogram their outputs to solve communication tasks imposed by humans; that is, they will produce sounds in the air audible to humans although their normal mode of communication is by way of underwater vibrations inaudible to humans. *Id.* at 68.

251. *Id.*

telligent creatures like dolphins in captivity.²⁵² This moral issue translated to the legal issue of whether dolphins can be considered intellectually inferior experimental property at all.²⁵³ Greenpeace, a Canadian group devoted to saving whales, issued a declaration of dolphin rights during the trial. The declaration included this: "In the spirit that moved lawmakers to enfranchise first men with property, then men free and white, and finally women, we plead with today's lawmakers to treat generously that intelligence of the sea . . ."²⁵⁴ Judge Masato Doi instructed the jury, however, to treat the dolphin as simple property. Le Vasseur was found guilty.²⁵⁵

The trial of the second man, Steve Sipman, was to begin April 10, 1978.²⁵⁶ However, on his own motion, Judge Masato Doi postponed the prosecution of Sipman indefinitely until the appeal filed on behalf of Le Vasseur is decided. This action bolstered the enthusiasm of Sipman, Le Vasseur, and their attorneys, who are confident that they will win the appeal.²⁵⁷ Both men and their attorneys believe that the law needs to be changed.²⁵⁸

The battles of the conservationists regarding the tuna-fishery problem and of the protectionists advocating individual dolphin rights appear to be separate and distinct. The resolution and even the debate of the individual rights issue must, however, affect the action taken regarding the tuna fishery. Research and regulations currently emphasize the safe release of dolphin but continue to allow intentional pursuit and capture. As the rights of cetaceans, or at least public concern for their well-being, are expanded, this procedure may become intolerable. The mandate for the United States to initiate international dolphin-protection programs will also take on a moral emphasis as respect for the dolphin species increases.

The efforts of conservationists and protectionists could effectively be consolidated in pursuit of the goals of both groups. These goals are not in opposition but merely reflect the difference

252. 199 Sci. 37 (1978).

253. Chapple, *supra* note 5, at 33.

254. 199 Sci. 37 (1978).

255. *Hawaii v. Le Vasseur*, Cr. No. 50322 (Haw. Cir. Ct. Feb. 7, 1978), *appeal filed*, No. 6930 (Haw. Sup. Ct. Feb. 16, 1978). Le Vasseur was sentenced to six months in jail with five years probation but was released on his own recognizance pending appeal. Chapple, *supra* note 5, at 33.

256. Chapple, *supra* note 5, at 33.

257. Telephone interview with John Schweigert, attorney for Ken Le Vasseur (Jan. 26, 1979).

258. Chapple, *supra* note 5, at 33.

in the degree of protection with which each group will be satisfied. The protectionists cannot consistently advocate dolphin individual rights and fail to pursue actively a solution to the tuna-fishery problem that causes the deaths of thousands of dolphin annually. Because the goals of the protectionists are extreme and are not generally accepted, the cause could benefit from the statutory support of the MMPA. Protectionists could emphasize the MMPA definition of "taking," which includes harassment,²⁵⁹ and which the regulations have expanded to include any acts, whether negligent or intentional, that disturb or molest a marine mammal.²⁶⁰ The low kill rates reported for the domestic fleet for 1977 have already diluted public concern regarding the tuna-fishery problem. The conservationists, if they are to succeed in their objectives, must remember the international problem and keep the issue alive by demanding pressure by the United States for effective international regulations. Conservationists may effectively use the publicity and the public emotion generated by the individual rights issue to support their demands for insignificant kill rates for effective international programs.

CONCLUSION

The MMPA has not achieved its goal of reducing incidental dolphin kills by the domestic fleet to an insignificant number approaching zero. Kills have, however, been drastically reduced in 1977 and 1978. Despite the residual domestic problem, this substantial reduction has shifted the emphasis of the problem to a search for an international solution.

The IATTC has accepted responsibility for management of the problem in the ETP yellowfin fishery, but it has not indicated any intent to impose regulations to limit directly the dolphin kill. Although the use of the MMPA's import restrictions has enabled the United States to acquire agreements from many States to fish in accordance with the United States' regulations, the practical effect of these agreements remains unknown. As with all international agreements, the problem of information acquisition inhibits efficient regulation.

The potential role of the United States in formulating an international conservation program is significant because of the eco-

259. 16 U.S.C. § 1362(13) (1976). See note 26 *supra*.

260. 50 C.F.R. § 216.3 (1977).

conomic enforcement mechanisms available through restriction of imports under the MMPA and the Pelly amendment. To date the United States has assumed a conservative role in the international problem and has not implemented the activist involvement policy adopted in the MMPA. Although the problem is increasingly international, the United States has the responsibility of instigating action in the absence of an active international organization. The mechanisms and policy basis for such activism are present; all that is required now is the United States' motivation to pursue an emotional, environmental cause in the face of international economics and politics.

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