Comments

INTERNATIONAL ASPECTS OF THE TUNA-PORPOISE ASSOCIATION PHENOMENON: HOW MUCH PROTECTION FOR POSEIDON'S SACRED MESSENGERS?

The late 1960s and early 1970s represented a period of growing national and international preoccupation with conservation and protection of the environment. Expansion of scientific knowledge created a time of increased awareness and a need for change. Concerned groups and individuals realized the resources of the earth were finite, and scientists wrote articles that warned of potential dangers.[1] Man's failure to preserve resources, such as the International Whaling Commission's[2] virtual inability[3] to protect endangered whale stocks,[4] was a common theme communicated to the world.[5]

---

1. *See generally* Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243 (1968); White, *The Historical Roots of Our Ecological Crisis*, 155 SCIENCE 1203 (1967); Boulding, *The Economics of the Coming Spaceship Earth*, in ENVIRONMENTAL QUALITY IN A GROWING ECONOMY 3 (H. Jarrett ed. 1971); Heller, *Coming To Terms With Growth and the Environment*, in ENERGY, ECONOMIC GROWTH, AND THE ENVIRONMENT 3 (S. Schurr ed. 1972).

2. The International Whaling Commission was created under the terms of the International Convention for the Regulation of Whaling, Dec. 2, 1946 [1948], 62 Stat. 1716, T.I.A.S. No. 1849, 161 U.N.T.S. 72.

3. In explaining the failure of the International Whaling Commission, an advocate of whale conservation has written:

> The scientific committee has advised IWC for years. It has tried to do so intelligently[,] but has always been plagued by inadequate data, and its conservation recommendations have nearly always been ignored, except in those cases involving species so close to extinction as to be of negligible economic importance.

Hill, *Protecting the Whales: Some Progress in IWC, But Problems Remain*, 77 AUDUBON, Sept. 1975, at 105.

4. The species of whales considered endangered are the bowhead whale, *Balaena mysticetus*; right whales, *Eubalaena glacialis, Eubalaena sieboldii*, and *Eubalaena australis*; gray whale, *Eschrichtius robustus*; blue whale, *Balaenoptera musculus*; fin whale, *Balenoptera physalus*; humpback whale, *Megaptera novaengliae*; sei whale, *Balaenoptera borealis*; and sperm whale, *Physeter catodon*. McVay, *Saving the Whales—Any Hint of Hope?*, 73 AUDUBON, Nov. 1971, at 46.

5. *See generally* Barnes, *From IWC, a Glimmer of Hope For Whales*, 76 AUDUBON, Sept. 1974, at 119; Christol, Schmidhauser and Totten, *The Law and the Whale: Current Developments in the International Whaling Controversy*, 8 CASE W. RES. J. INT'L L. 149 (1976); Graves, *The Imperiled Giants*, 150 NATIONAL GEOGRAPHIC 722 (1976); Hill, *Vanishing Giants*, 77 AUDUBON, Jan. 1975, at 56; Hill, *Protecting the*

In the United States, Congress drafted legislation reflecting this concern.[6] The National Environmental Policy Act of 1969[7] demanded a more definite protection of the environment.[8] Another innovative statute was the Marine Mammal Protection Act of 1972.[9] The legislature designed the Act as a safeguard for marine mammals by outlawing their taking,[10] and by banning their importation.[11] Although whales, the largest of the marine mammals, had received protection under previous legislation,[12] other marine mammals now received much needed protection.[13]

These legislative efforts by Congress to protect our environment have caused seemingly insurmountable problems. Administrative agencies, industries, and courts have begun to realize that these statutes, passed without thorough consideration of economic and biological factors, could have disastrous financial effects on industry. An example of these effects is the application of the Marine Mammal Protection Act to the commercial fishing industry, and specifically to the fishing techniques employed by the tuna industry. Tuna fishermen rely on herds of porpoise, which are marine mammals, to help them

---

Whales: Some Progress in IWC, But Problems Remain, 77 AUDUBON, Sept. 1975, at 105; McVay, *Saving the Whales—Any Hint of Hope?*, 73 AUDUBON, Nov. 1971, at 46; Note, *Legal Aspects of the International Whaling Controversy: Will Jonah Swallow the Whales?*, 8 N.Y.U. J. INT'L L. & POL. 211 (1975); *The Audubon View: A Boycott to Save the Whales*, 76 AUDUBON, July 1974, at 120.

6. *E.g.*, Noise Control Act of 1972, 42 U.S.C. §§ 4901-4918 (Supp. V 1975); Federal Energy Administration Act, 15 U.S.C. §§ 761-786 (Supp. V 1975); Endangered Species Act of 1973, 16 U.S.C. §§ 1531-1543 (Supp. V 1975). This list is only representative of numerous legislative attempts to control and protect the environment.

7. 42 U.S.C. §§ 4331, 4331-4335, 4341-4347, 4361 (1970).

8. For example, the terms of the National Environmental Protection Act state:

> The Congress authorizes and directs that, to the fullest extent possible: (1) the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in this chapter, ...

Id. § 4332(1), and:

> (c) The Congress recognizes that each person should enjoy a healthful environment and that each person has a responsibility to contribute to the preservation and enhancement of the environment.

Id. § 4331(2)(c).

9. 16 U.S.C. §§ 1361-1362, 1371-1384, 1401-1407 (Supp. V. 1975).

10. *Id.* § 1371.

11. *Id.* § 1372.

12. Eight species of whales were placed on the Endangered Species List under the provisions of the Endangered Species Act of 1973, 16 U.S.C. §§ 1531-1543. Representatives of 53 countries attending the United Nations Conference on the Human Environment in 1972 agreed to a ten year moratorium on the taking of whales. *The Audubon View: A Boycott to Save the Whales*, 76 AUDUBON, July 1974, at 120.

13. 16 U.S.C. §§ 1361, 1371-1375.

locate and catch yellowfin tuna.[14] When fishermen surround a herd of porpoise and the attendant school of tuna with their fishing net, usually at least a few porpoise become entangled in the net and suffocate.[15] Originally, the tuna industry received a two-year exemption from the total moratorium imposed by the Marine Mammal Protection Act and gained subsequent extensions for an additional three years.[16]

This Comment will discuss why unilateral attempts by the United States to protect porpoise may not be feasible, and why the best solution may be through the use of an existing international convention.

I. SCIENTIFIC AND TECHNICAL BACKGROUND

Recent technological developments have caused a significant expansion of the tuna industry. In the 1950s the principal method of fishing for tuna in the eastern Pacific Ocean was baitfishing.[17] A few

14. *See generally* Jordan, *Porpoises and Purse Seines*, 7 OCEANS, May 1974, at 6 [hereinafter cited as Jordan]; Minasian, *The Dolphin-Tuna Controversy*, 28 PACIFIC DISCOVERY, Jan./Feb. 1975, at 1; Orr, *The Tuna-Dolphin Problem*, 29 PACIFIC DISCOVERY, Jan./Feb. 1976, at 1; Perrin, *The Porpoise and the Tuna*, 14 SEA FRONTIERS, May/June 1968, at 166 [hereinafter cited as Perrin, *The Porpoise and the Tuna*]; Perrin, *Using Porpoise to Catch Tuna*, 18 WORLD FISHING, June 1969, at 42 [hereinafter cited as Perrin, *Using Porpoise to Catch Tuna* ; Reeves, *The Porpoise-Tuna Connection*, 220 NATION 624 [hereinafter cited as Reeves]; Reiger, *Tuna Enforcement Down, Porpoise Slaughter Up*, 77 AUDUBON, Nov. 1975, at 120.

15. *See* note 14 *supra*.

16. Comm. For Humane Legislation, Inc. v. Richardson, 414 F.Supp. 297 (D. D.C. 1976), *rev'd*, 540 F.2d 1141 (D.C. Cir. 1976).

17. *The Tuna-Porpoise Relationship and the Inter-American Tropical Tuna Commission* 2 (unpublished background paper prepared by the Inter-American Tropical Tuna Commission, c/o Scripps Institution of Oceanography, La Jolla, California, for the annual Inter-American Tropical Tuna Commission meeting in Managua, Nicaragua, on Oct. 1976) [hereinafter cited as *The Tuna-Porpoise Relationship*]. In discussing the purpose of the paper, its author explains:

> The U.S. Marine Mammals [sic] Protection Act referred to previously directs the United States Government to seek, through negotiations within the IATTC, the cooperation of other governments in reducing porpoise mortality to the maximum extent feasible. The U.S. Commissioners to the IATTC have sought such cooperation and have requested to the Commission to initiate its own program aimed at reducing porpoise mortality. In response to these U.S. efforts, the Commission at its 1975 meeting in Washington, D.C., instructed the Director of Investigations to prepare a report dealing with [the] porpoise mortality problem to be presented at its 1976 meeting in Managua, Nicaragua. This Document is in response to those instructions.

The Tuna-Porpoise Relationship, supra, at 3.

The baitfishing method, still used by some United States fishermen, is described by another author as follows:

> Baitfish are kept alive aboard baitboats and, when a school of tuna is located, they are thrown overboard a few at a time to keep the tunas near the vessel, while fishing is conducted with artificial lures. When the fish will not bite at the artificial lures fishing is sometimes conducted with live baitfish attached to hooks. In the eastern Pacific Ocean the tuna fishermen usually

fishermen employed small nets[18] constructed of cotton, but these nets were heavy, and thus clumsy to haul by hand.[19] Additionally, the cotton fiber was weak and tore frequently.[20] In the 1960s nylon nets, which are stronger and lighter than the older cotton nets, were introduced into the industry.[21] The development of the power block[22] also enabled fishermen to haul the nylon nets as long as 500 fathoms.[23] These large nets are referred to as "purse seine" nets, because they draw together at the bottom similar to a draw-string purse. Of the three methods of fishing practiced by fishermen in the eastern Pacific,[24] purse seining is the most efficient. Widespread use of these larger nets has led to an increase in the tuna catch,[25] the acquisition of larger boats, and the development of the tuna industry to a position of national importance.[26] This improved method of fishing has also allowed fishermen to take advantage of the tuna-porpoise association phenomenon.

> catch their own bait with lampara nets, though in some cases they buy it from purse-seine fishermen who fish only for bait species . . . . To be suitable for tuna bait a fish must occur fairly close to the tuna fishing grounds, be catchable in large numbers, survive well aboard the fishing vessels, and be attractive to the tunas when they are used. Most fish meeting these qualifications belong to the herring (Clupeidae) and anchovy (Engraulidae) families.

Bayliff, *Organization, Functions, and Achievements of the Inter-American Tropical Tuna Commission*, 7-8 (unpublished Special Report No. 1 prepared for the Inter-American Tropical Tuna Commission, c/o Scripps Institution of Oceanography, La Jolla, California, 1975) [hereinafter cited as Bayliff].

The Inter-American Tropical Tuna Commission maintains its office and library in La Jolla, California, at the Scripps Institution of Oceanography. Considerable information documents covering all aspects of the Inter-American Tropical Tuna Commission are available at this location.

18. *The Tuna-Porpoise Relationship, supra* note 17, at 1.

19. *Id.*

20. *Id.*

21. *Id.*

22. *Id.*

23. A net 500 fathoms long would be 3,000 feet in length. Perrin, *Using Porpoise to Catch Tuna, supra* note 14, at 45.

24. In addition to purse seining and baitfishing, longlining is used by the Japanese. One author describes the technique as follows:

> Imagine lengths of quarter-inch rope suspended from a series of buoys and stretching fifty miles across the sea's surface. From such long lines the Japanese have learned to suspend multiple sections, each with more than 1500 baited hooks, each hook on a line of its own that reaches 200 feet deep into dark waters where it is left to be swallowed by the larger tuna that swim there.

Cole, *The Vanishing Tuna*, 238 ATLANTIC MONTHLY, Dec. 1976, at 49.

25. As early as 1903, tuna canneries in San Pedro, California, produced 17,000 cans of tuna. In 1975, canneries located in San Diego and San Pedro, California; Puerto Rico; American Samoa; Cambridge, Maryland; and Hawaii produced 1.5 billion cans of tuna. Tuna canned in the United States was valued at over $820 million in 1975. *The Economic Impact of the United States Tuna Industry*, 1975 (pamphlet available from American Tunaboat Association, 1 Tuna Lane, San Diego, California).

26. In 1957, the United States tuna fleet consisted of 230 boats with a total carrying capacity of 47,300 short tons. By August, 1975, although the tuna fleet had dropped in

A. The Association Phenomenon

For reasons unknown to scientists,[27] herds of porpoise[28] and schools of yellowfin tuna[29] swim together in the eastern Pacific. Porpoise swim near the surface because, as mammals, they must breathe air. The schools of tuna, swimming deeper in the water, follow beneath and behind the porpoise.[30]

Tuna fishermen use this tuna-porpoise association to locate

---

size to 192 boats, their total carrying capacity was 120,653 short tons. A new boat may cost as much as $5 million and have a carrying capacity of 2,000 short tons. The replacement value of the United States tuna fleet is approximately $500 million.

Tuna canneries employ over 10,000 people, who produce 64% of all United States canned fishery products and 46% of all United States processed fish and shellfish. In addition, the tuna fleet directly employs 6,800 people, and indirectly employs ship builders, gear and other suppliers, longshoremen and warehousemen, thus bringing the total to approximately 28,000 people. In terms of dollars, the tuna industry has a financial impact of over $207.5 million annually. *Id.*

27. No one knows why the shoaling yellowfins . . . are attracted to the air-breathing cetaceans [porpoise]. Some scientists speculate that locating food is involved in the relationship; others think predator detection may be the primary reason for the association. However, tuna can occasionally be found faithfully gathered beneath a floating log or a patch of seaweed, so their motivation may be something as unlikely as a bit of shade or some noisy mammalian company.

Reeves, *supra* note 14, at 625. However, Perrin, a biologist for the United States Bureau of Commercial Fisheries, Fishery-Oceanography Center (now National Marine Fisheries Service, Southwest Fisheries Center) La Jolla, California, suggests a different reason for the association of fish to floating objects and correspondingly to the shallow swimming porpoise:

> Tuna also associate with freely drifting objects, such as logs, seaweed and dead whales . . . . Tuna fishermen take advantage of this association and set their nets around floating objects to catch the fish near them. Sometimes a battery-powered light beacon is attached to a particularly productive piece of flotsam and the boat may follow it for several days, periodically harvesting the tuna. Dr. John Hunter at the U.S. Bureau of Commercial Fisheries . . . concluded that a possible basis for the association is that the floating object furnishes the fish with a visual stimulus for spatial orientation in the optical void of the pelagic environment.

Perrin, *The Porpoise and the Tuna, supra* note 14, at 172-74.

28. The four species of porpoise most commonly associated with tuna are the spotted porpoise, *Stenella attenuata*; spinner porpoise, *Stenella longirostris*; striped porpoise, *Stenella coeruleoalba*; and the common dolphin, *Delphinus delphis*. The Tuna-Porpoise Relationship: Research, Management, and Possible IATTC Role 1 app. (unpublished background paper prepared by the Scientific Commission of the Inter-American Tropical Tuna Commission, c/o Scripps Institution of Oceanography, La Jolla, California, for the 34th meeting of the Inter-American Tropical Tuna Commission in San Diego, California, in June, 1977) [hereinafter cited as *Research, Management, and Possible IATTC Role*].

These porpoise must not be confused with the species *Tursiops truncatus*, commonly known as bottlenose dolphins, which are usually seen performing in aquariums and marine life parks.

29. *Thunnus albacares*.

30. Reiger, *First the Whales . . . Now the Porpoise?*, 12 NATIONAL WILDLIFE, Feb./Mar. 1974, at 19.

schools of tuna.[31] A lookout will watch for surfacing porpoise on the horizon.[32] When the porpoise are located, two or more outboard motorboats[33] are launched from the fishing vessel to herd the porpoise and the tuna swimming beneath them into a compact group.[34] It is essential that the porpoise be kept together,[35] because if even a few porpoise escape, the tuna may follow.[36]

When the porpoise are contained, a net skiff is launched from the fishing vessel.[37] This boat, with the net attached, circles the porpoise and the tuna surrounding them with a curtain of net nearly 500 fathoms in circumference and 45 to 50 fathoms deep.[38] The net then is drawn together at the bottom, trapping both tuna and porpoise inside.[39] Some of the frightened porpoise dive below the surface seeking an escape,[40] or simply sink to the bottom of the net in frustration.[41] If their fins or noses catch in the net, they will be unable to reach the surface of the water for air, and they will suffocate. If there is a strong current, the net may "roll up", trapping some of the porpoise in its folds.[42] In

31. *Id.*

32. The fishermen spot porpoise schools at the horizon with high-powered binoculars . . . . While the boat is on the tuna grounds, a constant "spotting watch" is kept during daylight, with crewmen rotating the duty. In addition, a lookout with less powerful binoculars is posted in the crow's nest.

Feeding schools often can be detected over the horizon by sighting the birds (terns, boobies, and frigate birds) which gather over them. When a school of porpoise, with or without birds is sighted, the boat runs up on it while the lookouts scan it for signs of fish. If the lookouts spot numerous "jumpers" (feeding fish breaking the surface), "shine" (flashes of reflected light from fish below the surface), or see a "blackspot" (dense school of fish below the surface), the boat prepares to set. If no fish signs are seen, the captain may still decide to set, gambling on the presence of fish.

Perrin, *Using Porpoise to Catch Tuna, supra* note 14, at 44.

33. These boats are known as pongos. *Id.*

34. *Id.*

35. Fishermen may purposely pass up a school of tuna swimming in association with the whitebelly porpoise, also called the common dolphin. They frequently dive under the net before it is drawn closed, leading the tuna to freedom. Jordan, *supra* note 14, at 6.

36. Minasian, *The Dolphin-Tuna Controversy*, 28 PACIFIC DISCOVERY, Jan./Feb. 1975, at 2.

37. *Id.*

38. Perrin, *Using Porpoise to Catch Tuna, supra* note 14, at 45. Such a net would be 3,000 feet in circumference and 270 to 300 feet deep.

39. Reeves, *supra* note 14, at 625.

40. Minasian, *The Dolphin-Tuna Controversy*, 28 PACIFIC DISCOVERY, Jan./Feb. 1975, at 2.

41. *Hearings Before Dep't of Com. Admin. Law Judge Vanderheyden*, Doc. No. MMPAH-2-1976 (San Diego, California, Nov. 23, 1976).

42. Additionally, porpoise may roll up in the net if the circling fish below them cause a circular current, or vortex. Perrin, *Using Porpoise to Catch Tuna, supra* note 14, at 45.

1971, an estimated 312,000 porpoise were killed or injured as a side effect of this purse seine method of fishing.[43]

B. Modified Techniques and Gear

United States fishermen have reduced porpoise mortality by improvements in fishing techniques and gear.[44] The most effective technique developed is the "backing down" procedure.[45] Under this procedure, when the net is set around the porpoise and tuna, the captain orders the boat to be backed astern, dragging the net into an elongated shape.[46] The far edge of the net is forced under the surface of the water, allowing the porpoise to escape over the top.[47]

An important refinement to this technique employs a rubber raft.[48] During the back down, a fisherman on a rubber raft positions himself within the net circle. He looks down into the net by means of a window in the raft. In this manner, he is able to locate porpoise lying at the bottom of the net. He then signals the captain to wait until the porpoise surface for air, and when the porpoise surface, fishermen assist them in escaping over the top of the net.[49]

---

43. *Hearings on Oversight of the Marine Mammal Protection Act of 1972 Before the Subcomm. on Fisheries and Wildlife Conservation and the Environment of the House Comm. on Merchant Marine and Fisheries*, 94th Cong., 1st Sess., ser. 94-16, at 28 (1975).

44. Estimates of porpoise mortalities made by the National Marine Fisheries Service are: in 1971: 311,000; in 1972: 308,000; in 1973: 179,000; in 1974: 98,000; in 1975: 134,000. *Tuna-Porpoise Relationship, supra* note 17, at 2. The 1976 quota set by the National Marine Fisheries Service was 78,000, which was reached on October 21, 1976. The Motor Vessels Theresa Ann v. Richardson, 9 ERC 1726, 1728 (1977).

45. Perrin, *Using Porpoise to Catch Tuna, supra* note 14, at 45. Perrin explains:

> The backing down operation does not always run smoothly. A strong current or a vortex created by a large school of fish swimming in a circle can cause the net to close up. When this happens, a large number of porpoise may become entangled in a loose fold of the net and "roll up". The heavy weight pocket thus created may split the net, and, at best, the pocket must be hauled aboard and the porpoise removed one by one. Sometimes the weight is too much for the power block to handle, and the contents of the net must be dumped. . . . A very large school of dying fish also is a danger to the net and can shorten the time that can be spent helping the porpoise to escape.

46. *Research, Management, and Possible IATTC Role, supra* note 28, at 7.

47. *Id.*

48. *Id.* at 49-50 app.

49. The importance of this procedure was described at administrative hearings held in San Diego, California. Researchers know that a porpoise in captivity, if unable to master a complex new trick, will sink to the bottom of his pool in frustration. He will either turn his belly up or "hang" in a vertical position, appearing to be dead. Since he must breath air to survive, he will eventually rise to the surface. A wild porpoise who finds himself in a purse seine net may behave in the same manner. A vigilant fisherman, located on a rubber raft, who understands this behavior pattern can signal to the captain to wait until all frustrated porpoise have surfaced and can be helped from the net. If the porpoise is left in the bottom of the net until the tuna catch is hauled into the boat, he will become entangled in the net and suffocate. In the past many porpoise have died this way, because fishermen did not realize the porpoise were still alive. *Hearings Before Dep't of*

The "Medina panel", developed by tunaboat Captain Harold Medina,[50] is the most important gear modification. The panel is located at the top center of the net, below the corkline over which the escaping porpoise will pass. Because the panel is constructed of a finer mesh,[51] it will not entangle escaping porpoise. Efforts to perfect the design of the Medina panel continue.[52]

II. A UNILATERAL ATTEMPT BY THE UNITED STATES TO REDUCE PORPOISE MORTALITY

The Marine Mammal Protection Act of 1972[53] (MMPA) was enacted by Congress in an attempt to reduce porpoise mortality[54] and to protect other marine mammals.[55] Congress found this protection and conservation to be "necessary to insure the continuing availability" of certain marine animal products which move in interstate commerce.[56] Congress reasoned that the protection and preservation of marine mammals is important to the overall balance of the ecosystem.[57] Only if marine mammals were to receive the protection necessary to main-

---

Com. Admin. Law Judge Vanderheyden, Doc. No. MMPAH-2-1976 (San Diego, California, Nov. 23, 1976).

50. Jordan, *supra* note 14, at 6.

51. 50 C.F.R. § 216.24(d)(2)(iv)(A)(1976) describes the specifications for the porpoise safety panel (Medina panel) as follows:

> The porpoise safety panel shall be installed so as to protect the entire perimeter of the backdown aera [sic] from the cutboard end of the number three cork bunching line to the tiedown point. This panel must be a minimum of 100 fathoms in length, except that the minimum length of the panel in nets deeper than 10 strips shall be determined at a ratio of 10 fathoms in length for each strip that the net is deep. . . . The porpoise safety panel shall consist of small mesh webbing not to exceed 2 [inch] stretch mesh, extending from the corkline downward to a minimum depth equivalent to one strip of 100 meshes of 4¼ [inch] stretch mesh webbing . . . .

52. A newer version utilizing 1 1/4 inch mesh is named the *Bold Contender* after the fishing vessel which first used it. *Hearings Before Dep't of Com. Admin. Law Judge Vanderheyden*, Doc. No. MMPAH-2-1976 (San Diego, California, Nov. 23, 1976).

53. 16 U.S.C. §§ 1361-1362, 1371-1384, 1401-1407 (Supp. V 1975).

54. *See Id.* § 1361.

55. The term "marine mammal" means any mammal which (A) is morphologically adapted to the marine environment (including sea otters and members of the orders Sirenia, Pinnipedia and Cetacea [this is the order of whales, in which porpoise are included]), or (B) primarily inhabits the marine environment (such as the polar bear) . . . .

Id. § 1362(5)(A)-(B).

56. The Congress finds that marine mammals and marine mammal products either—

> (A) move in interstate commerce, or
> (B) affect the balance of marine ecosystems in a manner which is important to other animals and animal products which move in interstate commerce, and that the protection and conservation of marine mammals is therefore necessary to insure the continuing availability of those products which move in interstate commerce . . . .

Id. § 1361(5)(A)-(B).

57. *See Id.* § 1361.

tain their numbers at an optimum sustainable population,[58] could other marine animals living in the same environment be maintained at, or near, the same optimum level.[59]

Congress identified two methods in which porpoise must be protected. The most important was the regulation of United States fishing boats, and fishing techniques and gear.[60] By encouraging research into porpoise behavior and the development of modified techniques and gear, Congress believed porpoise mortalities could be curtailed.[61] The second method was to enlist international cooperation for the protection of the porpoise.[62]

A. Regulation of United States Vessels and Gear

Section 1371 of the MMPA imposed a moratorium on the taking of all marine mammals, but with several exceptions.[63] The most controversial exception was that allowed for commercial fishing.[64] This exception gave fishermen a twenty-four month period in which to reduce the number of marine mammals killed or injured incidental to fishing operations. The suggested goal was to reduce the number of injuries and deaths to "insignificant levels approaching zero."[65]

The exception to the moratorium expired on October 21, 1974, at which time porpoise deaths and injuries had not declined to "insignificant levels approaching zero." Consequently, the Secretary of Commerce granted fishermen a general permit effective until December 31, 1975.[66] Under section 1374 of the MMPA, the Secretary was authorized to issue such a permit provided certain conditions[67] were met,

58. The term "optimum sustainable population" means, with respect to any population stock, the number of animals which will result in the maximum productivity of the population or the species, 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).

59. *Id.* § 1361(5).

60. *Id.* §§ 1371(a)(2), 1373-1374, 1381.

61. *Id.* § 1381(a).

62. *Id.* §§ 1361(4), 1378, 1381(c), 1383.

63. *Id.* § 1371.

64. *Id.* § 1371(a)(2).

65. *Id.*

66. Comm. For Humane Legislation, Inc. v. Richardson, 414 F.Supp. 297, 304 (1976).

67. When determining whether to issue a permit as provided by section 1374, the Secretary must make his/her decision in conformity with any regulations he/she has formulated in accordance with the terms of section 1373. 16 U.S.C. § 1374(b)(1). Section 1373(a) reads as follows:

> The Secretary, on the basis of the best scientific evidence available . . . , shall prescribe such regulations with respect to the taking . . . of marine mammals . . . as he/she deems necessary and appropriate to insure that such taking will not be to the disadvantage of those species . . . .

including a determination of "the number and kind of animals which are authorized to be taken."[68] This permit allowed fishermen to "take" porpoise incidental to commercial fishing, subject only to the use of modified techniques and gear.[69] Techniques required, as of the date the permit was issued on October 21, 1974, were those employed in the backdown procedure,[70] including the use of speedboats to guide the direction of the drift of the net.[71] The items of gear required were the speedboats, equipped with towing bridles and lines,[72] and the Medina panel,[73] equipped with markers at each end[74] and hand holds along its length.[75] Recently, the rubber raft became mandatory on all fishing vessels.[76]

The Committee for Humane Legislation, Inc. objected to the Secretary's issuance of the general permit and brought an action in the United States District Court, District of Columbia,[77] arguing that the MMPA requires the Secretary to specify how many porpoise could be killed incidental to fishing operations.[78] The argument was upheld by the court and subsequently affirmed.[79] The court ordered the Secretary of Commerce to publish a quota based on scientific data, stating how many porpoise could be "taken" each time the permit was renewed.[80]

68. *Id.* § 1374(b)(2)(A). In addition, the permit is also required to specify

> the location and manner (which manner must be determined by the Secretary to be humane) in which they may be taken, or from which they may be imported,
>
> (C) the period during which the permit is valid, and
>
> (D) any other terms or conditions which the Secretary deems appropriate.

16 U.S.C. § 1374(b)(2)(B)-(D).

69. Comm. For Humane Legislation, Inc. v. Richardson, 414 F.Supp. 297, 304 (1976).

70. 50 C.F.R. § 216.24(d)(2)(v) states:

> Backdown shall be performed following a net set where marine mammals are captured in the course of utilizing a purse seine for catching and landing yellowfin tuna. Thereafter, other release procedures shall be continued until all live animals have been released from the net. . . . Commencing with backdown and continuing through the sacking up operation, a minimum of two men shall be engaged in hand removal of porpoise from the net. All live porpoise must be removed from the net prior to initiating brailing operations [transferring the tuna into the boat].

71. 50 C.F.R. § 216.24(d)(2)(iv)(E)(iii) and (iv).

72. *Id.* (E)(i).

73. *Id.* (A). *See* note 51 *supra*.

74. 50 C.F.R. § 216.24(d)(2)(iv)(B). These markers enable fishermen to guide porpoise toward that portion of the net in which the Medina panel is installed.

75. *Id.* (C). The handholds along the length of the Medina panel enable fishermen to push the corkline under the water as they assist porpoise over the top.

76. 42 Fed. Reg. 12,012 —.

77. Comm. For Humane Legislation, Inc. v Richardson, 414 F.Supp. 297 (1976).

78. *Id.* at 299.

79. Comm. For Humane Legislation, Inc. v. Richardson, 540 F.2d 1141 (1976).

80. Comm. For Humane Legislation, Inc. v. Richardson, 414 F.Supp. 297, 312 (1976).

Although researchers and scientists, under the direction of the National Marine Fisheries Service,[81] had studied porpoise behavior in conjunction with attempts to modify gear and techniques, many questions remained.[82] Neither the exact role of the porpoise in the marine ecosystem,[83] nor the extent of porpoise populations had been determined.[84] Without this information it was difficult to identify the optimum sustainable population[85] as required by section 1361(6) of the MMPA.

---

81. The MMPA requires that the Secretary of Commerce initiate . . . a program of research and development for the purpose of devising improved fishing methods and gear so as to reduce to the maximum extent practicable the incidental taking of marine mammals in connection with commercial fishing.

16 U.S.C. § 1381(a).

82. The research to date directed toward stock assessment has consisted almost entirely of estimation of the current population size of each major stock of porpoise, the numbers of individuals of each stock incidentally killed by the fishery each year, the rates of reproduction, and the rates of natural mortality. . . . [B]ecause there is a considerable amount of uncertainty associated with the estimates of population size, incidental mortality due to fishing, and rates of reproduction and natural mortality, the data can be interpreted in various ways. . . . Accordingly, the biological research program should be continued to try to improve the estimates upon which the stock assessments are based.

Research, Management, and Possible IATTC Role, supra note 28, at 5-6.

83. Unfortunately, at this stage of human evolution, man's powers are great in comparison to his meager understanding of the fundamental and inescapable functioning of ecosystems . . . . The virtue of the ecosystem concept is that we are made to see the general in the particular. Only a wider understanding of ecology, especially as acquired through knowledge of ecosystems, may permit man not to return to nature but to manage his affairs so as to produce liveable human environments.

Bradley, *Analyzing Human and General Ecosystems*, 2 ENVIRONMENTAL AFFAIRS 303, 312 (1972).

One eminent scientist, however, expresses little doubt in proposing the following:

> I am surprised how little we have considered the possibilities of a strong response to competitors when some population is fished. I believe that such responses are very real. For example, perhaps we stimulated the porpoise population by our heavy harvesting of yellowfin tuna and similar fish over the last several decades. It is conceivable that they are in symbiotic relationship, but they ostensibly are in direct competition, judging by behavior—porpoise feeding above and tuna feeding below on the same assemblage. If one looks at it this way, it is perhaps most inadvisable to spend our substance trying to understand how you get the yellowfin tuna out from underneath this competitor without damaging it. If the yellowfin tuna could speak, I would think it might well say: "What do you stupid people think you are doing? We already are in an almost hopeless position with the profligate air breathing creature that takes all our food and now you are trying to figure out how you can take us from under them without hurting them. We'll be totally overwhelmed."

Isaacs, *Some Ideas and Frustrations About Fishery Science*, 18 CAL. COOPERATIVE OCEANIC FISHERIES INVESTIGATIONS REP., May 1, 1976, at 34.

84. *See* Comm. For Humane Legislation v. Richardson, 540 F.2d 1141 (1976).

85. Conservation cannot be accomplished in respect to a stock of fish unless certain scientific facts are known. These include the rate of recruitment to the fish stock, its rate of growth, the rate of natural mortality and the rate of fishing mortality. These facts need to be in hand and understood before either the point (or area) of maximum sustainable physical yield or of maximum net economic yield can be calculated.

Chapman, *The Theory and Practice of International Fishery Development-Management*, 7 SAN DIEGO L. REV. 408, 442-43 (1970).

The 1976 quota forced United States fishermen to stop fishing for tuna in October.[86] The proposed quota for 1977 made fishing for tuna in association with porpoise virtually impossible,[87] and the United States tuna fleet refused to sail. The 1977 permit, which was not issued until April,[88] was modified subsequently to reflect a quota somewhat more acceptable to the fishermen.[89] Nevertheless, when the fishing vessels finally left for fishing grounds, many bore delinquent mortgages. Moreover, local economy had suffered irreversable losses.[90]

Frustrated by this sequence of events, vessel owners began to consider the re-registration of their vessels under foreign flags.[91]

86. The Motor Vessels Theresa Ann v. Richardson, 9 ERC 1726, 1728 (1977).

87. Originally the National Marine Fisheries Service set the quota at 29,920 porpoise. That number was further broken down into individual quotas to be applied to each species of porpoise found swimming in association with tuna. *Id.* Fishermen argued that the individual quotas placed an unreasonable hardship on their fishing operations. Porpoise swim in mixed schools, and the different species are difficult for fishermen to distinguish except at a very close range. The fishermen feared they might inadvertently set their nets on a species such as the Fraser's dolphin, Risso's dolphin, rough-toothed dolphin, or short-finned pilot whale, for which the total proposed quota was five each, and as a result, face the penalties outlined in sections 1375 and 1376 of the MMPA. *Hearings Before Dep't of Com. Admin. Law Judge Vanderheyden*, Doc. No. MMPAH-2-1976 (San Diego, California, Nov. 23, 1976).

88. Motor Vessels Theresa Ann v. Richardson, 9 ERC 1726, 1728 (1977).

89. The National Marine Fisheries Service agreed to set the quota at 59,050. This number allowed for the accidental taking of 43,000 offshore spotted porpoise, 7,840 whitebelly spinners, and the remaining 8,120 were divided among other species. The new figure still did not allow for the taking of any eastern spinner porpoise, or the setting of nets around any schools containing this species. ***Research, Management, and Possible IATTC Role, supra*** note 28. However, fishermen decided to resume fishing after Department of Commerce Secretary Juanita Kreps assured them that the agency would only take action against fishermen who intentionally set their nets around eastern spinner porpoise. She stated, " 'Penalties will not be imposed for the accidental taking of small numbers,'. . . ." San Diego Union, Apr. 28, 1977, § A, at 1, col. 6.

90. While fishermen, porpoise conservationists, politicians and federal officials wrangled in Washington, D.C., for three months over how to catch tuna without accidentally killing porpoise, at least $64 million was lost from the economy.

Of that, more than $50 million was lost because U.S. fishermen were not catching fish and hence not selling it to U.S. canners.

Much of that would have filtered into San Diego's economy through the fishermen, repair firms, equipment dealers, mortgage payments, suppliers, fuel dealers and others.

But while fishing industry leaders were arguing in the halls of Congress and federal agencies, the foreign tuna fishermen were busy.

They caught and sold U.S. canners tuna that was worth at least $14 million more during the first months of this year than during the same period in 1976. All of these dollars went abroad.

San Diego Union, May 22, 1977, § A, at 1, col. 1.

91. The likelihood of this is suggested, for example, by the following headlines: ***Boats May Sail and Not Return***, San Diego Union, Nov. 14, 1976, § A, at 1, col. 7; ***Owners Plan Foreign Registry***, San Diego Union, Feb. 25, 1977, § A, at 1, col. 7; ***Sales Negotiations Believed In Progress on 23 Tunaboats***, San Diego Union, Mar. 15, 1977, § B, at 1, col. 3; ***Mexico, Arab Bids For Tuna Fleet Bared***, San Diego Union, Apr. 9,

Whether foreign flag fishing vessels having United States owners will be exempted from the terms of the MMPA is uncertain. Language in the statute suggests that any vessel subject to United States jurisdiction will be prosecuted for taking marine mammals in violation of its terms.[92] The prevailing rule of international law is that the law of the vessel's flag will be applied.[93] When faced with this question, the court in *Committee for Humane Legislation, Inc. v. Richardson*[94] speculated that United States owned, but foreign registered vessels would be prosecuted. The court cited as its authority *Lauritzen v. Larsen*,[95] a landmark case involving an action brought by an injured Danish seaman under the Jones Act. In that case the Court used a balancing test which required that the Court look beyond the vessel's flag in order to protect seamen.[96] This is but one of a few situations in which courts will look beyond the flag of the vessel and apply United States law.[97] In the present instance it is likely that a court would not find the interests at stake sufficiently compelling to justify the extraordinary extension of jurisdiction to fishing vessels registered under foreign flags.

1977, § B, at 1, col. 7; *Mexico Offers Aid to U.S. Tunaboats*, San Diego Union, Apr. 14, 1977, § A, at 10, col. 1; and *Firm Seeks Transfer of 8 U.S. Tunaboats To Other Countries*, San Diego Union, Apr. 22, 1977, § A, at 1, col. 7.

92. Except as provided in sections 1371, 1373, 1374, 1381, and 1383 of this title, it is unlawful—

(1) for . . . any vessel or other conveyance subject to the jurisdiction of the United States to take any marine mammal on the high seas . . . .

16 U.S.C. § 1372(a).

93. Ships shall sail under the flag of one state only and, save in exceptional cases expressly provided for in international treaties . . . , shall be subject to its exclusive jurisdiction on the high seas.

The Convention on the High Seas, *done* April 29, 1958, art. 6, para. 1, 450 U.N.T.S. 82.

94. 414 F.Supp. 297, 312 (1976).

95. 345 U.S. 571 (1953).

96. [U]ntil recent times[,] . . . the nationality of the ship was that of its owners. But it is common knowledge that in recent years a practice has grown, particularly among American shipowners, to avoid stringent shipping laws by seeking foreign registration eagerly offered by some countries. Confronted with such operations, our courts on occasion have pressed beyond the formalities of more or less nominal foreign registration to enforce against American shipowners the obligations which our law places upon them.

Id. at 587.

An example of the United States Supreme Court's looking beyond the flag of the vessel is *Hellenic Lines v. Rhoditis*, 398 U.S. 306 (1970). Despite the fact that the Hellenic Hero was a Greek flag vessel and the seaman was a Greek citizen employed under a Greek contract, the Court allowed recovery to the seaman under the Jones Act, 42 U.S.C. § 688, because the owner of 95 percent of the stock of Hellenic Lines had lived in the United States since 1945, the corporation's largest office was in New York, all voyages of the corporation's ships began or ended in the United States, and the injury occurred in the territorial waters of the United States.

97. In *United States v. Anchor Line, Ltd.*, 232 F.Supp. 379 (1964), the court believed the issue was whether a foreign flag vessel's actions "affect our foreign commerce directly and materially." *Id.* at 383.

B. Enlistment of International Cooperation

Congress has recognized that marine mammals are essentially an international resource,[98] and thus require the protection of countries other than the United States. United States fishermen are primarily responsible for the porpoise mortality level;[99] however, the percentage of porpoise killed by United States fishermen is decreasing steadily as other countries increase their fishing activities in the eastern Pacific.[100] Perceiving this situation, Congress included international cooperation as an essential element of its overall plan for the protection of marine mammals.[101]

The terms of the MMPA require the Secretary of Commerce to work toward the formation of international agreements for the protection of marine mammals[102] and to amend any existing treaties which may be in conflict with section 1378 of the MMPA.[103] The subject matter of the MMPA clearly overlaps with the Inter-American Tropical Tuna Commission Convention,[104] which created the Inter-American Tropical Tuna Commission. This Commission is responsible for regulating the taking of the yellowfin tuna that swim in association with

98. [M]arine mammals have proven themselves to be resources of great international significance, esthetic and recreational as well as economic, and it is the sense of the Congress that they should be protected and encouraged to develop to the greatest extent feasible commensurate with sound policies of resource management and that the primary objective of their management should be to maintain the health and stability of the marine ecosystem.

16 U.S.C. § 1361(6).

99. In 1971 approximately 96 percent of porpoise mortalities resulted from fishing techniques employed by United States fishermen. *Tuna-Porpoise Relationship, supra* note 17, at 3.

100. In contrast, fishing activity by United States fishermen in 1976 probably resulted in only 70 percent of the overall "take" of porpoise. *Id.*

101. [N]egotiations should be undertaken immediately to encourage the development of international arrangements for research on, and conservation of, all marine mammals.

16 U.S.C. § 1361(4).

102. The Secretary, through the Secretary of State, shall . . . initiate negotiations as soon as possible with all foreign governments which are engaged in, or which have persons or companies engaged in commercial fishing operations which are found by the Secretary to be unduly harmful to any species of marine mammal, for the purpose of entering into bilateral and multilateral treaties with such countries to protect marine mammals . . . .

Id. § 1378(a)(2).

103. The Secretary, through the Secretary of State, shall . . . initiate the amendment of any existing international treaty for the protection and conservation of any species of marine mammal to which the United States is a party in order to make such a treaty consistent with the purposes and policies of this chapter . . . .

Id. (4).

104. Inter-American Tropical Tuna Commission Convention, May 31, 1949, [1950] 1 U.S.T. 230, T.I.A.S. No. 2044, 80 U.N.T.S. 3 [hereinafter cited as Tuna Commission Convention].

porpoise in the eastern Pacific. Cooperation with this organization would help to reduce further porpoise mortalities.

III. THE FEASIBILITY OF A MULTILATERAL REGULATION OF OF PORPOISE MORTALITY

President Truman issued a fisheries proclamation in 1945[105] which had a substantial effect on fisheries of North, Central, and South America. The proclamation proposed development of conservation zones in areas contiguous to the coastline where the principles of conservation would be applied to all major fishing operations.[106] Within several years Mexico, Argentine, Chile, Panama, Peru, and Costa Rica[107] reacted to the proclamation by claiming jurisdiction over the contiguous seas within 200 miles from their coastlines.[108]

A. Inter-America Tropical Tropical Tuna Commission Convention: Background Information

One consequence of Truman's proclamation was the creation of the Inter-American Tropical Tuna Commission Convention, which was entered into between the United States and Costa Rica in 1950. Originally, it was drafted as an open-ended bilateral agreement,[109] and

105. Proclamation 2668, 3 C.F.R. 68, 59 Stat. 885.

106. G. KNIGHT, THE FUTURE OF INTERNATIONAL FISHERIES MANAGEMENT 2 (1975).

107. *Hearings on Tuna Oversight, Commercial Fisheries, and Brazil Shrimp Agreement Before the Subcomm. on Fisheries and Wildlife Conservation and the Environment of the House Comm. on Merchant Marine and Fisheries*, 93d Cong., 1st. Sess., serv. 93-17, at 6 (1973) [hereinafter cited as *Hearings on Tuna Oversight*].

108. Soon after the Truman Proclamation several Latin American states, especially Chile, Ecuador, and Peru . . . began to develop and apply a theory of the Bioma to justify the extension of jurisdiction over parts of the high seas. In essence, the Bioma is thought of as a huge natural process similar to a hydrological cycle. The process becomes somewhat of an entity consisting of interrelated parts. Organic and inorganic nutrients are lifted from the bottom of the sea by upwelling currents. Plankton and other small marine life thrive upon these nutrients and in turn larger fish feed upon the plankton and other small forms of life. People of the coastal land areas depend heavily upon the fish as a source of food. Moreover guano-producing birds also depend upon the marine life. Coastal people use the guano to enrich the soil and thereby to improve food supplies.

Water vapor arises from the sea, is carried over the land by air currents, condenses and falls as rain. The rain washes organic and inorganic nutrients from the soil, and into rivers which empty into the sea. Filtering down through the water, the nutrients enrich the bottom of the sea[.] And [sic] again upwelling sea currents lift the nutrients which support plankton and small marine life. . . .

Classical international law and the three-mile limit ignore the above process . . . .

Browning, *Inter-American Fisheries Resources—A Need For Cooperation*, 2 TEX. INT'L L. F. 1, 12-14 (1966).

109. Tuna Commission Convention, *supra* note 104.

subsequently Canada, France, Japan, Mexico, Nicaragua, Panama, and Peru became parties to the Convention.[110]

The original purpose of the Convention was to give United States fishermen a right to fish within Costa Rica's 200 mile zone of jurisdiction for anchoveta, which at that time were an important baitfish used by fishermen employing the baitfishing method of taking yellowfin tuna. The anchoveta had been seriously, but not critically, depleted due to improper harvesting controls.[111] The Convention established a scientific commission to address this problem.

The purpose of the Inter-American Tropical Tuna Commission (IATTC) was not only to conduct scientific studies of tuna, billfish, and baitfish,[112] but also to make recommendations to member parties based upon these studies.[113] The IATTC currently supervises studies in the area of fish statistics, tuna and billfish biology, baitfish biology, oceanography and meteorology, and stock assessment.[114] Observations are conducted in the region between the southern border of California and the northern coast of Chile,[115] covering an area twice the size of the continental United States.[116]

---

110. The states which have subsequently joined the [Convention], and their dates of entry, are as follows: Panama, 1953; Ecuador, 1961; Mexico, 1964; Canada, 1968; Japan, 1970; France, 1973; Nicaragua, 1973.

At any date after the expiration of 10 years since the date of entry into force of the Convention (March 3, 1950) any member state may give notice of its intention to withdraw from the Commission, and this withdrawal will become effective 1 year after its receipt by the depository government. Ecuador announced its intention to withdraw in 1967, and this became effective in 1968.

Bayliff, *supra* note 17, at 9.

111. *Hearings on Tuna Oversight, supra* note 107, at 5.

112. The United States of America and the Republic of Costa Rica considering their mutual interest in maintaining the populations of yellowfin and skipjack tuna and other kinds of fish taken by tuna fishing vessels in the eastern Pacific Ocean which by reason of continued use have come to be of common concern, and desiring to cooperate in the gathering and interpretation of factual information to facilitate maintaining the populations of these fishes at a level which will permit maximum sustained catches year after year, have agreed to conclude a Convention for these purposes . . . .

Tuna Commission Convention, *supra* note 104.

113. The Commission shall . . . [r]ecommend from time to time, on the basis of scientific investigations, proposals for joint action by the High Contracting Parties designed to keep the populations of fish covered by this Convention at those levels of abundance which will permit the maximum sustained catch.

Tuna Commission Convention, *supra* note 104, at art. II, para. 5.

114. Studies in the areas of statistics and biology give scientists information concerning tuna, billfish, and baitfish habits and migratory patterns. Oceanographic and meteorological studies impart knowledge of the effects of the environment on the fish. When all information from these areas are combined, scientists can make stock assessments or conclusions of the status of the various stocks. Bayliff, *supra* note 17, at 14.

115. *Hearings on Tuna Oversight, supra* note 107, at 5.

116. *Id.*

The IATTC is unique in that it is the first management commission of an international fishery to be established prior to the development of a critical need.[117] Scientific observations of fish stocks before they become depleted are particularly valuable.[118] Only when scientists have some idea of the optimum sustainable population of the fishery, can they attempt to set regulations and quotas to maintain or establish a maximum sustainable yield figure.[119] If a fishery has been seriously depleted, which is usually the case by the time a convention is established, scientists can only guess at the optimum sustainable population figure.[120]

In conjunction with the IATTC's duty to conduct scientific studies is its duty to make recommendations to member parties.[121] Unlike other commissions, such as the International Whaling Commission, which has only a part-time scientific staff,[122] the IATTC has a full-time staff with special knowledge of tuna biology and related areas.[123] This international body of independent scientists is hired by the IATTC's Director of Investigations.[124]

---

117. Jacobs, *United States Participation in International Fisheries Agreements*, 6 J. MARITIME L. & COM. 471, 492 (1975).

118. FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, THE STATE OF WORLD FISHERIES 4 (1968).

119. The usual expression for this objective is securing maximum sustainable yield, reflecting the goal of providing a recurring long-term source of food from the ocean, based on the renewable resources characteristics of the fishery. Implementing the goal of maximum sustainable yield presents some practical problems, however. First, it is often difficult to define with accuracy the maximum sustainable yield of a given stock because of variations in environmental conditions and other factors. Second, two or more fishery stocks may be closely interrelated and it is sometimes difficult to predict the effect of a particular practice with respect to the catch of one stock on the sustainable yield of another. Third, the objective of producing maximum sustainable yield does not take into consideration the net economic return from the enterprise and, according to some economic theorists, automatically diminishes economic return.

G. KNIGHT, THE FUTURE OF INTERNATIONAL FISHERIES MANAGEMENT 17 (1975).

120. *Id.*

121. *See* note 103 *supra*.

122. According to one source, none of the members of the International Whaling Commission spends more than 10 percent of his time working for the Commission. McVay, *Does the Whale's Magnitude Diminish?—Will He Perish?*, 27 BULL. ATOMIC SCI., Feb. 1971, at 15.

123. Burke, *Aspects of Internal Decision Making Processes of Intergovernmental Fishery Commissions*, 43 WASH. L. REV. 115, 170 (1967).

124. The Commission shall designate a Director of Investigations who shall be technically competent and who shall be responsible to the Commission and may be freely removed by it. Subject to the instruction of the Commission and its approval, the Director of Investigations shall have charge of . . . the appointment and immediate direction of technical and other personnel required for the functions of the Commission . . . .

Tuna Commission Convention, *supra* note 104, art. I, para. 13.

B. The IATTC Decides to Study the Association

At a special meeting in June, 1977, the IATTC resolved to begin studying the tuna-porpoise association phenomenon and its effects on the maximum sustainable yield of the yellowfin tuna in the eastern Pacific.[125] This resolution can be justified under the terms of the Convention which require the IATTC scientists to study "the effects of natural factors"[126] on fish stocks and "analyze information relating to current and past conditions and trends of the population."[127] This language could be interpreted to include study of the tuna-porpoise association, because scientists believe that reduction in porpoise stocks have an effect on tuna populations, and conversely, reduction in tuna stocks effect porpoise populations.[128] Thus, it seems reasonable to conclude that when more tuna are taken, porpoise stocks will increase; and when porpoise are taken, tuna stocks will increase.[129] Because the Convention requires the IATTC to study all the natural factors relating

125. The meeting was held in San Diego, California, on June 27-29, 1977. All member parties except France were represented. Minutes for the 34th Meeting of the IATTC (unpublished document of the Inter-American Tropical Tuna Commission, c/o Scripps Institution of Oceanography, La Jolla, California, dated 15 July 1977, Ref: 8274-154-160) [hereinafter cited as IATTC Minutes]. France subsequently adopted the resolution, which is part of the Minutes, thus creating the unanimity necessary to make the resolution final. Interview with William Bayliff, IATTC Staff Scientist, in La Jolla, California (Aug. 18, 1977).

The resolution provides in part:

Having concluded that the IATTC should undertake activities to evaluate the populations of porpoise in the eastern Pacific Ocean and implement programs designed to reduce to the maximum extent feasible the incidental mortality of porpoise by vessels involved in the fishery for yellowfin tuna in accordance with the Commission's objectives . . . .

IATTC Minutes, *supra*, at V app.

126. The Commission shall perform the following functions and duties:

Make investigations concerning the abundance, biology, biometry, and ecology of yellowfin (*Neothunnus*) and skipjack (*Katsuwonus*) tuna in the waters of the eastern Pacific Ocean fishes by the nationals of the High Contracting Parties, and the kinds of fishes commonly used as bait in the tuna fisheries, especially the anchovetta, and other kinds of fish taken by tuna fishing vessels; and the effects of natural factors and human activities on the abundance of the populations of fishes supporting all these fisheries.

Tuna Commission Convention, *supra* note 104, art. II, para. 1.

127. The Commission shall perform the following functions and duties:

Collect and analyze information relating to current and past conditions and trends of the populations of fishes covered by this Convention.

Tuna Commission Convention, *supra* note 104, art. II, para. 2.

128. If the number of porpoise is increased by protecting them, then the standing stock and potential yield of tuna might be reduced. Likewise, reduction of the tuna stocks might cause the number of porpoise to increase. In fact it has been speculated that since large catches of tuna have been taken in the eastern Pacific the porpoise stocks have become much greater than they were prior to the advent of the tuna fishery. It has also been speculated that with the advent of porpoise fishing and the consequent porpoise mortality the stocks of tuna and their potential yield have increased.

Tuna-Porpoise Relationship, *supra* note 17, at 7.

129. *Id.*; Isaacs, *Some Ideas and Frustrations About Fishery Science*, *supra* note 83.

to tuna populations, and porpoise are an important part of the marine ecosystem of tuna, the IATTC plans to study their behavior as it effects tuna.[130]

The IATTC intends to begin an observer program,[131] similar to the existing program for the United States fishermen under the terms of the MMPA,[132] to assist the scientific staff in gathering. information. The acceptability of this program would be enhanced if the IATTC restricted the purpose of the observations to information gathering. This would differ from the attitude taken toward the MMPA observers, who have come to be regarded as policemen since the porpoise mortality quota was instituted in 1976. Originally there was no objection to their presence because their only function was the gathering of information to assist in gear development.[133]

In addition to observations made aboard tuna vessels and studies conducted by the scientific staff of the IATTC, porpoise and tuna-porpoise association information could be gathered by fishermen in their logs. Fishermen already record valuable information for scientists on tuna behavior and migratory patterns.[134] This practice could be expanded to include the logging of porpoise information as well. This addition of porpoise information to tuna logs was not adopted by the IATTC,[135] but currently United States fishermen are required to keep such logs for the National Marine Fisheries Service.[136] The IATTC

130. IATTC Minutes, *supra* note 125.

131. The Resolution stipulates that the Commission will . . . [r]ecruit and /or select and train scientific technicians from member or non-member nations to collect data from vessels at sea on stocks of porpoise in the eastern Pacific Ocean which can be used to estimate porpoise mortality induced by fishing and to evaluate the effect of this mortality and other factors on porpoise abundance. When requested by any nation, the scientific technician will be of the same nationality as the flag of the vessel.

IATTC Minutes, *supra* note 125, at V app., (b).

132. Furthermore, after timely notice and during the period of research provided in this section, duly authorized agents of the Secretary are hereby empowered to board and to accompany any commercial fishing vessel documented under the laws of the United States, there being space available, on a regular fishing trip for the purpose of conducting research or observing operations in regard to the development of improved fishing methods and gear as authorized by this section.

16 U.S.C. § 1381(d).

133. *Id.*

134. Since 1950, tuna fishermen have collected data under the direction of the IATTC scientific staff. About 95 percent of the fishermen of member parties have kept extensive logs which provide one of the most comprehensive collections of fishery data in the world. *Tuna-Porpoise Relationship, supra* note 17, at 12.

135. *See* IATTC Minutes, *supra* note 125.

136. All certificate holders shall maintain daily logs, in such forms as the Director may prescribe, of all sets in which marine mammals are taken. Such logs must include the location, time, and date of set; weather, and water conditions; estimated number of species of marine mammals upon which set was made; estimated number and species of marine mammals caught; method

might benefit from a similar program to supplement the observer program because the observers will only travel with ten to twenty percent of all fishing voyages.[137]

Two factors should contribute to the acceptability of these additional logging duties to member states and fishermen whose activities are regulated by the IATTC. First, the IATTC records are confidential.[138] This is in contrast to records kept pursuant to the MMPA, which are not confidential and are subject to the Freedom of Information Act.[139] Second, if initially the sole purpose of the logging procedures were to be information gathering rather than regulating porpoise mortality, accurate logging would not conflict with any interest of the fishermen responsible for recording the data. Again, this is in contrast to the clerical duties of United States fishermen regulated by the MMPA, who are required to maintain the very records which might later become the basis of penalties imposed on them. Because of the international scope of the IATTC's operations, a vast amount of information, that would add greatly to current scientific knowledge, could be gathered, providing the logging of porpoise statistics were entrusted to a multinational body.

C. *Satisfying the Terms of the MMPA by the Actions of the IATTC*

The IATTC certainly has the authority to study porpoise populations in the eastern Pacific as they relate to the maximum sustainable yield of tuna. If the IATTC were to undertake such an investigation, a question would be raised as to whether such a study might incidentally satisfy the purposes laid out by Congress in the MMPA.[140] According to the court's interpretation,[141] the primary goal set forth in the MMPA is the protection of marine mammals.[142] However, maintaining the

used to remove marine mammals from net; amount and kind of tuna caught; and an actual count of marine mammals killed and seriously injured, if any, on each set. Such logs shall be subject to inspection at the discretion of the Regional Director, National Marine Fisheries Service, to whom a certificate application was made, or his designated agents.

50 C.F.R. § 216.24 (d)(2)(iii).

137. IATTC Minutes, *supra* note 125, at 9.

138. *Tuna-Porpoise Relationship, supra* note 17, at 12.

139. *Id.*

140. [I]t is the sense of Congress that they [marine mammals] should be protected and encouraged to develop to the greatest extent feasible commensurate with sound policies of resource management[,] and that the primary objective of their management should be to maintain the health and stability of the marine ecosystem. Whenever consistent with this primary objective, it should be the goal to obtain an optimum sustainable population[,] keeping in mind the optimum carrying capacity of the habitat.

16 U.S.C. § 1361(6).

141. Comm. For Humane Legislation, Inc. v. Richardson 414 F.Supp. 297 (1976).

142. The Court finds plaintiff's position more persuasive. The language of the Act itself . . . clearly indicates that Congress enacted the MMPA for one basic

balance within the ecosystem was also stressed by Congress, which recognized that there is too little knowledge available concerning marine mammals to make a firm determination of what should be done.[143] The scientific staff of the IATTC has the ability to conduct an excellent study of the problem. Moreover, the IATTC has access to a larger source of information than does the National Marine Fisheries Service.

There are three important reasons why it is in the best interests of all concerned that every effort be made to vest the IATTC with sole responsibility for the regulation of eastern Pacific tuna fisheries, including any regulation necessary to attain the purposes underlying the MMPA. First, the work done by IATTC could be seriously undermined by unilateral attempts on the part of the United States to regulate porpoise mortalities. For example, if United States fishermen were forbidden to fish for tuna in association with porpoise, they would turn to schools of fish not associated with porpoise.[144] These schools, which consist of smaller yellowfin tuna and skipjack tuna, are found closer to the coastline and are comprised of undersized, immature yellowfin.[145] This action would lead to an eventual drop in the overall yield of the fishery which would cease to operate at its maximum sustainable yield as required under the terms of the Convention[146] and the MMPA.[147]

Second, evidence indicates that porpoise and tuna compete for food.[148] If this is true, then if no porpoise were taken, the tuna would be placed in a relatively disadvantaged position; tuna stocks would decrease,[149] and the resulting overpopulation of porpoise would create an imbalance within the ecosystem. This result would be inconsistent with the MMPA[150] and the Convention.[151] For this reason, further scientific study must be undertaken before it can be determined whether protection of porpoise will promote or inhibit the stability of the ecosystem.[152]

---

purpose: to provide marine mammals, especially porpoise, with necessary and extensive protection against man's activities.

Id. at 306.

143. 16 U.S.C. § 1361(6). For text see *supra* note 140.

144. *Tuna-Porpoise Relationship, supra* note 17, at 5.

145. *Id.*

146. Tuna Commission Convention, *supra* note 104.

147. *See supra* note 56.

146. *Tuna-Porpoise Relationship, supra* note 17, at 7.

149. *Id.*

150. *See supra* note 140.

151. Tuna Commission Convention, *supra* note 104.

152. A teaspoon of living earth contains 5 million bacteria, 20 million fungi, one million protozoa, and 200,000 algae. No living human can predict what vital

Third, if United States regulations are overly restrictive, fishing vessel owners may attempt to re-register under foreign flags in order to escape United States jurisdiction over their activities on the high seas. Not only would this result in the total failure of the implementation of the MMPA, but, in addition, the United States would lose the benefits of a significant industry to foreign control.

IV. CONCLUSION

Proponents who favor a strict construction of the MMPA argue that its purposes will not be satisfied until porpoise mortalities are "reduced to insignificant levels approaching a zero mortality and serious injury rate." Achievement of that goal, which is possible only through international cooperation, would necessitate either an amendment to the Convention or the formation of a new one. Presently, negotiation of such an international agreement would be a virtual impossibility because, other than political incentives, the usual motivation for entering into a fisheries treaty or convention is the serious depletion of the stock to be protected.[153] Where severe economic detriment is involved, nothing short of imminent extinction would induce compliance. Whether the United States could motivate other countries to enter into a convention for some unrelated political reason is beyond the scope of this Comment.

Current circumstances reflect neither depletion of porpoise stocks,[154] nor any economically acceptable method of insuring their protection. Consequently, it is highly unlikely that the United States will ever gain the absolute cooperation of other states in reducing porpoise mortalities to "insignificant levels approaching zero".

Despite the fact that absolute protection of porpoise is probably impossible, IATTC may determine, after scientific studies are con-

> miracles may be locked in this dab of life, this stupendous reservoir of genetic materials that have evolved continuously since the dawn of the earth. For example, molds have existed on earth for about 2 billion years. But only in this century did we unlock the secret of the penicillins, tetracyclines, and other antibiotics from the lowly molds, and thus fashion the most powerful and effective medicines every discovered by man. Medical scientists still wince at the thought that we might have inadvertently wiped out the rhesus monkey, medically, the most important research animal on earth. And who knows what revelations might lie in the cells of the blackback gorilla nesting in his eyrie this moment in the Virunga Mountains of Rwanda? And what might we have learned from the European lion, the first species formally noted (in 80 A.D.) as extinct by the Romans?
>
> When a species is gone, it is gone forever. Nature's genetic chain, billions of years in the making is broken for all time.

Sierra Club v. Morton, 405 U.S. 727, 750-51n.8 (1972).

153. G. KNIGHT, THE FUTURE OF INTERNATIONAL FISHERIES MANAGEMENT, 13-14 (1975).

154. IATTC Minutes, *supra* note 125, at 4.

ducted, that some restrictions are needed on the number of porpoise taken. If the IATTC were to discover that a given porpoise population were essential to maintain the maximum sustainable yield of tuna, this would be a compelling motive for all tuna fishermen to assist in the protection of the porpoise. As further motivation, United States fishermen might agree to exchange their superior knowledge of fishing techniques and improved gear for foreign fishermens' promises to reduce porpoise mortalities.[155] Under such an exchange program, as the techniques and gear of all fishermen improve, porpoise mortality would steadily decrease.

Clearly this solution would compromise the lofty ideals of those concerned over the needless deaths of porpoise. However, some solution must be attempted, "since it is the obligation of each of us to adopt measures to recognize and accept *in its proper value* the right of each creature to live within the ecological framework of our world."[156] Furthermore, practical, economically feasible solutions, made in the best interest of all parties always involve compromise.

Margaret Palmer Gordon

155. The IATTC included study of fishing techniques and gear as a part of its resolution. The members agreed to "plan, coordinate, and conduct workshops and seminars to evaluate and disseminate porpoise-saving techniques and gear technology." IATTC Minutes, *supra* note 125, at V app.(d). The Commissioners from both Canada and Panama stated that fishing vessels flying their flags are equipped with Medina panels. *Id*; at 6. In addition, Costa Rica, France, and Mexico have adopted legislation which protects porpoise. ***Research, Management, and Possible IATTC Role, supra*** note 28, at 15-16.

156. IATTC Minutes, *supra* note 125, at III app.