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CETACEANS: A LITANY OF CAIN

Peter M. Dobra*

I. INTRODUCTION

Can he who has discovered only some of the values of whalebone and whale be said to have discovered the true use of a whale? Can he who slays the elephant for his ivory be said to have seen the elephant? These are petty and accidental uses; just as if a stronger race were to kill us in order to make buttons and flageolets of our bones.¹

Man's attitude toward Cetaceans has not always been predatory. Recent conservationist demands for sea mammal protection should be seen as a rebirth of affection for these singular creatures. The ancients had a more salutary view of their relationship with nature and a particular reverence for their marine counterparts, the Cetaceans. The ancient Greek word for dolphin was closely related to delphis, which translates as "womb."² Dolphins that helped in the catch were fed a fair share by the Greek fishermen. As Pliny the Elder wrote:

[When dolphins] are aware that they have had too strenuous a task for only a single day's pay, they wait there until the following day and are given a feed of bread mash dipped in wine, in addition to the fish. Even if [the fishermen] find [the dolphins] fast in their net, yet they set them at liberty.³

The 2nd century A.D. Greek poet Oppian reported the symbiotic cooperation between man and dolphin:

² Doria, The Dolphin Rider, in Mind in the Waters 33 (J. McIntyre, ed. 1974).
But when the work of capture is happily accomplished, then the dolphins draw near and ask the guerdon of their friendship, even their allotted portion of the spoil. And the fishers deny them not, but gladly give them a share of their successful fishing; for if a man sins against them in his greed, no more are the dolphins his helpers in fishing.4

The hunting of dolphins is immoral . . . for equally with human slaughter the gods abhor the deaths of the monarchs of the deep.5

Since the first Basque whalers of the 14th century, mankind has progressively reduced the whale population from about four million to approximately two million animals.6 The numbers, however, belie the actual tragedy. All of the greater leviathan—the Blue, Fin, Right, Humpback, and Bowhead—have been ruthlessly exploited, some to within four or five percent of their natural levels.7 Given whale sociobiology and ecology, these species may never be able to replenish themselves. With the advent in the twentieth century of such technology as the exploding harpoon and the “factory ship,” as well as the recent use of helicopters and light planes, this killing has reached a frenzy. Biological extinction for several subspecies is an impending reality. While some progress has recently been made by the International Whaling Commission (IWC) to protect such mammals, the Commission’s regulations do not go far enough. Moreover, a new question has arisen as to the protection of smaller Cetaceans, particularly the thousands of porpoise who die each year in the tuna industry’s purse seines8 after having led the fishermen to their prey.9 The design of legal forms which can be effectively used to protect all cetaceans must be found in an investigation of biological, historical, economic, political, legal and ethical considerations.

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1 Id.
2 As cited in Reiger, Dolphins Sacred Porpoises Profane, 77 Audobon 3 (Jan. 1975).
3 Scheffer, The Case for a World Moratorium on Whaling, in Mind in the Waters 229 (J. McIntyre, ed. 1974).
5 Purse seines are cup-like nets with open bottoms. After encircling the fish, the open bottom of the purse seine is drawn closed in the manner of a drawstring purse, trapping the animals inside. Committee for Humane Legislation v. Richardson, 540 F.2d 1141, 1143 (D.C. Cir. 1976).
6 Tuna fishermen sight a particular species of bird which fly above porpoise schools which, in turn, swim above schools of tuna. In casting and drawing their nets or seines about the tuna, fishermen also capture the porpoises, which drown when entangled in the drawn seines.
The other Cetacea comprises approximately seventy-eight species of dolphins, porpoise and whales. Its members are warm-blooded, air-breathing mammals. The whales are divided into two orders: the baleen, which feed on krill and other zooplankton, and the toothed whale, whose diet includes various fish and squid.10

Cetaceans possess highly sophisticated social instincts. They are monogamous and display nurturant and succorant behavior similar to man. Whalers have long taken advantage of this protective instinct by harpooning a baby whale, towing it alive and struggling to shore, and then exterminating the extended family which will follow the baby’s cries.11 There have been many incidents where dead whales taken by ship into port have had entire whale families wait weeks offshore for the dead whale’s return. In captivity, Cetaceans have been diagnosed as suffering from certain “human” maladies such as stomach ulcers, severe depression and psychosis. Bottlenose Dolphins have even been known to commit suicide. Such behavior is strong evidence of an awareness of self. Research by neurophysiologists and behavioral scientists strongly suggests the potential intellect of these beings.

While evolution has developed the capacity of humans to formulate strategies in addressing extreme danger, group aggression and the need for communication, Cetaceans, on the other hand, have become so well adapted to their environment as to render it benign.12 A comparison of the human and the Cetacean brain illustrates this evolutionary divergence. The human brain, which has rapidly increased in size in the last five million years from 450 cubic centimeters to 1300 cubic centimeters, contains three essential structures: the rhinicnode, the limbicnode and superlimbicnode, the latter being enveloped in a neocortical membrane.13 Cetaceans, however, evolved brains the size of modern man’s well over ten million years ago and currently possess all of the neural-structures of man, plus a fourth specialized region called the paralimbicnode.14
Size alone, however, is only one indicator of intelligence. Anatomists have long agreed that complexity of intellect is caused by, or is at least correlative of: (1) the number of layers in the neocortex, (2) the degree of folding of the cortical surface, (3) the general area of the neocortex, (4) the degree of regional specialization and (5) the brain cell patterns of arrangement and communicative facility. Little is known about what consciousness actually is, but there does appear to be at least some relation between high morphological complexity and high levels of abstract and creative thought. If we accept these indications as valid, it appears that Cetaceans may be on an intellectual plane above man. Studies of the Bottlenose Dolphin (Tursiops Truncatus) reveal that dolphins have well-developed lamination and differentiation of the cerebral neocortex, although, as illustrated by its unique paralimbic node, it is specialized and arranged differently than that of man. Dolphins also have a higher neocortical and limbic ratio than man. In tests involving humans suffering brain damage, this ratio has been found to be proportionate to those abilities necessary for self-awareness, such as the capacity to think abstractly. The dolphin brain is luxuriantly enfolded, the larger neocortical surface being more fissurated than the brain of man. Such dense convolution makes for greater potentialities for neuronal communication and complexity.

Differences between the sensory modalities of man and Cetaceans have made it difficult for us to learn each other’s communication systems. Evolving in the absence of a dangerous and hostile envi-

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16 Morgane, The Whale Brain: The Anatomical Basis of Intelligence, in MIND IN THE WATERS 86 (J. McIntyre, ed. 1974) [hereinafter cited as Morgane].
17 See Bunnell, supra note 12, at 57.
18 Id.
19 Id.
20 See Morgane, supra note 15, at 88.
21 Dr. Sterling Bunnell writes of these differences:
  Eyesight in humans is a space-oriented distance-sense, which gives us complex simultaneous information in the form of analogic pictures but has poor time discrimination. Our auditory sense, however, has poor space perception but good time discrimination. Human languages are therefore comprised of fairly simple sounds arranged in elaborate temporal sequences. The Cetacean auditory system is predominantly spatial, like our eyesight, with much simultaneous information and poor time resolution. So dolphin language apparently consists of extremely complex sounds which are perceived as a unit. A whole paragraph's information might be conveyed in one elaborate instantaneous hierglyph. For them to follow our pattern of speech might be almost as difficult as it is for us to study the individual picture frames of a film being run at ordinary speed. It is not surprising then, that captive dolphins at first seem more interested in music than in the human voice. Our music is more similar to their voices than our speech is. Since their echolaction system gives them detailed images of objects in their world, they might even be able to recreate these sounds in their speech and thus directly project images to one another. The possible
Cetacean intelligence has developed in response to demands for increased socialization, attended by highly complex patterns of communication and creative interplay. An analysis using a binary computer language estimates that the number of information bits in a whale song of one-half hour is between one million and one hundred million bits. These songs, which may last for hours and which may be heard by other whales well over one hundred miles away, are sometimes sung, note by note, by different whales in a particular population with varying degrees of personal improvisation and embellishment.

The foregoing biological perspective evidences why halting the destruction of Cetaceans is so singular in its urgency. Although the right to exist of innumerable other species of animals has been imperiled, the case of the Cetaceans is unique. Cetaceans should not be treated as a renewable resource, but rather as a particularly exquisite life form that ought to be more fully understood. They have the potential to offer us much more than the pet food and margarine into which they continue to be processed.

While it cannot be maintained that the intellect of various Cetaceans is superior to that of man, neither can their intellectual inferiority be conclusively demonstrated. Currently, the state of the art in the fields of neurophysics and psychology does not permit definitive calibration of consciousness or creativity without tainting the conclusion with a prejudicial anthropocentrism. Despite the limitations of current scientific proof, the sophisticated social and intellectual qualities of the Cetacean demand protection. Future research may result in man's first communication with a truly alien intelligence. The potential for such an alien encounter on the planet earth should not be ignored.

The succeeding sections concern the legal, political and economic considerations complementary to the ethical imperatives offered above. The explicit policy goal these considerations serve is the significant reduction of man-induced mortality among Cetaceans.

existence of digital language among dolphins is supported by known instances where complex information was transmitted among Cetaceans and also, as Bateson pointed out, by the incomprehensibility of their language to us. Analog emotional communication crosses species barriers fairly easily, while digital communication usually doesn't pass between different linguistic groups of the same species. Dolphin language may in some ways be similar to written Chinese characters, in which analog pictures are given digital functions. Perhaps future computer studies will make their linguistic patterns more recognizable to us.

Id. at 56.

One million bits is approximately the number of bits in Homer's ODYSSEY. C. Sagan, THE COSMIC CONNECTIONS 178 (1973).
III. REGULATORY EFFORTS

A. Whaling Economics: The Need for Regulation

The common sense presumption that the whaling industry, if left to its own devices, would never exterminate its own means of livelihood, has underlain the International Whaling Commission's "regulation" efforts. The presumption is patently false. The peculiar economics of whaling makes it far more remunerative for whalers to hunt the species to extinction, in pursuit of short term economic profit and in disregard of non-pecuniary considerations.

In common property fishery, the depletion cost of each fisherman's catch to the basic resource is not borne by the individual fisherman, but rather by the entire industry. Therefore, the individual fisherman has a vested interest in maximizing his own kill since the resource depletion costs are not internalized. The result is the stimulation of sharp competition between the various whaling countries for a larger share of a finite number of animals.

In the past, fishery economics has been haphazardly applied to the management of whales. However, there are important biological differences between fish and whales which have not been incorporated into the calculus, and have led to depletion rather than management. Fishery economics is characterized by rapidly rising marginal costs as the stock is depleted. Consequently, when stocks drop too low, commercial extinction is reached even though many fish still remain. Most commercial fish also have potentially astronomical reproduction rates which allow the remaining stock to replenish itself in a few years or less. In contrast, the marginal revenue from catching certain species of whales exceeds the marginal cost, even at extremely low stock levels. The low marginal cost of the actual taking of a whale is the result of the capital intensive nature of whaling. An inordinately high percentage of the cost of whaling relates to the building of ships and their positioning at the whaling sites. Once the ships are built and at sea, the cost of catching any one whale is minimal, thereby making the worth of each whale

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24 See Scarf-part 2, supra note 22, at 582.

25 Id. at 583.
disproportionately high.\textsuperscript{28} The result is the present situation, where the over-capitalized whaling fleets of Japan and the USSR incur little additional costs in meeting their quotas, and simultaneously exert pressure for higher quotas in order to obtain increasing marginal profits.

The fact that the whale's reproductive cycle differs from that of commercial fish also results in pressure to hunt the whale to extinction. The male Sperm Whale does not reach sexual maturity until nearly twenty years of age. Females bear only one calf at a time and not more frequently than once every two years.\textsuperscript{27} This causes the present consumptive value of the whale to exceed the discounted future value of the whale and all its progeny. It has been estimated that the net recruitment rate, or the rate at which the whale population would naturally reproduce and grow, is about half the amount necessary to make a future kill as profitable as a current one.\textsuperscript{28} The profit from a current kill can be invested at a rate of return in other sectors of the economy much higher than the comparable rate of return resulting from the conservation of present stocks in anticipation of larger future kills. Of course, other variables also influence the formula,\textsuperscript{29} but the net result is a situation where it is economically advantageous to sustain high kill rates of whales, even though these rates will lead to the whale's biological extinction.

\textbf{B. International Regulation Efforts}

1. Efforts of the International Whaling Commission

In 1924 the League of Nations created a Committee of International Law whose chairman reported in 1925 that the whaling industry was "rapidly exterminating the whale."\textsuperscript{30} The first attempt to regulate the taking of Cetaceans was the Whaling Convention of 1931\textsuperscript{31} which proved to be utterly ineffectual. What the Convention did provide, however, was a centralized bank for information about whales.\textsuperscript{32}

The International Whaling Commission (IWC), which currently

\textsuperscript{28} Id.
\textsuperscript{26} Clark, \textit{Profit Maximization and the Extinction of Species}, 81 J. Pol. Econ. 950 (1972).
\textsuperscript{29} Id.
\textsuperscript{32} Id.
has international jurisdiction over the whale, had its genesis in the Whaling Convention of 1946.\textsuperscript{33} The Convention of 1946, however, failed to provide the IWC with any enforcement procedures. Moreover, the IWC was entrusted with the task of promoting the interests of the whaling nations and to "provide for the proper conservation of whale stocks,"\textsuperscript{34} two duties which have proved to be mutually exclusive. In practice, the IWC has served in the role of spokesman for whaling interests. For example, the Japanese representatives have been routinely selected by and from whaling company candidates. From 1961 to 1964 a delegate hand-picked by those supporting whaling interests served out Japan's term as chairman of the IWC.\textsuperscript{35}

The IWC has proved ineffective in preventing the continued depletion of whales. The Baleen Whales have been the most ruthlessly hunted because their feeding and migratory patterns are strictly prescribed by the high summer concentrations of zooplankton in the polar regions.\textsuperscript{36} Their activities are therefore easily predicted by the hunter. The toothed whales' irregular habits have saved them, until recently, from the systematic extermination suffered by the Baleen.

The complexity of whale ecology has never been fully incorporated into those IWC calculations which have been used to set kill quotas. The quotas have proven to be mere licenses for the virtual extinguishment of several whale subspecies. For example, the Blue Whale, the largest creature to ever have existed on the face of the earth,\textsuperscript{37} has been reduced in number from approximately 100,000 in the year 1900 to between 600 and 3000 today.

The IWC's initial regulation for the taking of whales depended on the calculation of whale capture based on the scientifically unsound Blue Whale Unit (BWU).\textsuperscript{38} The limits imposed on each whaling company were set in BWU's which, in 1944, equaled one Blue Whale, two Fins, or two and one-half Humpback or Sei Whales.\textsuperscript{39} Instead of protecting endangered species, these quotas simply enabled whalers to indiscriminately hunt in one geographic area, killing

\textsuperscript{34} Christol et al., The Law and the Whale, 8 CASE W. RES. J. INT'L L. 157 (1976) [hereinafter cited as Christol et al.].
\textsuperscript{35} Id.
\textsuperscript{36} Gulland, Distribution and Abundance of Whales in Relation to Basic Productivity, in THE WHALE PROBLEM 27 (W. Scherill, ed. 1974).
\textsuperscript{37} An elephant could comfortably stand in the mouth of a Blue Whale. Matthews, THE WHALE 68 (1968).
\textsuperscript{38} See Scarff, supra note 7, at 350.
\textsuperscript{39} Id.
endangered and plentiful species alike, until the population in that geographic area was rendered economically extinct. The factory ships could then simply move on to exploit fresh populations in new geographic zones until their BWU allotment was completed. Only recently have protection quotas been set by species.

However, the decision to establish quotas solely by species also fails to consider the complexity of whale ecology. Species barriers are generally recognized to be absolute obstacles to interbreeding between various large Cetaceans. Yet the decision to establish quotas based solely upon the number of the species in existence ignores the findings that discrete population groups within the same species, although physiologically capable of interbreeding, do not do so because of geographical or behavioral isolation. For example, North Atlantic Fin Whales apparently comprise six genetically and geographically distinct populations. None of these discrete groups interbreed among themselves or with South Atlantic Fins. This lack of interbreeding necessitates the refinement of regulations so that quotas are determined on the basis of geographic location as well as by the number of the species in existence.

The IWC’s failure to consider both species and geographic location has led to the depletion of the Bowhead, Right and Blue populations to such levels that replenishment may not occur for thousands of years, if ever. Once the numbers are down to a few thousand, biogeographical barriers make it difficult for the members to even rendezvous to mate.

A great deal of information is still needed before accurate quotas which will prevent the elimination of numerous species can be established. For example, little research or consideration has been given to such factors as the impact of the periodic extermination of individuals or groups of these highly socialized animals upon reproductive rates. There has also been no consideration of the effects of toxic industrial effluents upon those Cetaceans at the top of the food chain. Nor has the potential effect of man’s competition for those resources used by whales for food been evaluated. The Japa-

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For example, in 1972, the quotas on Antarctic Baleen Whales were set by species. See Scarff, *supra* note 7, at 368.

*Id.* at 334.

*Id.*

*Id.* In 1968, scientists realized that they had highly over-estimated the age for sexual maturity in the Fin Whale and, although quotas have been reduced, the Fin Whales have never recovered. *Id.* at 336.
nese and Russians have recently developed techniques for the large scale harvesting of krill, the zooplankton ubiquitous to the diet of the most endangered Baleens. Furthermore, IWC scientists have ignored competition between whale species, a phenomenon which might explain the Right Whales' inability to compete with the abundant Sei and simultaneous failure to expand their population, despite decades of protection. Nor have IWC scientists analyzed the interference of global ship noise with whales' long distance communication, which normally can range over several hundred miles and apparently serves important mating and social functions. Dr. Talbot, the Director of the United States Council on Environmental Quality, has offered the following comment:

The present state of our knowledge of whales is still very primitive. We have plenty of statistics from dead whales—but the whole thrust of modern biology and ecology is away from total reliance on such data and towards attempts to understand the ecosystem and the organism's place in it . . . . I conclude then . . . that the data base we have is scientifically unjustifiable. 47

2. Complementary International Efforts

Most codified international law pertaining to Cetaceans is contained in three treaties drafted by the 1958 United Nations Conference on the Law of the Seas: The Convention on the High Seas, Territorial Seas and the Contiguous Zones and the Convention on Fishing and Conservation of the Living Resources of the High Seas. The last of these conventions, designed to preserve the "living resources of the high seas," is both interesting and disappointing. Virtually every IWC and large non-IWC whaling nation signed this convention. Paragraph 2 of Article IX outlines the structure of a compulsory dispute settlement procedure which may be invoked by any member against an allegedly offending co-member. However, this injunction has proved of no use since the Soviet Union and Japan, who together take eighty-five percent of the world whale catch, as well as Chile and Peru, the two largest non-IWC whalers,
have never ratified their signature of the pact. Due to the ineffectiveness of these treaties, the IWC remains the sole international organ capable of any effective regulation of whaling.

However, other national and international attempts to curtail the killing of Cetaceans has caused the IWC to strengthen its whaling regulations. In 1972 the United Nations Conference on the Human Environment in Stockholm passed a resolution calling for a ten year moratorium on commercial whaling. Although the IWC formally rejected this call, it did institute some positive changes, such as the abolition of the Blue Whale Unit and the concomitant imposition of quotas by species. The United States formally protested this rejection, and most importantly, took unilateral domestic action by passing the Marine Mammal Protection Act of 1972. This Act, coupled with subsequent United States legislation, has had a profound impact on the attitudes within the IWC. The Act had the immediate effect of banning the importation of whale products into the United States which, until that time, had comprised 20 percent of the entire world market for such goods.

Parallel to this American governmental action was the increasing activism of international, non-governmental conservationist groups. In response to Japanese and Russian rejection of the IWC quotas at the 1974 meeting, these international conservationist groups, which represented over five million members, instituted an economic boycott against these two whaling nations. This induced the IWC in 1975 to make the first significant reduction in kill quotas, from 37,300 to 32,450. The IWC also established discrete limits on individual oceans, an action which realistically took into account some of the complexities of whale ecology.

In 1975, the USSR announced it would phase out three Antarctic whaling fleets "as a gesture to growing conservationist pressure." The 1976 quotas were set at 27,820. The 1977 quotas were initially set at 18,192, but at the Canberra meeting of the IWC in June of 1977, the Japanese and Russians persuaded IWC scientific committees to raise the quota for Sperm Whales almost ten-fold, from 700 to 6,444. This recommendation was subsequently ratified at the

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51 U.S. Dept. of State, TREATIES IN FORCE 354 (1976).
54 See Section (III)(C), infra.
55 See Scarff, supra note 7, at 369.
56 See Christol et al., supra note 34, at 157.
57 Id.
IWC meeting in Tokyo on December 10, 1977, thus raising the total kill quota for 1978 to about 25,000. Negotiations are currently underway to amend the constitution of the IWC to ensure a continuation of this yearly quota reduction, and to institutionalize concern for the preservation of all whale species.

The Third United Nations Law of the Sea Conference has the potential to resolve sea mammal problems well beyond the constitutional and institutional scope of the IWC since it does not deal solely with whales. Unfortunately, these negotiations have continued for almost five years without producing any convention or treaty. The "Single Negotiating Text" (Draft Treaty) of the Second Committee of the Conference, the current working paper of the Third Committee, approximates a majority position. The articles relevant to Cetaceans, particularly Articles 53 and 54, do not provide for compulsory conservation of species. They merely create 200-mile economic zones which may even make international efforts to protect Cetaceans more difficult since, within these zones, the adjacent nation will exert the sovereign power to exploit or conserve a "local" population. Even less legal justification will exist for an interested party to invoke international controls.

Thus, it does not appear that the Third United Nations Law of the Sea Conference will make great strides in resolving the problems of sea mammals. However, American and international efforts to reduce the killing of such mammals have had positive effects on the IWC and have caused the IWC to strengthen its regulations.

C. Domestic Initiatives

1. The Marine Mammal Protection Act

Domestic legislation and litigation has focused primarily on the preservation of the small Cetaceans rather than on the preservation of whales. During the 1970's, the United States tuna industry has become the largest killer of marine mammals, particularly porpoises, incidental to the "on porpoise" purse seining of White Yellow Fin and Slipjack Tuna. Since the Marine Mammal Protection Act of 1972, the United States has imported no commercially ap-
preciable quantities of whale products, nor has it whaled.64

The Marine Mammal Protection Act of 1972 (MMPA)65 made it illegal for any person subject to the jurisdiction of the United States to "take any marine mammal on the high seas."66 Furthermore, all persons are prohibited from taking marine mammals from the waters or lands under the jurisdiction of the United States67 or importing into the United States any marine mammal taken in violation of the Act.68 To be excepted from the prohibitions of the Act, one must obtain a special permit from the Secretary of Commerce.69 The Act provides for criminal as well as civil liability70 for the violation of its provisions; unfortunately, the penalty provisions of the Act have remained essentially unenforced. The vast majority of litigation under the Act concerning Cetaceans has dealt with the issuance of special permits by the Secretary of Commerce for the taking of small Cetaceans incidental to tuna fishing.71

The MMPA litigation has led to the introduction in the House of Representatives of proposed amendments and regulations.72 These amendments passed the House and went to the Senate in June of 1977.73 The operative sections of the amendments include a quota of 69,000 kills, the implementation of a full observer program and the restriction of the tuna industry’s threatened defection to foreign flags. Although the quota is unjustified in light of the research and experience of the Elizabeth C.J., an experimental tuna purse seiner,74 perhaps even more dangerous is the de facto amendment of the MMPA's explicit and ultimate target of near zero porpoise kills arising by implication from the setting of such a high quota.

Enforcement and monitoring of the MMPA is delegated to the National Marine and Fisheries Service with the help of an appointed Marine Mammal Commission which, in turn, is advised by the Committee of Scientific Advisors. If the Commission disagrees with the findings and suggestions of the Committee of Scientific

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64 See Christol, et al., supra note 34, at 156.
66 Id. at § 1372 (a)(1).
67 Id. at § 1372 (a)(2)(d).
68 Id. at § 1372 (c)(1).
69 Id. at § 1374.
70 Id. at § 1375(b).
71 Id. at § 1371(a)(2)(b).
74 See Hearings, supra note 72, at 11.
Advisors, it must detail in writing why it is not following the advice of the Committee. In turn, if any federal agency rejects the advice of the Commission, it must also justify its variance from such advice.\textsuperscript{75} The Marine Mammal Commission has shown much greater concern for marine mammals, based on its scientific findings, than its parent bureaucracy, the National Marine and Fisheries Service. The Service has consistently circumscribed its own power to enforce and issue regulations pursuant to the extremely broad and powerful legislation which has been passed to protect all marine mammals. To illustrate, the initial regulations of the Service consisted of a statement that the existing population of marine mammals was "unknown"\textsuperscript{76} and that the expected impact of the regulations was "not known due to lack of knowledge of the sizes of porpoise population and other population dynamics . . . ."\textsuperscript{77} Coupled with this statement was the issuance of certificates to the American Tuna-boat Association allowing its members to kill porpoises without any numerical limitation.\textsuperscript{78} The Service position was held clearly "void as contrary to law."\textsuperscript{79}

Particularly unfortunate has been the Service's disregard of the information gathered in the 1976 cruise of the \textit{Elizabeth C.J.}, a purse seiner equipped with the most advanced net technology and employing the most sophisticated tuna seining techniques. By the Service's own conservative figures, the \textit{Elizabeth C.J.} exhibited kill rates 175 times lower than the average for the United States tuna fleet in 1976.\textsuperscript{80} Instead of requirements for the phased procurement of this technology and the use of these techniques, the Service caviled, promulgating kill quotas only slightly lower than what were the current 1977 kill rates. Fishing at the \textit{Elizabeth C.J.} rate would have led to kills appreciably under 10,000, and nowhere near the 50,000-80,000 range adopted by the Service.\textsuperscript{81}

2. \textbf{Auxiliary Tools}

The MMPA and a parallel act, the Endangered Species Act of

\textsuperscript{75} See Scarff, supra note 7, at 415.
\textsuperscript{77} Id.
\textsuperscript{80} See \textit{Hearings}, supra note 72, at 11.
\textsuperscript{81} Id. at 195.
1973 (ESA), now govern the coastal waters 200 nautical miles from shore, as provided in the Fisheries Conservation and Management Act of 1976. The most powerful piece of domestic legislation with potential application to Cetacean protection is the Pelly Amendment to the Fisherman’s Protective Act of 1967. The Pelly Amendment gives the President authority to ban imports of all fishery products from another country if that country is “conducting fishing operations in a manner or under circumstances which diminish the effectiveness of an international conservation program.” These “conservation programs” have been defined broadly to include Cetacean conservation. This power may be invoked by the President upon a formal finding by the Secretary of Commerce, even if there is no threat of extermination of a species or any treaty violation.

The Pelly Amendment’s sanction has never been invoked. However, when the United States threatened its use, the IWC achieved a sudden consensus that it was time to act to protect the whales. In 1974, the National Oceanic and Atmospheric Administration, which has jurisdiction over the National Marine and Fisheries Service within the Department of Commerce, requested an opinion from the Marine Mammal Commission as to whether the Japanese and Russian rejection of the 1973 IWC quotas diminished the conservation programs of the IWC. The Marine Mammal Commission found that they did, and these findings were certified by the Secretary of Commerce to President Ford. While no embargo ensued, the attitude within the IWC, especially of Japan, was far more amenable to conservationist goals from 1974 onward.

Another law, the Marine Protection Research and Sanctuaries Act of 1972, has conferred upon the Secretary of Commerce a remarkable power. Section 352 of the Act authorizes the designation of marine sanctuaries in any ocean waters, coastal waters or Great Lakes within the jurisdiction of the United States. The Marine Mammal Commission should begin immediately to draft plans for such sanctuaries, which could be situated within the newly extended 200-mile economic zone. Such areas could provide the setting for a study of Cetaceans in their ocean habitat. These studies
might be linked to other research (such as the currently experimental seaweed farming projects) to provide independent justification for the investment of funds. However, it is questionable whether such further justification is needed. Such sanctuaries would give humans an opportunity for intensive interaction with the smaller Cetaceans—animals which have always showed a profound interest in, and affection towards, man.

IV. Strategy and Policy

A. International Forums

The IWC will probably be the forum within which future protection of Cetaceans' rights will evolve. The IWC has developed institutions and data banks which would only have to be replicated by a new organization. Any such organization would also suffer the same political weakness that has continued to plague the IWC. Moreover, the scientists needed to staff a new organization would have to be drafted from the IWC's staff, which has the best collection of cetologists in the world. The most effective strategy to protect the Cetaceans would utilize the proposed amendments to the constitution of the IWC which would reduce the yearly kill quota. Such a plan of action would rejuvenate existing agencies rather than create another impotent organization.

The Third United Nations Law of the Sea Conference, at first glance, offers a superlative forum in which to advance the rights of the Cetaceans. Unfortunately, as in any large international convention of this kind, the interest of the participants are so diverse and the inter-relationships so complex that the conference's results may be wrought with the same sort of fatal defects which have characterized such organizations as the IWC. Nonetheless, the possibilities offered by the conference should not be surrendered. The United States and other interested delegations should press for implementation of the 1972 United Nations Conference on the Human Environment resolution calling for a ten-year international moratorium on whaling.

B. Domestic Powers and Prescriptions

In the near future, unilateral action, orchestrated whenever possi-
ble with international accords or goals, should prove the most effective means of protecting the large and small Cetaceans in the United States. Initial efforts should focus on maintaining the integrity of those laws that exist today, and insisting on their full implementation. One-half of the tuna consumed in the world today is consumed in the United States. Foreign vessels supply our canneries with fifty-nine percent of the raw materials they process. The American market for all types of seafood is vast, and access to it is essential for many foreign fishing interests.

Between 1960 and 1975, approximately six million dolphins and porpoises were killed by tuna fishing alone. Moreover, for many years Japanese fishermen have deliberately killed dolphins for food and other commercial uses. The first actions must be to minimize the slaughter of porpoises by our own fishermen. The National Marine and Fisheries Service should amend regulations to require the utilization of the technology and techniques developed on the Elizabeth C.J.. This equipment, and the training needed to use it, are currently available. The integration of this technology would be facilitated by linking its adoption to various incentives for complying boats. A 1975 check of twenty-nine ships revealed that forty percent of the porpoise kills were committed by only three of the boats. Quotas allocated by vessel, retention of the proposed observer plan, vigorous exaction of the penalties the MMPA provides (but which have never been used) would reduce porpoise kills dramatically. Such vigilant enforcement of the MMPA is proposed in the new 1977 regulations. As demonstrated by the Elizabeth C.J., porpoise kills can be drastically reduced and, with further improvements, approach the goal of zero mortality. Commitment to this goal must be reincorporated into the text of the new regulations.

Next in importance to effective regulation of the domestic tuna industry is monitoring the regulation of the foreign fleet. The United States currently enjoys a virtual monopoly over purse seining technology. This will rapidly change as this technology is transferred to other countries. Purse seining without proper caution results in extremely high porpoise kills. We should discourage, not subsidize, such depredations. Those regulations that bind United States fishermen must also bind the foreign fleet. There are several mechanisms available to effectuate this policy.

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- See Hearings, supra note 72, at 333.
- Id. at 159.
- Id. at 314.
- Id. at 295.
The 1977 regulations promulgated under subsection (e)(5)(B) of the MMPA prohibit the importation of tuna into the United States unless the exporting country is fishing in compliance with United States standards. The burden of showing such compliance lies upon the foreign vessels. The United States does not have the general legal authority to place observers on foreign ships and directly inhibit its porpoise kill. However, it does have the legal power to deny our market to foreign fishermen except upon demonstration of the propriety of the foreign catch. The United States must demand from the foreign fleet the same proof which it demands from the domestic fleet—direct observation of the take. This solution is entirely vindicated under the General Agreement on Tariffs and Trade, which authorizes such regulation if based on equal treatment of nationals and foreigners. Mr. Brewer, general counsel for the National Oceanic and Atmospheric Administration has admitted that the National Marine and Fisheries Service has not been enforcing the import regulations of the MMPA, or has merely been enforcing it on a pro forma basis.

An alternative enforcement method would be through the use, or the threatened use, of the powers conferred under the Pelly Amendment. Linkage, a concept which was used by conservationists when they attempted to add to the Okinawa Reversion Treaty a provision calling for a ten-year moratorium on whaling, is a crude, but effective enforcement tool. The closing of the entire American market to one who is violating a conservation program is severe, but would prove productive if applied in situations in which the wrong is proportionate to the sanction. In early 1977, the Marine Mammal Commission issued a report to the effect that the whaling activities of Peru and Korea constituted a threat to the conservation of the whale. The Commission requested that the Secretary of Commerce certify this finding to the President for his consideration. Such action would also be justified with respect to the use of purse seines by any nation for the deliberate taking of porpoises or dolphins. The recent officially-sanctioned slaughters by Japanese fishermen of 1000-2000 coastal dolphins is a matter for immediate investigation by the Commission.

Activism on the part of conservationist groups has played an im-

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important role in the recent protections extended to whales, dolphins and porpoises. Many conservationist groups have advocated legislation to ban the import of goods from any whaling country, even one acting in consonance with IWC requirements, since such countries still constitute a threat to whale ecology.\textsuperscript{101} Another conservationist tactic—forbidding the importation of whale products by IWC members from non-IWC members—has been officially advocated by the United States in the IWC, along with implied linkage sanctions.\textsuperscript{102} Such use of linkages by non-governmental actors appears to be an effective avenue through which to pursue positive change.

V. Conclusion

The antiquated concept of the Cetaceans and the high seas as being \textit{res nullis} must end, and a new concept of \textit{res communis} must take its place. Cetaceans are not “resources”—their loss touches all. Such creatures cannot be managed like the sterile extraction of raw materials for processing. Cetaceans have found particularly strong allies throughout the world, and especially here in the United States. The governmental agencies in this country must be forced to implement the legislation which exists today. These laws must then be improved to attain the explicit goal of zero domestic Cetacean mortality. These domestic initiatives must be interfaced with the concomitant and ultimate international goal of ending the slaughter of Cetaceans throughout the oceans. The recent dramatic increase in the non-consumptive use of whales and dolphins, especially for aesthetic pleasures, must be further researched and subsidized.\textsuperscript{103} Such uses as the organization of tours to watch annual coastal migrations, the making of movies and television specials and the recording of the particularly eloquent song of the Humpback Whale are beginning to rival in worth the entire whaling industry, which in 1971 was estimated at only about $150 million.\textsuperscript{104}

Ultimately, education and research are the tools with which to advance Cetacean rights. Scientific research has demonstrated the need for efforts to end the mass killings of Cetaceans. These beings may eventually teach us much about our own society, and our own world view.

\textsuperscript{104} \textit{See} \textit{Hearings on H.R. 10420, supra} note 11, at 32.