1. SHARING OCEAN RESOURCES –
IN A TIME OF SCARCITY AND SELFISHNESS

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THE EARLY DEBATES ON FREEDOM OF THE SEA

Hugo Grotius wrote that the seas must be free for navigation and fishing because natural law forbids the ownership of things that seem “to have been created by nature for common use.” Because the use of the seas for navigation by one nation does not diminish the potential for the same use by others, he argued, the inherent nature of the ocean is that of a common space or shared resource. In Grotius’ time, the fish in the ocean also seemed limitless, but we have seen in our time, with high-technology fishing methods, that the fish of the oceans are definitely exhaustible, and that overfishing by one nation can have a grave impact on the abilities of other nations to harvest “their share” of the resource. Nonetheless, Grotius’ vision continues to dominate our world’s perspective about the resources of the open ocean, and the concept of the freedom of the seas remains very much alive.

Even in Grotius’ time, the proposition that the resources of the high seas were free for all to take was controversial and the opposite perspective was put forward by the British scholar and diplomat John Selden, who argued that countries could control as much sea territory as they could dominate militarily. Grotius’ views were not fully embraced until 200 years after he wrote them, when the commercial interests of the European nations, their links to their colonies around the globe, and the changing economy brought on by the industrial revolution produced a consensus on the freedom-of-the-seas concept.

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3 John Selden, Mare Clausum, sen de Domino Maris Libri Duo (The Closed Sea; or, Two Books Concerning the Rule Over the Sea) (discussed in Anand, supra note 1, at 75-76).

During the past two centuries, the nations and peoples of the world have competed for the oceans' resources, but this era now appears to be coming to an end. What new regime is emerging? Is it realistic for a diverse world to share valuable resources? How can we define the concept of “sharing” for this purpose?

2. THE MODERN DEBATES ON THE RESOURCES OF THE OPEN OCEAN

In 1967, Ambassador Arvid Pardo of Malta told the U.N. General Assembly that vast riches lay scattered across the floor of the deep seabed in the form of exploitable polymetallic nodules. Within three years of Ambassador Pardo's speech, an international consensus developed that these nodules should be viewed as the “common heritage” of humankind, that national claims of exclusive rights to seabed resources are prohibited, that exploitation of these minerals should take place pursuant to an international legal regime, and that developing nations should share genuine benefits from seabed exploitation.

When we look back at this era from our present vantagepoint, we find a level of idealism that seems distant from the petty competition and self-oriented perspectives that now dominate national and international dialogue. President Lyndon B. Johnson announced in 1966, for instance, that:

[U]nder no circumstances...must we ever allow the prospects of rich harvest and mineral wealth to create a new form of colonial competition among the maritime nations. We must be careful to avoid a race to grab and to hold the lands under the high seas. We must ensure that the deep seas and the ocean bottoms are, and remain, the legacy of all human beings.

Four years later, in 1970, President Richard M. Nixon declared that U.S. ocean policy included the renunciation of all sovereign rights to the seabed and

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6 U.N. Doc. A/6695 (1967). This idea was also developed in John Mero, The Mineral Resources of the Sea (1965).
7 See generally Van Dyke and Yuen, supra note 1, at 521-43. The key international document is the U.N. General Assembly's 1970 Declaration of Principles Governing the Seabed and the Ocean Floor, and the Subsoil Thereof, Beyond the Limits of National Jurisdiction, G.A. Res. 2749 (XXV), 25 UN GAOR Supp. (No. 28) 24, UN Doc. A/8028 (1970). This Declaration was adopted by a vote of 108-0, with 14 abstentions; the abstaining nations were from the Soviet bloc, but they later indicated that they accepted the principles identified in the Declaration.
8 Address by President Lyndon B. Johnson at the Commissioning of the ship Oceanographer, July 13, 1966 (cited in E. Wenk, The Politics of the Ocean 258 (1972)).
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its resources and the creation of a new international legal regime to manage the exploration and exploitation of the seabed resources:

The International Seabed Area would be the common heritage of mankind and no state could exercise sovereignty or sovereign rights over this area or its resources or, except as provided in the convention, acquire any right or interest therein.

The International Seabed Area would be open to use by all states without discrimination, except as otherwise provided in the convention, and would be reserved exclusively for peaceful purposes.

Provision would be made for the collection of revenues from mineral production in the Area to be used for international community purposes including economic advancement of developing countries and for promotion of the safe, efficient and economic exploitation of the mineral resources of the seabed.9

These principles guided the U.S. negotiators during the administrations of Presidents Nixon, Ford, and Carter, as they worked to create an international regime to govern seabed mining consistent with the Declaration of Principles adopted by the U.N. General Assembly in 1970.10 The U.S. negotiators never expressed any reservations about these Principles, and many of the key initiatives that led to the creation of Part XI of the Convention came from the United States. These initiatives included Henry Kissinger's compromise of 1976, proposing the parallel system of exploitation coupled with indications that the developed world would finance the Enterprise and provide the technology for its operations,11 as well as the many refinements negotiated by Elliot Richardson in 1979 and 1980 to make the governing bodies of the International Seabed Authority more acceptable to the United States.12

With the coming of the Reagan Administration in 1981, however, the U.S. perspective changed from one of altruistic globalism to the "me-first selfishness" that we associate with the Eighties. Even though the United States had previously agreed to help finance the Enterprise (the operating arm of the

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10 Declaration of Principles, supra note 7.
International Seabed Authority) and to transfer technology to the developing world as a way of equalizing global wealth, President Reagan’s chief negotiator James Malone denounced such obligations.14

Despite the efforts of other nations to make further adjustments to the Convention to respond to the concerns of the new U.S. administration, President Reagan announced in July 1982 that the United States would not sign the Convention.15 Through most of the Eighties, the United States would not even attend the meetings of the Preparatory Commission as an observer, and tried earnestly to create an alternative “reciprocating-states regime” among like-minded developed countries to govern seabed mining.16

3. COOPERATION AND CONFRONTATION IN THE NINETIES

During the current decade, conflicts regarding ocean resources have multiplied, countries have fought hard to protect their interests and claims, but most countries, including the United States, have adopted a flexible and pragmatic approach to these conflicts rather than the rigid adherence to ideological purity that marked the Eighties. This change is demonstrated most directly by the 1994 Part XI Agreement, which constitutes a significant amendment to the


[T]he United States would be prepared to agree to a means of financing the Enterprise in such a manner that the Enterprise could begin its mining operation either concurrently with the mining of State or private enterprises or within an agreed timespan that was practically concurrent....[T]his would include agreed provisions for the transfer of technology so that the existing advantage of certain industrial states would be equalized over a period of time.

14 In his statement explaining the Reagan Administration’s concerns about the Draft Convention, Ambassador James Malone said:

The Draft Convention would establish a supranational mining company, called the Enterprise....[T]he Draft Convention requires the U.S. and other nations to fund the initial capitalization of the Enterprise....The Enterprise, through mandatory transfer, is guaranteed access on request to seabed mining technology owned by private companies...."


16 See comments of Brian Hoyle, in Consensus and Confrontation, supra n. 15, at 249-51.

provisions of the 1982 Convention. This Agreement maintains the basic organizational structure of the International Seabed Authority, but significantly alters the decision-making mechanisms of the Council and eliminates most of the financial and technology-transfer obligations. The United States signed the Convention that year, but has still not ratified it.

A gridlock has stalled U.S. ocean policy with regard to the Law of the Sea Convention, but many innovative initiatives have nonetheless been developed during the decade, frequently with active U.S. involvement, which demonstrate a significant change in course direction for the international community. Even though U.S. ocean policy has faltered with regard to the main document governing the ocean, the other instruments and controversies demonstrate that the current era is one of the most fertile periods for cooperation in ocean affairs.

4. THE LONDON DUMPING CONVENTION

The transformation of the London Dumping Convention is certainly one of the most impressive success stories of the Nineties. This Convention was drafted shortly after the 1972 Stockholm meeting that launched international environmental consciousness. As originally written, it contained a "black list" of materials (such as high-level radioactive wastes) that could never be dumped into the ocean and a "gray list" of items (such as low-level radioactive wastes) that could be dumped in appropriate locations if proper governmental permits were obtained. This treaty was a step forward, but it still permitted a substantial amount of dumping, and efforts were made at its annual meetings to tighten its provisions, so that no radioactive materials whatsoever could be dumped and


18 After this Agreement, there are no longer any production limits on deep seabed mining. States are under no obligation to fund the joint ventures of the Enterprise, and technology transfer is not mandatory. Rather, the Enterprise and developing States are directed to obtain deep seabed mining technology on the open market or through joint ventures. If they cannot obtain the technology they seek, the International Seabed Authority may request contractors and sponsoring States to facilitate their acquisition of technology on fair and reasonable commercial terms, consistent with effective protection of intellectual property rights.

19 The London Dumping Convention has the formal name of The Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, and is reprinted in *I.L.M.* 129 (1973).

that the dumping of other hazardous materials would similarly be prohibited. Although the developed nations resisted restrictions on their ability to dump low-level radioactive wastes for a number of years, after many debates and many preliminary meetings, a new Protocol was adopted in 1996 that "virtually re-writes the London Convention." In fact, the name of this treaty was even changed, because the contracting parties did not want the public to think that it authorized dumping, and now it is titled simply "London Convention, 1972."

Under the new Protocol, the presumptions are reversed, and the dumping of all wastes are prohibited unless the item to be dumped is explicitly listed in Annex I. Even these materials, which include dredged material, sewage sludge, vessels, and ocean platforms, cannot be dumped without a permit. Permits can be granted only after assessments are undertaken that evaluate options and describe the potential effects of the dumping. Incineration at sea and the dumping of industrial wastes are completely prohibited. This new Protocol is thus based on the precautionary approach as well as the polluter-pays principle. The burden has shifted "from (1) dumping unless it were proven...

1990.

(1) During the Seventh Consultative Meeting, the contracting parties passed a resolution imposing a moratorium on the dumping of all low-level radioactive wastes, but the Soviet Union, China, Belgium, France, the United Kingdom, and the United States voted against the resolution and a number of other industrialized nations abstained. The dissenting nations did not feel that they were bound by this resolution, and the British government sought to continue its dumping program. But the British Unions refused to load the low-level wastes on the British ship in 1985, and thus the British were forced to adhere to the moratorium by their own people. Van Dyke, "Ocean Disposal of Nuclear Wastes," supra n. 20, at 82.


23 Hunter, Salzman, and Zaelke, supra note 18, at 764.

24 1996 Protocol, art. 4(1).

25 Id., Annex I.

26 Id., art. 4(2).

27 Id., Annex II.

28 Id., art. 5.

29 Id., art 3(1):

In implementing this Protocol, Contracting Parties shall apply a precautionary approach to environmental protection from dumping of wastes or other matter whereby appropriate preventative measures are taken when there is reason to believe that wastes or other matter introduced into the marine environment are likely to cause harm even when there is no conclusive evidence to prove a causal relation between inputs and their effects.

30 Id., art. 3(2):

Taking into account the approach that the polluter should, in principle, bear the cost of pollution, each Contracting Party shall endeavor to promote practices whereby those it has authorized to engage in dumping or incineration at sea bear the cost of meeting the
harmful to (2) no dumping unless it is shown there are no alternatives."31 The Protocol also contains a number of provisions to assist developing countries in dealing with their wastes and to encourage them to become parties. It establishes a Technical Cooperation and Assistance Program to assist countries in relying upon the oceans for the dumping of wastes, and seven programs were established by the International Maritime Organization in 1997-98.32

This remarkable makeover of the London Convention illustrates the “greening” of the international community and the new spirit of shared responsibility for the common areas of the planet. As of June 1997, 76 countries had become contracting parties to the London Convention,33 and under Article 210(6) of the Law of the Sea Convention,34 parties to the Law of the Sea Convention are bound by the requirements of the London Convention even if they are not parties to that treaty.35

5. THE STRADDLING AND MIGRATORY STOCKS AGREEMENT

On December 4, 1995, the nations of the world settled on the text of an important document with the cumbersome title of “Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks.”36 The goal of this

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31 Hunter, Salzman, and Zaelke, supra note 18, at 765. The precautionary principle is discussed infra in text at notes 39, 106-13.
32 Id. at 766-67.
33 Hunter, Salzman, and Zaelke, supra note 18, at 772.
34 Law of the Sea Convention, supra note 2, art. 210(6).
document is to stop the dramatic overfishing that has decimated the fish stocks in many parts of the world. It builds on existing provisions in the 1982 United Nations Law of the Sea Convention, but it also introduces a number of new


38 The provisions of the 1982 UN Law of the Sea Convention are general in nature but nonetheless sketch out the contours of a duty to cooperate in all situations involving shared fisheries. Article 56 gives the coastal state sovereignty over the living resources in the 200-nautical-mile exclusive economic zone (EEZ), but Articles 61, 62, 69 and 70 require the coastal state (a) to cooperate with international organizations to ensure that species are not endangered by over-exploitation, (b) to manage species in a manner that protects “associated or dependent species” from over-exploitation, (c) to exchange data with international organizations and other nations that fish in its EEZ, and (d) to allow other states (particularly developing, land-locked, and geographically disadvantaged states) to harvest the surplus stocks in its EEZ. Article 63 addresses stocks (or stocks of associated species) that “straddle” adjacent EEZs, or an EEZ and an adjacent high seas area, and requires the states concerned to agree either directly or through an organization on the measures necessary to ensure the conservation of such stocks. Article 64 requires coastal states and distant-water fishing states that harvest highly migratory stocks such as tuna to cooperate either directly or through an organization to ensure the conservation and optimum utilization of such stocks. Article 65 contains strong language requiring nations to “work through the appropriate international organization” to conserve, manage, and study whales and dolphins. Article 66 gives the states of origin primary responsibility for anadromous stocks (i.e., salmon), but requires the states of origin to cooperate with other states whose nationals have traditionally harvested such stocks and states whose waters these fish migrate through.

On the high seas, Articles 118 and 119 require states to cooperate with other states whose nationals exploit identical or associated species. Article 118 is mandatory in stating that nations “shall enter into negotiations with a view to taking the measures necessary for the conservation of the living resources concerned,” and suggests creating regional fisheries organizations, as appropriate (emphasis added). Article 120 states that the provisions of Article 65 on marine mammals also apply on the high seas.
strategies that will require the fishing industry to change its mode of operation in a number of significant ways.

(1) The Duty to Cooperate

The guiding principle that governs the 1995 Agreement is the duty to cooperate. This core concept is given specific new meaning, and the coastal nations and distant-water fishing nations of each region will be required to share data and manage the straddling fisheries together. Article 7(2) requires that “[c]onservation and management measures established for the high seas and those adopted for areas under national jurisdiction shall be compatible in order to ensure conservation and management of the straddling fish stocks and highly migratory fish stocks in their entirety” (emphasis added). This duty gives the coastal state a leadership role in determining the catch allowed to be taken from a stock that is found both within and outside its exclusive economic zone, as evidenced by the requirement in Article 7(2)(a) that contracting parties “take into account” the conservation measures established by the coastal state under Article 61 of the Law of the Sea Convention for the exclusive economic zone “and ensure that measures established in respect of such stocks for the high seas do not undermine the effectiveness of such measures.” This polite diplomatic language indicates clearly that catch rates outside a 200-nautical-mile exclusive economic zone cannot differ significantly from those within the EEZ.

(2) The Duty to Work Through and Existing or New Fisheries Organization

The 1995 Agreement requires coastal and island nations to work together with distant-water fishing nations in an organization or arrangement to manage shared fisheries. Article 8(3) addresses this issue, and it is quoted in full here because its somewhat ambiguous language requires close examination:

Where a subregional or regional fisheries management organization or arrangement has the competence to establish conservation and management measures for particular straddling fish stocks or highly migratory fish stocks, States fishing for the stocks on the high seas and relevant coastal States shall give effect to their duty to cooperate by becoming a member of such an organization or a participant in such an arrangement, or by agreeing to apply the conservation and management measures established by such an organization or arrangement. States having a real interest in the fisheries concerned may become members of such organizations or participants in such arrangement. The terms of participation of such organizations or arrangements shall not preclude such States from
membership or participation; nor shall they be applied in a
manner which discriminates against any State or group of States
having a real interest in the fisheries concerned. [Emphasis
added.]

It is hard to read this language without concluding that the coastal and island
nations must cooperate with the distant-water fishing nations fishing in adjacent
high seas areas either by allowing them into an existing fishery management
organization or by creating a new one that all can join. All states “having a real
interest” in the shared fishery stock must be allowed into the organization. Only
those states that join a regional organization or agree to observe its management
regulations can fish in a regional fishery (Article 8(4); and see Article 17(1)).
Article 13 requires existing fisheries management organizations to “improve
their effectiveness in establishing and implementing conservation and
management measures...”

Article 11 addresses the difficult question whether new distant-water fishing
nations must be allowed into such an organization once established. Do the
nations that have established fishing activities in the region have to allow new
entrants? The language of Article 11 does not give a clear answer to this
question, but it seems to indicate that some new entrants could be excluded if
the current fishing nations have developed a dependency on the shared fish
stock in question. Furthermore, developing nations from the region would
appear to have a greater right to enter the fishery than would developed nations
from outside the region.

(3) The Precautionary Approach

Article 5(c) lists the “precautionary approach” among the principles that govern
conservation and management of shared fish stocks, and Article 6 elaborates on
this requirement in some detail, focusing on data collection and monitoring.
Then, in Annex II, the Agreement identifies a specific procedure that must be
used to control exploitation and monitor the effects of the management plan. For
each harvested species, a “conservation” or “limit” reference point as well as a
“management” or “target” reference must be determined. If stock populations go
below the agreed-upon conservation/limit reference point, then “conservation
and management action should be initiated to facilitate stock recovery” (Annex
II(5)). Overfished stocks must be managed to ensure that they can recover to the
level at which they can produce the maximum sustainable yield (Annex II(7)).
The continued use of the maximum sustainable yield approach indicates that the
Agreement has not broken free from the approaches that have led to the rapid
decline in the world’s fisheries, but the hope is that the conservation/limit

39 Fishing to attain the maximum sustainable yield inevitably means reducing the
abundance of a stock, sometimes by one-half or two-thirds. This reduction can threaten
the stock in unforeseeable ways and also will impact on other species in the ecosystem.
reference points will lead to early warnings of trouble that will be taken more seriously.

(4) The Duty to Assess and to Collect and Share Data

Article 5(d) reaffirms the duty to “assess the impacts of fishing, other human activities and environmental factors” of stocks, and Articles 14 and 18(3)(e) explain the data collection requirements necessary to facilitate such assessments. Article 14 requires contracting parties to require fishing vessels flying their flags to collect data “in sufficient detail to facilitate effective stock assessment” (Article 14(1)(b)). Annex I then explains the specific information that must be collected, which includes the amount of fish caught by species, the amount of fish discarded, the types of fishing methods used, and the locations of the fishing vessels (Annex I, art. 3(1)). In order to permit stock assessment, each nation must also provide to the regional fishery organization data on the size, weight, length, age, and distribution of its catch, plus “other relevant research, including surveys of abundance, biomass surveys, hydro-acoustic surveys, research on environmental factors affecting stock abundance, and oceanographic and ecological studies” (Annex I, art. 3(2)). These requirements, if taken seriously, will revolutionize the fishing industry, where the competitive nature of the quest for fish has encouraged each nation to hide its activities from others to the extent possible. The data collected “must be shared with other flag States and relevant coastal States through appropriate subregional or regional fisheries management organizations or arrangements” in a “timely manner,” although the “confidentiality of nonaggregated data” should be maintained (Annex I, art. 7). Decision-making at regional fishery organizations must now be “transparent” under Article 12, and international and nongovernmental organizations must be allowed to participate in meetings and to observe the basis for decisions.

(5) The Methods of Enforcement

Article 18 further requires contracting parties to establish “national inspection schemes,” “national observer programmes,” and “vessel monitoring systems, including, as appropriate, satellite transmitter systems” to manage their flag fishing vessels with some rigor. Article 21(1) gives these requirements teeth by authorizing the ships of a nation that is party to a regional fisheries agreement to board and inspect on the high seas any ship flying the flag of any other nation that is a party to the same agreement.40 If the boarded vessel is found to have

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40 Nations already have the power to board, inspect, and arrest vessels violating laws established to “control and manage the living resources in the exclusive economic zone.” Law of the Sea Convention, supra note 2, art. 73(1).
committed a “serious violation,” it can be brought into the “nearest appropriate port" for further inspection (Article 21(8)). The term “serious violation” is defined in Article 21(11) to include using prohibited fishing gear, having improper markings or identification, fishing without a license or in violation of an established quota, and failing to maintain accurate records or tampering with evidence needed for an investigation.

(6) Dispute Resolution

Part VIII of the Agreement requires contracting parties to settle their disputes peacefully, and extends the dispute-resolution mechanisms of the Law of the Sea Convention to disputes arising under this new Agreement. These procedures are complicated and untested, but should provide flexible and sophisticated mechanisms to allow nations to resolve their differences in an orderly fashion.

(7) Assessment and Evaluation  What Exactly Is Required of the Parties?

This new Agreement is unquestionably a stride forward in resolving fishing disputes. But how will it actually be applied? In the Pacific, a Multilateral High-Level Conference on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific (MHLC) has met in plenary and technical sessions since 1996 to discuss the obligations established by the 1995 Straddling and Migratory Stocks Agreement and to create a new regional fishing organization for the Pacific. Although a number of general understandings have been reached, it was agreed in June 1998 that “the MHLC process was not yet ready to consider target or management reference point issues.”41 This reluctance was apparently based on the complexity of the process. Gaining the requisite scientific information (stock size and age data) is difficult enough, and “gaining industry input and cooperation was fundamental.”42 But this burdensome task, while necessary was not sufficient, because policy decisions regarding uncertainty and risk and economic considerations were also required.43 Although a number of meetings have been held on this topic, the participants seemed reluctant to commit to specific reference points at this time, indicating that substantial funding support would be needed to establish such points44 and that “there may...be other means of achieving the goals of the precautionary approach other than by the use of reference points, and these

42 Id. at 69.
43 Id. at 68-69.
44 Id. at 86.
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should be explored further.\textsuperscript{45} These discussions are important exercises, and the focus that they have given to fishing issues will undoubtedly assist in promoting careful management techniques. But it is not altogether clear that the somewhat mechanical formulas included in Annex II of the Straddling and Migratory Stocks Agreement will eliminate the need for hard choices to be made based on limited and uncertain data. At the end of the day, we may still find fish managers making \textit{ad hoc} guesstimates about what they think is likely to happen. Because so many variables are only partially understood, it is crucial that these decisions be made cautiously, with every doubt being given to ensure the sustainability of the stocks.

6. THE FAO COMPLIANCE AGREEMENT

The international community has addressed the question of flag-state responsibility over vessels flying its flag in the context of conservation and management of fisheries in the 1993 FAO Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas.\textsuperscript{46} This agreement imposes explicit responsibilities on flag states to require the ships flying their flags to adhere to conservation and management regulations.

The Duty to Cooperate underlies the FAO Compliance Agreement. Article IV requires flag states to maintain a registry of the fishing vessels flying its flag and make that listing available to the Food and Agriculture Organization (FAO), which in turn is required to circulate the information to all contracting parties. If any vessel is found to “undermine the effectiveness of international conservation and management measures,” Article VI(8) requires the flag state to report such infractions to the FAO and to explain the measures that were imposed upon the vessel because of its transgression. Article V requires port states to report to flag states whenever they have “reasonable grounds for believing” that a fishing vessel in their ports are acting contrary to international agreements governing conservation and management of fish stocks. Article VI(8)(b) imposes this same obligation on any other state that gains information about a fishing vessel that is violating the accepted governing standards. Information provided to FAO is then circulated to all contracting parties, pursuant to Article VI(10). Article VIII addresses “Non-Parties” and requires in paragraph (2) that “Parties shall cooperate in a manner consistent with this Agreement and with international law to the end that fishing vessels entitled to fly the flags of non-Parties do not engage in activities that undermine the effectiveness of international

\textsuperscript{45} Id. at 77.

conservation and management measures.” Under this Agreement, no state should allow a fishing vessel to fly its flag on the high seas unless the state can effectively exercise responsibility over that vessel (Article III(1)(a)), and no state should allow a vessel that has previously violated international rules governing conservation and management to fly its flag unless the vessel has complied with the punishment imposed upon it or has genuinely been transferred to new ownership and control (Article III(5)).

The “Settlement of Disputes” provisions in Article IX are instructive with regard to the contours of the duty to cooperate. If disputes arise, the disputing parties should first pursue “consultations” to try to reach a “mutually satisfactory solution as soon as possible,” but if this approach fails, then the parties should try to reach agreement to settle the dispute “by negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement or other peaceful means of their own choice.”

If these procedures are unavailing, then the parties should refer the dispute to the International Court of Justice, the International Tribunal for the Law of the Sea, or to an arbitral panel. The final sentence says that if they cannot agree on using these procedures, “the Parties shall continue to consult and cooperate with a view to reaching settlement of the dispute in accordance with the rules of international law relating to the conservation of living marine resources.”

7. SEA TRANSPORT OF ULTRAHAZARDOUS RADIOACTIVE MATERIALS

Many coastal communities have expressed substantial fears of environmental disasters that could result from the sea shipments of large cargoes of highly toxic radioactive materials. In November 1992, Japan shipped 2200 pounds (one metric ton) of plutonium in a refitted freighter called the Akatsuki Maru from France to Japan, going around the Cape of Good Hope in Africa and then south of Australia and New Zealand before turning north to traverse the Pacific to Japan. In February 1995, the British vessel Pacific Pintail carried 28 canisters of high-level vitrified nuclear waste in glass blocks, each weighing 1,000 pounds, going around Cape Horn at the tip of South America and then across the Pacific. In early 1997, the British vessel Pacific Teal carried 40 such canisters, going around Africa and then up through the Tasman Sea. Most recently, in January 1998, the British vessel Pacific Swan carried 60 canisters, going through the Panama Canal. French officials estimate that one or two such shipments will be made each year for the next 15 years.

These shipments present risks of a magnitude totally different from any previous ocean cargoes. Each of the 60 canisters on the Pacific Swan contains 17,000 terabecquerels in beta-gamma activity.47 These highly toxic and long-

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lived poisons could endanger large coastal populations or create an ecologically
dead zone in the ocean for thousands of years. They are extremely difficult to
handle, and the equipment necessary to salvage them in the event of an accident
has not yet been developed. British representatives acknowledge that in the
event of a vessel sinking “it was quite apparent that recovery from some places
would not be possible.” If a vessel carrying such a cargo collided with another
vessel causing an intensely hot and long-lasting shipboard fire, then radioactive
particles could become airborne, putting all nearby life forms in grave danger of
catastrophic health impacts. Brazil, Argentina, and Chile exerted every possible
pressure to keep the Pacific Pintail from traveling through their territorial
waters and exclusive economic zones in 1995, and in August 1998 Argentina
and Chile conducted joint naval exercises to prepare for a hypothetical accident
in which a ship carrying ultrahazardous radioactive materials collided with an
iceberg.

These cargoes are not, therefore, just another “dangerous goods.” They are
truly “ultrahazardous,” and require a focused and comprehensive legal regime
designed to internalize the real costs of the shipments, and to ensure that the
risks they create are not transferred from those that benefit from these shipments
to those who gain nothing from them.

In March 1996, the International Maritime Organization (IMO) held a
Special Consultative Meeting during which governmental and nongovernmental
organizations presented their views on the risks created by these transports and
the legal regime that applies to them. After that meeting assignments were given
to various international bodies to address these issues. A few issues have been
satisfactorily resolved, but many of them require further examination and
discussion.

The international community appears to have agreed that the Code for the
Safe Carriage of Irradiated Nuclear Fuel, Plutonium, and High-Level
Radioactive Wastes in Flasks Aboard Ships (the INF Code) should become
binding and obligatory, although the United States’ view is that this Code
should apply only to commercial vessels. The Marine Safety Committee of the
International Maritime Organization (IMO) has formally recommended that the
Code, as amended, should become mandatory, and its text is being revised to
reflect this change.

48 Maritime Safety Committee, Matters Related to the INF Code, March 27, 1997, at 2
(MSC 68/15/Add.2 (statement attributed to United Kingdom delegation).
49 See generally Jon M. Van Dyke, “Applying the Precautionary Principle to Ocean
cited as Van Dyke, “Precautionary Principle”].
50 “Simulacro de Accidente de Buque con Desechos Nucleares Ejercicios Navales de
51 Code for the Safe Carriage of Irradiated Nuclear Fuel, Plutonium and High-Level
Radioactive Wastes in Flasks on Board Ships, IMO Resolution A 18/Res. 748, Annex,
adopted by the 18th Assembly of the International Maritime Organization on November
4, 1993.
The IMO’s Marine Environment Protection Committee (MEPC) has developed Guidelines for Developing Shipboard Emergency Plans, which are designed to be added to the INF Code. The Committee recognized the need for consultation with coastal states in the development of these shipboard emergency plans. It is unclear, however, whether coastal nations will be fully informed of these plans, in order to develop coordinated shore-based emergency plans.

Although the Duty to Consult is one of the most venerable and well-established principles of international law, the shipping and nuclear nations are reluctant to acknowledge that they must consult with affected coastal nations regarding these ultrahazardous shipments. They argue that such consultation would interfere with their freedom of navigation and may assist terrorists who wish to attack the shipments. These arguments are spurious. Consultation regarding route-selection and emergency planning is in everyone’s best interest and can only serve to make these shipments safer for all concerned.

Proper international consultation has several elements. The first step is to disclose the nature of the project with its attendant risks and safety measures to those states that may be affected by the activity. Preparing an environmental impact assessment is a logical way to fulfill this obligation, and preparing such a document is required in any event by Articles 204-206 of the U.N. Law of the Sea Convention. The second step is to listen to the concerns expressed by the affected nations along with their suggestions for reducing the risks. Suggestions that are helpful and constructive should of course be accepted and acted upon. If the shipping states reject a suggestion, they should explain why they have rejected it.

This procedure entails no risks and can only lead to safer voyages. The coastal states may have ideas regarding shipping lanes and weather patterns that can reduce the risks to these voyages. The areas of the Western Pacific are, for instance, subject to intense typhoons during certain times of the year. The coastal states’ understanding of the shipments and their cargoes can enable them to use their rescue equipment in a manner that is more likely to be helpful in an emergency. Preparing contingency plans for coastal emergencies can only be done after a full understanding of the risks involved.

A nation that is consulted about a project outside its borders that may affect it does not have a veto power over that project. But it does have the right to understand the risks it is being subjected to and to offer constructive advice to reduce those risks.

The shipping and nuclear nations argue that prior notification is inconsistent with the freedom of navigation guaranteed under the U.N. Law of the Sea Convention. But in fact the shipping and nuclear nations currently do provide notification, at least to their close allies and the nations that they trust. The

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52 See infra text accompanying notes 87-105.
53 Law of the Sea Convention, supra note 2.
54 Jean-Louis Ricaud, vice-president of the French nuclear company Cogema, has said that the shippers had “informed everybody who needed to be informed” about the 1998
Japanese stated on December 18, 1997, that it would announce the route for its 1998 shipment the day after it left France. The British provided advance notification to the Panama Canal Commission regarding the 1998 shipment through the Canal. The smaller Pacific and Caribbean nations have been, however, left in the dark regarding these shipments, creating a two-tiered situation whereby some affected nations are treated as second-class citizens without the right to learn what is going on. Obviously such a situation is unfair and unacceptable.

Prior notification is useful in reducing the alarm that results from unsubstantiated rumors as well as ensuring that contingency plans for dealing with coastal emergencies can be prepared in time. Prior notification for transboundary movement of hazardous materials is standard in a number of conventions, including the Basel Convention (see below), the Bamako Convention, the IAEA Code of Practice on the International Transboundary Movement of Radioactive Waste, and the IAEA Regulations for the Safe Transport of Radioactive Material.

Other important initiatives are to require the shipping nations to work with the affected coastal and island nations to develop contingency plans for shore emergencies and salvage operations. Efforts should also be undertaken through the IMO to continue the effort to identify particularly sensitive sea areas that must be avoided altogether by ships carrying these ultrahazardous cargoes.

The IAEA Standing Committee on Liability for Nuclear Damage has recommended to the Agency’s Board of Governors that a diplomatic conference be held to amend the 1963 Vienna Convention on Civil Liability for Nuclear Damage and to adopt a Convention on Supplementary Funding. Liability remains an outstanding issue, which should be addressed both through the IMO and the IAEA.

The provisions in the Law of the Sea Convention relevant to shipments of ultrahazardous cargoes point in different directions. Although the freedom of

56 Letter of John A. Mills, Secretary, Panama Canal Commission, to Paul Leventhal, Nuclear Control Institute, Jan. 28, 1998.
60 Maritime Safety Committee, Matters Related to the INF Code, April 28, 1997, at 1 (MSC 68/15/Add.3).
navigation is protected, the duty to protect the marine environment is also clearly articulated. The Convention recognizes in Articles 22 and 23 that ships carrying nuclear cargoes are different and do require special precautionary measures. Articles 204-06 require the preparation of environmental assessments in situations that might lead to “substantial pollution of or significant and harmful changes to the marine environment.” The drafters of the Convention did not anticipate the current shipments of ultrahazardous radioactive cargoes, but the language in the Convention indicates that they recognized that a unique regime should apply to such shipments. All parts of the Convention must be viewed as equally important and the duty to protect and preserve the marine environment is just as much an international norm as the rights to innocent and transit passage. Because the relevant provisions of the Convention seem somewhat contradictory, a new regime establishing clear rules must be developed to explain how they are to be reconciled. The recent practices of states provide some guidance, and it is instructive that the shipping and nuclear nations are now engaged in a process of consultation and notification with regard to many of the affected coastal states. They undertake this practice based on their view that it is the responsible and appropriate action to take, required by norms of international law and comity. It is also instructive to remember that the 1995 shipment of the Pacific Pintail did change its course and leave the exclusive economic zones of the South American countries after their strong protests. A new international document recognizing the rights of the coastal states and the responsibilities of the shipping and nuclear states is needed to protect those concerned coastal states that are left out of the current informal consultative process.

This process should not be seen as an adversarial situation between the shipping and nuclear nations on the one hand and the concerned coastal states on the other. It is in everyone’s interest to protect the marine environment and coastal populations. If these shipments are to continue in the future, agreements must also be reached regarding the duty to prepare environmental impact assessments, the duty to consult with and notify affected states, the duty to prepare shore-emergency and salvage contingency plans, the duty to protect sensitive sea areas, and the liability regime that would govern damages resulting from accidents. Until agreements are reached on these important matters, the shipment of these extremely-dangerous materials will continue to violate fundamental norms of international law and comity, because they place coastal nations that receive no benefit from the shipments at grave risk of environmental disaster without any legal protections.

61 See, e.g., Law of the Sea Convention, supra note 2, arts. 17-19, 34-45
62 Id., art. 192.
63 Id., art. 206.
8. WHALES

Article 65 of the U.N. Law of the Sea Convention is explicit in requiring states to “work through the appropriate international organizations for [the] conservation, management and study” of cetaceans (whales and dolphins). The International Whaling Commission (IWC)\(^65\)---established in 1946---would appear to be the “appropriate international organization” and it has maintained a moratorium on all harvesting of whales since 1986, except for limited kills allocated to indigenous people, mostly in the Arctic region. Because they wished to continue harvesting whales, Norway, Iceland, the Faroe Islands (Denmark), and Greenland (Denmark) created the North Atlantic Marine Mammal Commission (NAMMCO) in 1992. Norway has consistently objected to the moratorium established by the IWC and has been harvesting minke whales in the North Atlantic under the blessing of NAMMCO.\(^66\) In addition, Canada, which is not a member of either the IWC or NAMMCO but sends observers to meetings of both organizations, has authorized its Inuit natives to harvest limited numbers of bowhead whales.\(^67\)

Can the obligation in Article 65 to “work through” an appropriate international organization be so easily circumvented as Norway and Iceland have tried to do by simply creating their own small regional organization? What is left of the duty to cooperate if Canada can authorize its citizens to harvest whales while not being a member of any organization? Although the duty to cooperate does not necessarily include the duty to agree, it certainly includes the duty to sit with the other party and exchange views, listening respectfully to the other position. Countries that walk out of the global organization and form their own regional body, or that refuse to join any organization, appear to be in violation of their duty to cooperate.

Do indigenous people have special rights to harvest whales? The International Whaling Commission has authorized some limited whaling to indigenous communities, but this action has been vigorously protested by Japan.
Iceland, and Norway who have argued that their nonindigenous whaling villagers have just as much right to harvest whales as do indigenous communities in the United States and elsewhere.68

In the winter of 1998-99, the Makah Indians embarked on a whale hunt pursuant to an 1855 treaty with the United States that guarantees their right to hunt whales, in search of their quota of five whales during each of the next five years.69 From their 32-foot cedar canoe, using a steel harpoon and a .50 caliber rifle, they searched for the gray whale, which can weigh up to 40 tons and be much larger than the Indians’ canoe. Environmental groups are vigorously protesting this effort because they believe it is part of a campaign to reinstate commercial whaling. No living Makah had been part of a whale hunt prior to this new search, and the current generation views this effort as an important step in restoring their culture and heritage. The gray whale was removed from the endangered species list in 1994, and it is thought that 23,000 of them inhabit the Pacific.70

Indigenous people tend to have a heightened awareness of the connections within ecosystems and the need to exercise proper respect for all living creatures.71 One Maori commentator has described the jurisprudence of indigenous law as one of “nurturance and use,” and has described the Maori approach as follows:

For the Maori people, te tikanga o te moana, or the law of the sea, is predicated on four basic precepts deeply rooted in Maori cultural values. First, the sea is part of a global environment in which all parts are interlinked. Second, the sea, as on of the taonga, or treasures of Mother Earth, must be nurtured and

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68 See, e.g., Kazuo Sumi, “The ‘Whale War’ Between Japan and the United States: Problems and Prospects,” 17 Denver J. Int’l L. & Pol’y 317, 328 (1989) ("Japanese small-scale whaling bears some resemblance to whaling by natives in Alaska, Greenland and the USSR...[I]t is unreasonable that while claiming the need to preserve an endangered culture, the United States is not ready to accept the existence of traditional culture in other countries.")


Other aboriginal groups have also received authorization to harvest whales. The International Whaling Commission has allowed the Alaskan Inupiat to hunt limited numbers of bowhead whales, even though they have been recognized as a highly endangered species, and the Chukotska aboriginal whalers from Russia have been given a quota to harvest gray whales (140 in 1995, of which they caught 85). Alma Soongi Beck, Comment, “The Makah’s Decision to Reinstate Whaling: When Conservationists Clash with Native Americans Over an Ancient Hunting Tradition,” 11 J. Envtl. L. & Litig. 359, 390-91, 411 (1996).

70 Id. at A13, col. 4.

protected. Third, the protected sea is a *koha*, or gift, which humans may use. Fourth, that use is to be controlled in a way that will sustain its bounty.\(^{72}\)

How is this dispute over whaling to be resolved? International law increasingly recognizes indigenous people as separate actors with rights to participate in international decision-making.\(^{73}\) Some scholars now argue that the whales also have rights that need to be considered.\(^{74}\) The duty to cooperate imposes a particularly difficult challenge in this situation, because the dispute concerns whether whales are a "resource" that should be shared or are beings with rights. Even among those who do not agree that whales themselves have rights, many argue that the ban on commercial whaling must continue because so much abuse occurred until the moratorium went into effect in 1982 that whalers and whaling nations simply cannot be trusted to adhere to any guidelines.\(^{75}\)

One commentator asserts that "To the extent that whales are a *res communis* resource, no individual nation, or group of nations, has the right to exploit them for economic gain when to do so may preclude humankind’s enjoying the

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\(^{74}\) Scheiber, *supra* note 66, at 16 refers to this position as "the deep green view." See Anthony D’Amato and Sudhir K. Chopra, "Whales: Their Emerging Right to Life," 85 Am. J. Int'l L. 21, 24 (1991) ("There is overwhelming evidence that whales communicate effectively with their own species and...have even developed interspecies communication"); Sudhir K. Chopra, "Whales: Toward a Developing Right of Survival as Part of an Ecosystem," 17 Denver J. Int'l L. & Pol'y 255, 267 (1989) ("[W]hales have exceptionally large brains with well developed areas controlling emotions; whales appear to be capable of enjoying life; playfulness and a sense of humor in small whales is well known; the nervous system of whales and the parts of the brain relating to the perception of pain are essentially similar to our own.")

\(^{75}\) William C. Burns, "The International Whaling Commission and the Future of Cetaceans: Problems and Prospects," 8 Colo. J. Int'l Env'tl. L. & Pol'y 31, 86 (1997) ("Given the inherent unreliability of statistical models that seek to estimate ‘safe’ catch levels for whales and the perilous state of the stocks of most of the great whales, it can be argued that whaling nations can no longer ensure that their actions can be harmonized with the aspirations of the rest of the world.").

alternative benefits that cetaceans may offer. Therefore, under the doctrine of res communis, the world community can demand a permanent moratorium on commercial whaling.” These “alternative benefits” include whale watching, which is commercially quite important in communities (like Hawaii) that rely economically on tourism, but for some these “alternative benefits” also include more profound interactions with the whales and many now view the effort to save the whales as one of the most important crusades of our time. Because of this moral dimension and the sharply conflicting views that humans have toward whales, because of the “inevitable and excruciating choice between environmental protection...and aboriginal rights,” as well as the dispute between the countries that view whales as a legitimate ocean resource and those that do not, this dispute eludes any easy or obvious resolution.

9. MARITIME BOUNDARY DELIMITATION

The extended maritime zones recognized in the 1982 Law of the Sea Convention have required all coastal and island nation to delimit new maritime boundaries with all of their neighbors. The overwhelming majority of these new maritime boundaries between opposite and adjacent states have been drawn in a spirit of cooperation and good neighborliness through face-to-face negotiations. Many imaginative solutions have been devised for unique geographical situations. In about a dozen situations, countries have agreed to establish joint development zones in disputed areas where both countries have been reluctant to abandon their claims but nonetheless wish to cooperate with their neighbor.

76 One commentator has compared the moral position of those who believe the lives of whales are sacred to that of “pro-life abortion opponents [who] believe in the sanctity of the pre-born.” Beck, supra note 69, at 404.

77 Id. at 408.

78 One compromise that has been proposed by a group of distinguished scholars would permit aboriginal subsistence whaling, other subsistence whaling, and artisanal whaling. Oran R. Young, Milton M.R. Freeman, Gail Osherenko, Raoul R. Anderson, Richard A. Caulfield, Robert L. Friedheim, Steve J. Langdon, Mats Ris and Peter J. Usher, “Subsistence, Sustainability, and Sea Mammals: Reconstructing the International Whaling Regime,” 23 Ocean & Coastal Mgmt. 117, 122 (1994) (“[S]mall-scale whaling should be regarded as permissible...when it secures historically-based practices of socially defined human groups that value whaling activities on a multi-dimensional basis.” Id. at 120.). This proposal was issued to influence policymaking at the May 1994 meeting of the of the International Whaling Commission, but it did not lead to a consensus solution. Caron, supra note 66, at 169.

Professor Scheiber, on the other hand, advocates maintaining the current moratorium, with an exemption only for “‘authentic’ indigenous peoples that engage in subsistence whaling.” Scheiber, supra note 66, at 37. This approach still requires resolution of three issues – whether indigenous groups that once whaled can revive the practice after a long gap, whether the concept of “subsistence whaling” would allow the indigenous groups to sell some of their catch commercially, and whether they should be permitted to use modern equipment to catch whales. Id.
and want to develop the marine resources for the benefit of the people of both countries. Some difficult boundaries have been submitted to the International Court of Justice or to an arbitral tribunal for resolution, but in these cases the decisions of the court have been accepted by the parties and implemented without further controversy. These decisions have articulated a rich and relatively coherent set of standards that can be applied to the relatively few boundaries that remain to be delimited.

Two locations have, however, defied resolution, because of the deep political divisions in these regions and the challenge presented by the geography. In the South China Sea and in the Aegean Sea, the countries bordering on these seas have deep differences of viewpoints that do not appear to be susceptible to logical resolution. In the South China Sea, the problem is aggravated by the two dozen or so tiny Spratly islets that have never been inhabited historically but now have garrisons of soldiers clinging to their limited land area in order to support their nation’s claims. China, Taiwan, Vietnam, Malaysia, Brunei, and the Philippines all have claims to all or some of these islets and to the maritime space in the South China Sea.

In the Aegean, islands also create part of the problem, but in this case the islands have long been inhabited by Greeks. The problem is that they are nestled close to the Turkish mainland and that if they were permitted to generate full maritime zones, Turkey would be left with almost no maritime space of its own in the Aegean. In fact, Turkey has insisted that Greece claim a territorial sea of no more than six miles around its islands so that Turkey will not have to fly over or sail through Greek territorial sea in order to get into the Mediterranean.

In both these situations, the most logical solution would be to establish a joint-development or shared zone of some sort to recognize the rights of all claimants, diffuse the tension, and allow whatever resources may exist to be developed. In the South China Sea, the claimants are reluctant or even unable to abandon their claims because of domestic pressures, and potentially important hydrocarbon reserves remain untapped. In the Aegean, the resources appear to be more limited, but the security and navigational interests of both nations are strong and deserve to be recognized and protected. In both situations, the pragmatic approach would be to be somewhat altruistic, recognizing the importance of the claims of the other claimant(s), and devising a shared regime that will serve the interests of each party.

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79 See, e.g., Mark J. Valencia, Jon M. Van Dyke, and Noel A. Ludwig, Sharing the Resources of the South China Sea 183-87 (1997).
81 See Valencia, Van Dyke, and Ludwig, supra note 79, at 17-76.
82 See Jon M. Van Dyke, “The Aegean Sea Dispute,” supra note 80, at 401-402.
10. CONFIRMING PRINCIPLES OF PRAGMATIC ALTRUISM
(OR ALTRUISTIC PRAGMATISM?)

These examples illustrate that countries have been able to reach important agreements on difficult ocean-resource issues, but other controversies remain unresolved. This concluding section addresses some of the fundamental principles of international cooperation and resource management that need to play a central role in resolving the ocean resource conflicts of today and tomorrow.84

(1) The Duty to Protect and Preserve the Marine Environment

Customary international law imposes on nations the duty to “take adequate steps to control and regulate sources of serious environmental pollution or transboundary harm within their territory or subject to their jurisdiction.”85 This central responsibility is now codified in Article 192 of the 1982 United Nations Law of the Sea Convention,86 which simply and elegantly says, “States have the obligation to protect and preserve the marine environment.” Article 235(1) reinforces this obligation by saying:

States are responsible for the fulfillment of their international obligations concerning the protection and preservation of the marine environment. They shall be liable in accordance with international law.

The 1982 Convention is now in force for the more than 120 countries that have ratified it, and most commentators view the environmental provisions as reflecting customary international law.

84 Others have put together similar lists of fundamental principles, varying them somewhat depending on the context in which they are offered. One recent international environmental law casebook, for instance, listed the following as “principles shaping global environmental and development policy”: state sovereignty, right to development, common heritage of humankind, principle of common concern of humankind, obligation not to cause environmental harm, state responsibility, principle of intergenerational equity, common but differentiated responsibilities, the precautionary principle, the principle of prevention, duty to assess environmental impacts, the principle of subsidiarity, good neighborliness and the duty to cooperate, duties to provide prior notification and to consult in good faith, duty not to discriminate regarding environmental harms, equal right of access to justice, the polluter and user pays principle. Hunter, Salzman, and Zaelke, supra note 18, at 326-85. The failure to discuss all of these principles here should not be viewed as lack of support for the importance of those not addressed in this paper.


86 Law of the Sea Convention, supra note 2.
(2) The Duty to Avoid Causing Injury to Others

The duty to avoid causing injury to others—often articulated in Latin, sic utere tuo ut alium non laedas—is also a basic norm of international law. Article 194(2) of the Law of the Sea Convention requires states “to take all measures necessary to ensure that activities under their jurisdiction or control are so conducted as not to cause damage by pollution to other States and their environment.” Another form of this principle can be found in Article 87(2) of the Convention, which says—after the freedoms of the high seas are listed—that “[t]hese freedoms shall be exercised by all States with due regard for the interests of other States in their exercise of the freedoms of the high seas ...” The principle of “responsibility and liability” found in Article 235(1), quoted above, also reaffirms and reinforces this duty.

(1) The Duty to Consult

International law requires prior consultation whenever the activity of one nation creates a significant risk of harm to another nation.97 Risk of harm can be expressed as the “magnitude of risk times the magnitude of the conceivable harm,”88 and is assessed on a case-by-case basis.89 A risk of harm could be significant, therefore, when the possibility of damage to marine resources is small but the consequences of such an accident are great. Before embarking on “an activity with significant risk, the acting state should notify potentially affected states of its plans in sufficient time to permit consultations if the risk of harm is arguably significant, and ... engage in consultations if the potentially affected state or states make a plausible case that the risk of harm is indeed significant.”90

The duty to consult flows from the duty to consider the interests of other states and the duty to inform. The duty to consider the interests of other states was recognized with regard to fishing rights in, for instance, the *Fisheries Jurisdiction* cases,91 and has been codified in a number of international treaties,92 including Article 87 (on the freedom of the high seas) of the 1982 U.N. Convention on the Law of the Sea. Article 87 has been described as “the most prominent instance in which the duty to consult must be implied from a duty to

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88 Kirgis, supra note 87, at 360.
89 Id.
90 Id. at 360-61.
91 Id. at 363 (citing Fisheries Jurisdiction Cases (U.K. v. Iceland), 1974 I.C.J. 3, 28 and 175, 196).
92 See treaties cited in id., at 364 n.16.
consider other states' interests."93 Another important recent recognition of the
duty to consult is found in the 1979 Convention on Long-Range Transboundary
Air Pollution.94

The duty to inform has similarly been identified as "a general principle of
international environmental law."95 "The underlying idea 'is to prevent the
commission of unlawful transboundary interferences and to prevent other States
from being confronted with faits accomplis. The principle may, therefore, also
be looked upon as an application of the principle of good faith in international
relations."96 The International Court of Justice recognized this duty to inform in
the Corfu Channel Case, where Albania was held to have the duty to disclose
the presence of mines in the Channel, even though Albania itself apparently did
not lay the mines.97

The duty to consult is found in a variety of international treaties,
agreements, and practices. The International Atomic Energy Agency (IAEA)
1977 Ad Hoc Advisory Group has stated, for instance, that nations that would
be affected by nuclear tests should be consulted.98 In Europe, the Euratom
Treaty requires nations to consult regarding their plans for disposing of
radioactive waste,99 and "a prior consultation norm has arisen ... regarding new
activities near an international boundary if there is substantial risk of
appreciable transfrontier air pollution or other significant disamenity.100

State practices also show that consultation is the norm. The Restatement
(Third) of Foreign Relations, which codifies obligations with regard to the
environment, contains a commentary reporting that "a state has an obligation to
warn another state promptly of any situation that may cause significant pollution
damage in that state. A state also has an obligation to consult with another state
if a proposed activity within its jurisdiction or control poses a substantial risk of

93 Id. at 364.
94 Convention on Long-Range Transboundary Air Pollution, Nov. 13, 1979, UN Doc.
ECE/HLM.1/R.1 (Oct. 22, 1979), reprinted in 18 I.L.M. 1442 (1979), art. 5:
Consultations shall be held, upon request, at an early stage between,
on the one hand, Contracting Parties which are actually affected by
or exposed to a significant risk of long-range transboundary air
pollution and, on the other hand, Contracting Parties within which
and subject to whose jurisdiction a significant contribution to long-
range transboundary air pollution originates, or could originate, in
connexion with activities carried on or contemplated therein.
95 Daniel G. Partan, "The 'Duty to Inform' in International Environmental Law," 6
Bos. U. Intl. L. J. 43, 63 (1988) (citing World Commission on Environment and
Development, Experts Group on Environmental Law, Environmental Protection and
Substantial Development 98 (1987)).
96 Partan, supra note 95, at 63 (quoting from the Experts Group Report, supra note 95,
at 98).
98 Kirgis, supra note 98, at 125.
99 Id. at 97.
100 Id. at 128.
significant injury to the environment of the other state.\textsuperscript{101}

In North America, there is a “norm requiring consultation among the littoral states before an activity is undertaken that is particularly hazardous because of the substance involved or because of the fragile ecology of the area (as in the case of some straits).”\textsuperscript{102} The United States consulted with Pacific Island governments when it was thinking of storing hazardous waste on Palmyra Island,\textsuperscript{103} and Japan consulted with countries that would have been affected by its proposal to dump low level radioactive waste at sea.\textsuperscript{104} An example of an international arbitral tribunal recognizing the duty of prior consultation – and negotiation – is found in the decision the Lake Lanoux Arbitral Tribunal.\textsuperscript{105}

(4) The Precautionary Principle

The precautionary principle remains controversial, because some commentators view it as being too vague,\textsuperscript{106} and others view it as unrealistic, but it continues to be invoked in treaties and documents because it reflects the view that it is necessary to be extra vigilant in our stewardship of ocean resources, especially in light of the many mistakes we have made in recent years. In an earlier publication, I summarized the precautionary principle as follows:

It requires policymakers to be alert to risks of environmental damage, and the “greater the possible harm, the more rigorous the requirements of alertness, precaution and effort.” It rejects the notion that the oceans have an infinite or even measurable ability to assimilate wastes, and it instead recognizes that our

\textsuperscript{101} Restatement (Third) of Foreign Relations, sec. 601, at 107 (1987).
\textsuperscript{102} Kirgis, supra note 63, at 130.
\textsuperscript{103} Id. at 170.
\textsuperscript{104} Id. at 169.
\textsuperscript{106} See, e.g., Daniel Bodansky, “Scientific Uncertainty and the Precautionary Principle,” 33 Environment 4 (Sept. 1991) (“Although the precautionary principle provides a general approach to environmental issues, it is too vague to serve as a regulatory standard because it does not specify how much caution should be taken”). But see also Daniel Bodansky, “Remarks: New Developments in International Environmental Law,” 85 Am. Soc. Intl. L. Proc. 413 (1991) (“Indeed, so frequent is its invocation that some commentators are even beginning to suggest that the precautionary principle is ripening into a norm of customary international law”).

knowledge about the ocean’s ecosystems may remain incomplete and that policymakers must err on the side of protecting the environment. It certainly means that, at a minimum, a thorough evaluation of the environmental impacts must precede actions that may affect the marine environment. All agree that it requires a vigorous pursuit of a research agenda in order to overcome the uncertainties that exist.

Some commentators have explained the precautionary principle by emphasizing that it shifts the burden of proof: “[W]hen scientific information is in doubt, the party that wishes to develop a new project or change the existing system has the burden of demonstrating that the proposed changes will not produce unacceptable adverse impacts on existing resources and species.” Others have suggested that the principle has an even more dynamic element, namely, that it requires all users of the ocean commons to develop alternative nonpolluting technologies.107

Some commentators and some diplomats have tried to draw a distinction between the “precautionary principle” and the “precautionary approach.”108

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108 One recent report explains the “precautionary approach” in the context of the 1995 Straddling and Migratory Stocks Agreement, supra note 36, as follows:

The precautionary approach, in summary, embodies six main elements:

* caution (to be applied widely, to protect resources and preserve the environment); more caution required when uncertainty; absence of adequate information no reason for failing to take measures;

* information and analysis (obtain and share best available information; need to deal with risk and uncertainty);

* reference points (use of limit and target reference points for conservation and management objectives respectively; develop plans as LRP[s] [limit reference points] are approached or TRP[s] [target reference points] exceeded);

* non-target species, associated or dependent species and their environment (assess impacts of fishing; ensure conservation of species and protection of habitat);

* new or exploratory fisheries (early adoption of cautious measures or PRP[s], remaining in effect until fishery impacts assessed; gradual development; set provisional reference points); and

* natural phenomena (adopt conservation and management measures to ensure fishing does not exacerbate the situation).

Report of the Eleventh Meeting of the Standing Committee on Tuna and Billfish, supra
arguing that the latter is more acceptable as an international norm because it lays out a flexible perspective rather than a rigid rule. However these disputes are resolved, it is now clear that a norm of precaution has emerged and that our collective stewardship of shared resources requires caution before we embark on new activities that will alter the marine environment. Certainly the inclusion of the precautionary standard in the 1996 Protocol to the London Convention, 1972, and in the 1995 Straddling and Migratory Stocks Agreement provides strong evidence that this approach is here to stay.

(5) The Duty to Prepare an Environmental Impact Assessment

The United States has required environmental impact assessments for all major governmental activities since 1969. The National Environmental Protection Act (NEPA) requires that each project be fully assessed before construction begins. This assessment process includes not only a full discussion of all likely impacts of the project, but it also requires public input and responses to the public comment. The resulting assessment is an interdisciplinary document that allows decision-makers to understand the full dimensions of the project and the alternatives that exist.

note 41, at 67.

109 See, e.g., Principle 15 of the 1992 Rio Declaration on Environment and Development:

In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.


110 One clear example of a duty that flows from the precautionary principle or approach is the duty to prepare for foreseeable emergency contingencies. With regard, for instance, to a ship carrying ultrahazardous radioactive materials, the consequences of an accident would be so grave that emergency procedures must be in place to address possible fires, collisions, and sinkings. These procedures must include access to appropriate ports, availability of tugboats and firefighting equipment, and plans for retrieval in the event of a sinking.

111 See supra text accompanying notes 19-35.

112 See supra text accompanying notes 36-45.

113 Another example of the reliance on the precautionary approach is found in Western Pacific Regional Fishery Management Council, A 20-Year Report 26 (1998), which states proudly that the Council has established “a precautionary management approach to fishery conservation and management” as evidenced by its establishment of a moratorium and then a limited-entry program “in response to the rapid entry of longline vessels into the Hawaii-based fleet.”

114 42 U.S.C. sec. 4321 et seq.
This obligation to prepare environmental impact assessments has now been universalized through global and regional conventions. Article 206 of the Law of the Sea Convention requires states undertaking "activities under their jurisdiction or control [that] may cause substantial pollution of or significant and harmful changes to the marine environment [to], as far as practicable, assess the potential effects of such activities on the marine environment and...communicate reports of the results of such assessments" to nations that may be affected by the project.\(^{115}\)

Each environmental impact assessment should discuss the following subjects if it is to fulfill its goal of providing solid information to decision-makers:

1. *The probable impact of the proposed action on the environment.* This requires scientific analysis but should also include information from other disciplines relevant to the project.

2. *The adverse environmental effects that cannot be avoided if the proposal is implemented.* This listing gives decision-makers a view of the negative effects of the project.

3. *An analysis of alternatives to the proposed action and a comparison of the costs and benefits of each alternative with the proposed action, including the alternative of no action.* This comparative analysis is crucial to allow the decision-makers to determine whether all aspects of the proposal have been well designed. The alternative of no action is always important, so that the costs and benefits of the status quo can be understood.


> Environmental impact assessments, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority.

In the Pacific, this obligation has similarly been recognized with regard to all activities that may have substantial effects on the marine environment. In the Convention for the Protection of the Natural Resources and the Environment of the South Pacific Region, Article 16(2) says that

> Each party shall, within its capabilities, assess the potential effects of projects on the marine environment, so that appropriate measures can be taken to prevent any substantial pollution of, or significant and harmful changes within, the Convention Area.

Convention for the Protection of the Natural Resources and Environment of the South Pacific Region, Nov. 25, 1986, reprinted in 26 I.L.M. 38 (1987). Article 16(3) goes on to say that public comment should be part of the assessment process and that the written results of these assessments shall be disseminated to all interested parties.
4. The relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity. This examination of the long-term consequences is essential to deciding whether to go ahead with the project.

Any irreversible and irretrievable commitments of resources that would be involved in the proposed action if it is implemented. Again, this allows the decision-makers to understand the full implications of the project.

The information in an environmental impact assessment is of essential importance, but the process by which it is undertaken is also important. A sound environmental impact assessment should be the product of interdisciplinary analysis. The scientific data should be analyzed in conjunction with the impact on the human community that will be affected by the proposed project. Ultimately, the scientific data are being collected and analyzed to provide answers for social and political questions. The scientists, therefore, cannot alone make the decision or even provide all the relevant information. Social scientists and persons from other relevant disciplines must also be involved to translate the scientific data and provide a policy perspective on the project.

It is crucial that ample opportunities be provided for public input during the assessment process. Both written and oral comments should be encouraged and responses must be provided to each comment. The best way of undertaking this process is to provide public hearings in which the persons who have prepared the assessments listen to the concerns of the affected public.

(6) The Polluter-and-User-Pays Principle

This common-sense approach is designed to internalize the real costs of a project, including the external environmental costs, and thus to allow decision-makers to evaluate each activity in relationship to its alternatives. Nuclear power, for instance, has frequently been viewed as a cheap form of energy, because the costs of disposing of the nuclear wastes and decommissioning the power plant after its short life is over are frequently ignored. But these activities are incredibly costly and present difficult issues of intergenerational equity as well as extraordinarily difficult choices regarding which region should bear the burdens of pollution so that other areas can benefit. It is crucial to establish realistic liability and compensation regimes so that those who suffer can collect from those who benefit.116

The polluter-pays principle may have the effect of establishing a regime of strict liability in many circumstances. This approach appears to have been

116 See generally Hunter, Salzman, and Zaelke, supra note 18, at 108-22 and 382-85
recognized as a principle of international law in situations involving hazardous activities in the *Trail Smelter* arbitration\textsuperscript{117} and the *Corfu Channel* case.\textsuperscript{118} The country conducting the risk-creating activity must provide compensation to the victims for their resulting injuries.

(7) *The Duty to Cooperate*

The Duty to Cooperate is not just a vague and meaningless commitment. It has specific components that must be followed in situations where the actions of one state have a substantial likelihood to affect the resources, security, environment, or well-being of another state.

1. *The state planning an activity that is likely to affect the resources or environment of another state has a Duty to Inform or Notify the other state about the action being contemplated.* This responsibility includes providing as much technical detail and policy analysis as the other state needs to evaluate the potential impacts. In many cases, it will include preparing a full environmental impact assessment.

2. *The state contemplating the activity then has a Duty to Consult with the other affected state.* This responsibility requires listening to and understanding the position of the other side. It requires allowing the other side sufficient time to prepare whatever factual data may be relevant and to examine this new information with an open mind.

3. *If differences continue, each state has a Duty to Negotiate in Good Faith, with the goal of reaching an agreement acceptable to both states.* This Duty to Negotiate is similar to the responsibility of good-faith negotiations that exists in a labor-management dispute, and many judicial decisions and statutes give specific meaning to this requirement. It includes being willing to come to meeting after meeting, to explore alternatives, and to consider possible solutions. Most importantly, it requires each side to consider compromise solutions with an open mind in order to solve the impasse.

4. *Each state has a Duty to Address the Issues at the Highest Level of Decision-making.* If mid-level negotiators cannot reach an agreement, then the countries' leaders must become personally involved or appoint personal representatives to address the controversy and seek a resolution.

\textsuperscript{118} *Corfu Channel* Case (U.K. v. Albania), 1949 I.C.J. Rep. 4.
5. If the conflict remains unresolved, then the states have a Duty to Seek Third-Party Dispute Resolution, through nonbinding mechanisms such as conciliation or mediation or binding devices such as arbitration or an international tribunal. The Duty to Cooperate includes somehow finding an appropriate resolution, and if direct negotiations do not succeed then assistance from third-party procedures becomes obligatory.

11. CONCLUSION:
THE RESPONSIBILITY TO SHARE IN THE TWENTY-FIRST CENTURY

This paper began by describing two visions of sharing that dominated earlier eras. When he wrote in the early 1600s, Grotius championed the idea of shared opportunities. Everyone should have equal opportunities to ply the seven seas and equal opportunities to harvest the seafood bounty of the oceans. How much of the common resource each nation wound up with depended, of course, on how much effort it put into the process, how much technology it had, and how effectively it competed with others.

Ambassador Arvid Pardo, on the other hand, when he spoke in 1967, enunciated a vision of sharing the bounty, of distributive justice, of making the poor richer and equalizing the gap between the haves and the have-nots. He felt this idealistic vision was appropriate because he thought the world had found a new, previously unknown, resource with enormous potential. It was as if the planet had won a lottery conducted by some alien force, and it was only appropriate that such a windfall should go to the most needy among us.

Today, we know that this vision of a bountiful windfall was unrealistic, that the nodules of the deep sea-bed may never be commercially viable, and that if they are exploited it will be only because some risk-taking entrepreneurial nation or organization has been willing to invest substantial amounts in research and exploration to make this dream a reality. We now live in a world of shrinking fishery resources that must be divided among a growing global population. Disputes among fishing and coastal nations for the depleted stocks will inevitably continue and probably accelerate. We now have a planetary consensus that entrepreneurial enterprise should be rewarded, and that the poorest nations should receive only a snippet, if any, of the bounty, but we also have a realization that “states” are not the only relevant international decision-makers and that indigenous peoples and the animals themselves deserve to be heard from.

The world’s common resources must be shared if they are to be exploited at all. Growing populations need seafood protein, which is a potentially renewable resource, but one that can be obtained on a sustainable basis only if all nations and entrepreneurs cooperate to ensure that the fish stocks can thrive and maintain their numbers into the future. Even in an age of scarcity and
selfishness, therefore, the requirement to cooperate and share is paramount. It is a pragmatic necessity for the selfish as well as the idealistic.

Our challenge is to make that ethic of pragmatic altruism meaningful so that the common resources will remain available to us and to those who follow. The precautionary principle, the polluter-pays principle, the duties to notify, consult, and cooperate, and the duty to assess the environmental consequences of new initiatives are not mere idealistic mantras, but are important and practical principles that the world must embrace if its people are to have enough food to eat. Sharing and cooperation are now a necessity, not just an idealistic vision.