I. INTRODUCTION

Twenty years ago, many well-regarded marine biologists and fishery-management experts objected to the notion that marine fish stocks could actually be "depleted" or "exhausted." Policy makers and even many scientists persistently resisted the idea that a marine fish population or species could be wiped out despite large-scale changes in the marine fishing situation in modern times, including the modernization of fishing fleets. The industrialization of fishing vessels began with the introduction of steam-trawler fishing in the late nineteenth century. This was followed by other innovations in gear and vessel technology, such as the introduction of giant factory ships that began operating in distant waters in the 1930s. The impact of this industrialization and modernization of fleets, which accelerated...
dramatically after World War II, was magnified by the relentless expansion of fishing effort. As a consequence of this expanded effort, the harvest of fish grew from 17 million tons to 69 million between 1950 and 1974. By 1990 it had risen to almost 90 million.2 In 1900, the world landings of marine fisheries had been only an estimated 3 million tons.

However, when collapses of commercial fisheries occurred – such as the dramatic crash of the Monterey-based sardine fishery, once one of the world’s most intensive fisheries, after 1948 – the fishermen tended to argue that the stocks had simply migrated elsewhere. Marine scientists debated whether the loss of the Monterey fishery was due to overfishing or instead was due to some natural process.3 Through the late 1970s, it remained a respectable scientific and policy position to view as unfounded and alarmist the idea that actual loss of fisheries on a long-term basis might be the result of overfishing. There was also a widely-held view among fishery oceanographers and biologists that the harvestable volume of marine fisheries, called the “latent” volume of the biomass, was many times the already inflated tonnage levels that were then being harvested.4

These views have changed radically in the last twenty years. Today, the accepted premises of debate on ocean fishery issues include as axiomatic the possibility that severe and possibly fatal damage can be done to such resources by excessive fishing. To be sure, there is deep and lasting controversy as to what measures need to be taken in response to the possibility of such damage. But now it is universally understood that the clock has been ticking; today, we have a serious crisis in marine fisheries and ocean environment, and consequently a crisis in ocean resources governance.

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4 For example, Wilbert M. Chapman, internationally recognized in his day as an authority on fisheries science and policy, predicted marine fishery harvests at an upper bound of 400 million tons in the year 2000. Wilbert M. Chapman, Seafood and World Famine – A Positive Approach, Address in the Symposium on Food from the Sea (Sept. 23 1969) (transcript available in the Milner Schaefer Papers, Scripps Institution of Oceanography Archives, U.C. San Diego). This was an exceptionally optimistic estimate for the day, but others who estimated lower latent resources in fisheries took a positive view of the long-run potential and certainly did not worry much about depletion, if they even admitted that word to discussion.
The data published annually in the United Nations Food and Agriculture Organization ("FAO") reports have told the story vividly. Ever larger and more powerful fishing vessels, increasingly efficient gear, and—most ominously—a rapidly increasing tonnage of fishing vessels, impelled by large governmental subsidies for construction and operation, pushed the catch levels up five-fold between 1950 and 1990. Then, after 1989, catch levels began to slump. Several long-established deepwater and coastal fisheries collapsed altogether, among them a once-giant fishery for Northwest Atlantic cod that had been working for centuries. Moreover, the yield per unit of effort also began to show a decline, a sure indication that stocks were being reduced in numbers and that their reproductive potential was being damaged.

The FAO data since the mid-1990s have shown that some 60% of the world's fisheries are at risk at different orders of magnitude. Now some 44% are assessed as being "fully exploited." This means that they may already be at the tipping point of overfishing and progressive depletion. In addition, the pressure on fisheries may be higher now that the ecological balance may be adversely affected with only slight variations in either environmental conditions or fishing effort. The truly shocking datum, however, is that one in six of the world's ocean fisheries is now evaluated as "overexploited" or at the point where commercial use will soon be no longer feasible. Excluded from current assessments in the FAO reports are some once-important fisheries that have already been so fully depleted that they are left out of the calculations. Among the fisheries located within the United States' 200-mile Exclusive Economic Zone, where foreign fishing is not permitted, more than one third of the stocks are deemed over-utilized, and another 44% fully-utilized.

Consumers have felt the effects of the fishing decline, as the global catch of fish on a per capita basis fell by some 10% between 1988 and

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7 Same note.
8 Id.
Moreover, a large proportion of the volume rise in catches of the previous decade consisted of fish species not used for table food, but rather only for animal feed or other secondary products. This put further pressure on the per-capita food fish supply globally. The consumer price index for fish products in the U.S. market accordingly was pushed steadily upward in the 1980s, far exceeding the rates of price increase for poultry or meats. More recently, prices for certain fish species have risen far out of the reach of ordinary middle-class consumers in developed countries. Some of the once-popular species have disappeared from markets altogether because of fishery closings imposed by coastal state governments or international regulatory bodies.

All of this evidence sounded the alarm so urgently that even the popular media finally began to give the fisheries crisis some attention. Attention had already been drawn to the environmental issues facing the oceans by the damaging oil spills occurring in several parts of the world. There was also increasing concern with regard to marine mammals. The Marine Mammal Protection Act had been adopted by the United States, and was enforced not only by direct regulation but also by imposition of trade and fishing-access sanctions on nations that disregarded protection of mammals in their fishing operations. However, the sanctions policy merely led to extensive re-flagging and shifting national shares of the tuna harvest—and ultimately to a successful challenge of the U.S. policy in the Tuna/Dolphin decisions of the international-trade tribunals under the General Agreement on Tariffs and Trade ("GATT").

Meanwhile, the devastating enterprise of killing off the bulk of

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11 One consequence has been the increasing share of table fish sales derived from aquaculture, a technology that generates some troubling environmental problems that have become an issue of prime importance in the debates concerning protection of ocean as well as freshwater habitats.
global whale stocks continued, an activity especially difficult to comprehend in light of the destructive effects of the whaling activity conducted from the 1950s to the mid-1980s. Whale species were brought to the brink of extinction or even destroyed completely. Moreover, this colossal slaughter was conducted, not in some Hobbesian universe of laissez-faire activity without the scrutiny of a regulatory regime, but rather under the authority of the International Whaling Commission. The rising, impassioned debate over the cetacean kills helped push ocean resources issues more generally into the central realm of public discourse, and helped push the issue of the plight of marine fisheries to a place of visibility that the media had to acknowledge.

II. THE U.N. RESPONSE

In the mid-1990s, there was a dramatic acceleration of events and an intensification of debates. The United Nations mobilized to act on the issue of drift-net fishing on the high seas by highlighting the damage that was being done to habitats, as well as to fish stocks, by this type of gear. An international agreement to limit the use of drift-nets followed this effort. The U.N. efforts also produced a general agreement on compliance issues and implementation techniques, and the Fish Stocks Agreement of 1995, which provided the juridical foundation of a newly structured international regime for highly migratory species and for so-called "straddling stocks" (i.e., fish stocks partly inside economic zones and partly outside; and stocks located in the economic zones of two or more nations, and hence under the regulatory authority of two or more nations). These measures in the U.N. represented part of a major effort to elaborate and specify new principles of international fishery law. This effort was built upon the structure that had been put in place by the 1982 U.N. Convention on the Law of the Sea ("UNCLOS"), but which had proved inadequate to halt the destruction of fisheries and the marine environment that they inhabited.

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When the UNCLOS agreement was signed in 1982, it was done amidst hopes that a new era of effective ocean governance would be inaugurated by the Convention, involving the universal acceptance of innovative principles in a comprehensive legal regime. When the final draft of UNCLOS was approved by formal vote in the March-April 1982 meeting of the Third United Nations Conference on the Law of the Sea, it represented the culmination of a treaty process that had its origins in technical and legal studies by the U.N. in the mid-1950s and descended directly from the Geneva conventions on oceans law signed in 1958. Unlike those earlier agreements, UNCLOS was an attempt at providing a broad-based, comprehensive approach to protecting the world’s oceans, rather than an effort at codifying rules for particular problems or sectors of ocean use. UNCLOS was to be a framework document, treating nearly the entire range of outstanding oceans-law issues, from marine navigation, fisheries, and marine environment to the difficult question of maritime jurisdictional boundaries.

The 1982 UNCLOS agreement was necessarily a compromise package – a mélange of bargains and trade-offs. One of the central themes in the long period of its negotiation had been the idea of the oceans as “the Common Heritage of Mankind,” an idea proclaimed famously by Ambassador Arvid Pardo in U.N. General Assembly debates fifteen years earlier. This idea expressed the aspiration that UNCLOS would provide a firm foundation for a system of just and equitable allocation of ocean resources for the current generation’s use. Equally, however, it was meant as a statement of legal norms indicating the moral imperative of protecting the marine environment and its resources – including fisheries, although it had been introduced at the time with reference specifically to seabed mineral resources – as a legacy for future generations. As a corollary to that central idea, the agreement specified duties and obligations of signatory states with regard to the sustainable use of ocean resources.

UNCLOS only incompletely realized these objectives. An abiding difficulty has been political in nature – the failure of the United States to ratify the Convention. The socialization of seabed resources was

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19 Pardo’s role and ideas are discussed in ROBERT FRIEDHEIM, NEGOTIATING THE NEW OCEAN REGIME 29-30 (1993).
unacceptable to many of the advanced industrial nations, including the United States; not until 1994 was Part XI of the Convention, regarding the seabed, effectively amended by a new agreement that largely eliminated the features of the original convention to which there had been such strong resistance.\textsuperscript{31}

Nonetheless, the UNCLOS document did stand as a powerful expression of community-oriented altruistic principles, beyond questions relating to the seabed minerals issue. Of particular weight in the shaping of subsequent world discussion, as the fisheries crisis became evident, were the broad statements of principle in UNCLOS regarding general prescribed norms of ocean use, together with the requirements (such as duties to cooperate) that were placed upon signatory states in regard to sustainability in resource exploitation and protection of the marine environment from degradation.\textsuperscript{31} The new norms and obligations were broadly phrased, and were often vague; compliance was to be achieved largely by the consent of individual governments. Being largely rhetorical and aspirational, the obligations were seen by many critics as having little real use in controlling the practices of signatory states. Although such provisions of the agreement were in that sense only 'soft law,' UNCLOS provided a juridical foundation upon which more detailed and specific agreements could be built at a future time. As will be discussed below, 'hard law' is also now emerging in many crucial areas of law and policy.

The 1982 Convention also contained a provision requiring signatory states to submit disputes for adjudication and settlement, specifying choices as to mechanism and forum. This institutional and juridical thrust of UNCLOS culminated in the establishment of the U.N. Tribunal on the Law of the Sea. This body has handed down its first decisions and has already had an impact on the jurisprudence of international law.\textsuperscript{32} To many observers, compulsory submission of disputes for adjudication or settlement was perhaps the most important single substantive contribution to conflict reduction, institutional development, and long-term fostering of cooperation and


\textsuperscript{32} See UNCLOS, supra note 16, Part XII, Protection and Preservation of the Marine Environment.

community interests.

The foregoing features of UNCLOS were supportive of community interests and expressed altruistic and conservationist principles, usually in 'soft law' terms. They were counter-balanced, however, by a strong reaffirmation and expansion of the prerogatives of traditional sovereignty, by which states could act legitimately in their own interests, with broad discretion, within the terms of the new rules of law. This obverse side of the Convention was embodied in the provisions authorizing the extension of coastal states' territorial seas out to a distance offshore of twelve miles, and also the authorization of Exclusive Economic Zones ("EEZs") out to the 200-mile line or the extent of the continental shelf. UNCLOS applied certain general constraints to coastal states' management policies regarding their EEZs, such as duties to cooperate. It also specified other types of obligations to protect fish stocks and marine environment, applying them to flag state operations on the high seas as well as to management programs in the national EEZs.

As a practical matter, however, UNCLOS gave the coastal states nearly complete authority to determine unilaterally how to interpret and apply these provisions. As a result, the effectiveness of these new statements of law as constraints on fisheries policy and operations was doubtful from the outset. Because the inclusion of the 200-mile EEZ provision was so clearly contrary to the altruism required by the common heritage idea, this feature of UNCLOS evoked bitter criticism from many critics and participants in the negotiations— including Ambassador Pardo himself, who charged that the EEZ provision was a cynical betrayal of the convention's fundamental original purpose.

The decision to validate the ocean-enclosure movement through inclusion of the EEZ provision had an enormous impact upon the division of authority over marine fisheries, for an estimated 85% or more of commercially exploitable fish stocks and all then-known exploitable seabed mineral resources were located in the EEZ ocean areas. It was a virtual certainty, moreover, that UNCLOS and its high-sounding statements of principle could not prevent the EEZs

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25 In this respect, UNCLOS validated an ocean enclosure movement already well under way as the result of unilateral actions by a large number of coastal states, including the United States, which declared 200-mile zones. See JUDA, supra note 17; BURKE, supra note 17.
26 UNCLOS, supra note 16, Part V, Exclusive Economic Zone.
from serving mainly as a form of protection against foreign competition in coastal fisheries. It remained a matter of speculation as to whether the EEZs would also result in nationally imposed regimes for fishery management that were more effective in conserving fish stocks than the earlier “freedom of the seas” regime had permitted.

In fact, in the nearly two decades since UNCLOS validated the 200-mile EEZs, every coastal state with major fishing interests has failed to sustain the level of stocks in its fisheries. The picture today is one of almost universally negative results from unilateral management. Understandably, public attention has focused heavily upon issues on the blue-water high seas, such as the dramatic whaling situation and Canada’s use of force in the “Turbot War” to stop Spanish fishing of straddling stocks in the Northwest Atlantic outside the Canadian EEZ outer boundary line. But the more mundane and long-term developments in the EEZ regimes (constituting 40% of the world’s ocean waters) have played an even more significant role in producing the disaster that we now face in the marine fisheries globally:

III. THE U.S. DEBATE

The history of the U.S. Exclusive Economic Zone regime is now well-known, thanks largely to the heated and prolonged debate in Congress between 1992 and 1994 over reauthorization of the Magnuson Fisheries Conservation and Management Act (“FCMA”) and its successor acts that defined the rules of the fisheries regime in the vast offshore, coastal ocean area of this country. The picture is one of ambitious but ambiguous regulatory design, confusion of scientific and political visions, and lack of administrative will. The main objective of the original Act in 1976 was clearly to formulate rules that would drive foreign fishing fleets out of the nation’s coastal waters, which were at that point effectively reserved for U.S. fishing only to the extent of twelve miles. In this respect, it was entirely successful, for by 1989, foreign fishing had been entirely displaced by U.S. flag vessel activity, while the volume of fish taken remained nearly level. Meanwhile, fishing overcapacity became a problem with serious ramifications. While the American fleet shared in the world trend

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towards mechanization, larger scale, and increasing efficiency of gear and vessel operation, it soon was producing a decline in the catch per unit of effort on the water, while at the same time contributing to the full utilization or over-utilization of stocks. The scientific standard of Optimal Yield, specified in the original Act, was qualified in such a way as to permit adjustment for social and economic factors – opening the door to special-interest pressures on decision-making in fisheries management – above and beyond even the sustainable biological yield level. Meanwhile, it was becoming evident that the long-accepted standard of Maximum Sustainable Yield was itself inadequate as an instrument for the protection of stocks. But getting new scientific ideas into the policy and administrative mix was difficult, and the structure of administration mandated by the Act fell far short of expectations.29

The regional fishery management councils that were established under the Act varied in their approach to the issues, but the general tendency was for them to yield to the shortsighted management goals pressed upon them by the industry. The Reagan and Bush administrations were not disposed to interfere with the regional bodies, either to force them to adopt management plans in a timely manner or to make certain those plans would be conservationist and assure sustainability. Nor was the related problem of habitat protection made an explicit consideration in formation of policies for management.

Ecosystem management was an ideal being widely debated in global circles among scientists and policy experts, and being pushed hard by the environmental organizations – a movement that achieved a great victory in the Rio meeting on the environment and its Agenda 2130 –

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but was not made a responsibility of the U.S. regional management councils. This resulted in a tragic breakdown in regulatory integrity and efficacy. Now the Sustainable Fisheries Act\textsuperscript{31} has supplanted the old FCMA in specification of goals and in its revision of structural and procedural requirements, including mandates to end excessive bycatch (which can waste up to half the fish catch in certain fisheries), to maintain marine habitat health, and to reduce overfishing and overcapitalization. The new Act comes very late – hopefully not so late that it leaves an insufficient possibility of achieving a successful turnaround.\textsuperscript{32}

IV. APPROACHES TO FISHERIES MANAGEMENT

In considering the current-day dilemma of the world's marine fisheries – as well as the contrast of this situation with that of twenty years ago, and the probable future of the issue – a recurring issue consistently at the core of debate and of policy decisions is the question of "sustainability." This is an ideal that has long been a central objective of fisheries management, and also of the scientific research programs on which management and conservation have depended. The modern foundations of sustainability theory go back to the 1930s, but with intellectual origins of far older vintage.\textsuperscript{33} The following discussion will focus on how, as we address the global fisheries crisis, the goal of sustainability is being redefined as one among several competing juridical and scientific norms – and on the probable effects of the implementation on these norms.

Among the most influential concepts that have informed efforts to formulate new legal norms in recent years are the precautionary principle, the preservationist approach, protectionism for biodiversity and ecosystem integrity, and privatization of property rights in fisheries. Cutting across these categories are two other concepts that new agreements seek to specify and make operational: 1) the need for

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\textsuperscript{33} On the history of the relevant science, see Harry N. Scheiber, From Science to Law to Politics, An Historical View of the Ecosystem Idea and Its Effect on Resources Management, 24 ECOLOGY L.Q. 631 (1997); Larry A. Nielsen, The Evolution of Fisheries Management Philosophy, MARINE FISHERIES REV., Dec. 1976, at 15 (providing a critique that gives a sense of how a challenge to Maximum Sustainable Yield ideals was posed in the mid-1970s).
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justice and equity with respect to indigenous peoples and less developed states; and 2) the need to define the legitimate claims of coastal communities to special consideration in allocation of access and of resources.

A. The Precautionary Principle

For fisheries on the high seas, the precautionary principle has been made applicable in the 1995 Fish Stocks Agreement, requiring the signatory states to halt fishing either when scientific evidence indicates the danger of a depletion of stocks or when scientific data indicate the possibility of serious damage to the habitat. With regard to fishing limits that would be established in the international regional regulatory regimes under the Agreement, signatory states are obligated to honor scientifically determined "reference points" that will trigger actions to protect the stocks under exploitation. It is especially important that the Agreement provides that, whenever such protective measures are required – either because of overfishing or natural causes – the measures must be dedicated not only to "management" but also to "conservation" of stocks and of habitat alike. When new fish populations are discovered and fishing is approved, it must be only on the basis of "cautious conservation and management" measures, with only "gradual development" of fisheries authorized.

In all these respects, the 1995 Agreement embodies a precautionary approach. Moreover, its provisions appear to most legal analysts as requiring that once regulatory regimes are put in operation by international agreement under the terms of the 1995 document, all new entrants into a fishery under such a regime will be required to conform to the regulations in effect. This could mean that a zero quota will be given to a new entrant, whether a signatory or not – a situation that formerly obtained only in the EEZs – and would be a vital supportive structure for the precautionary approach.

The key question now is whether the Agreement will in fact be interpreted so that its implementation is conservationist and consistent with the precautionary approach. Given the urgency of the fisheries crisis on the high seas as well as in the EEZs, and given the kind of public awareness that has become manifest in recent years as to the

51 Fish Stocks Agreement, supra note 15.
55 Id.
56 Id.
57 Id.
magnitude of this crisis, the 1995 Agreement may become the critical breakthrough for a reversal of the trends that are devastating the world’s fishery resources on the high seas. In the EEZs of the United States and other nations, moreover, under statutes such as the U.S. Endangered Species Act and various coastal zone management laws, there is a trend towards incorporation of the precautionary principle. However, the degree of success in this area is still a question in the balance in all countries.

B. The Preservationist Approach

Several distinct variants of preservationism are currently in play in international ocean law. In some instances, most notably the ethics of killing marine mammals (whales, seals, and dolphins, primarily), the question of whether a particular species is at the scientific “endangerment” level or rather ought to be preserved on other juridical and ethical grounds is a hotly debated topic. In fisheries, it may be argued that in the cases of total areal species fishing bans, such as the closing of the Northwest Atlantic cod fishery, preservationism has informed policy – although in the case of the cod fishery, the closing occurred in the face of a commercial collapse that made the specific philosophical foundation of policy less relevant than it would be in an approach to a healthy fish stock or habitat.

Protection of large ecosystems is another variant of preservationism, relating to areas such as the Antarctic, where the “marine sanctuary” approach is applied. Preservation is also central to the regulatory programs governing smaller ecosystems, such as the Monterey Bay area on the California Coast and the Great Barrier Reef zone in

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38 It is important to note that the precautionary principle (or “approach”) is meanwhile being incorporated into agreements in other areas of ocean governance and environmental protection, including most prominently some of the Regional Seas agreements under the U.N. Regional Seas Program, and the regulatory agreements regarding maritime operations in respect to pollution and safety. On these points, see generally Jon Van Dyke, Sharing Ocean Resources – In a Time of Scarcity and Selfishness, in LAW OF THE SEA: THE COMMON HERITAGE AND EMERGING CHALLENGES 12-13, 29-30, (Harry N. Scheiber ed., 2000).


northeastern Australia. These programs involve total bans on certain types of activity, including certain types or areas of allowable fishing ("no-catch zones"), as part of a larger effort to achieve sustainability by preventing irreversible ecosystem damage. In the U.S.-led global initiative on coral reef protection, as in the debates on whaling, the application of preservationist doctrine is complicated and often hampered by localistic claims of privilege based either on economic necessity in less developed communities or on the traditional prerogatives of the nations involved.  

In the debate over pelagic whaling, charges of "cultural imperialism" embitter the exchanges of views, although one can hardly accept the idea that efforts to protect vastly depleted populations of marine mammals deserve such an epithet. As early as 1972, the U.N. Stockholm Conference on the Human Environment called for a moratorium on such whaling. It took fourteen years for the International Whaling Commission ("IWC") to respond, but finally in 1986 the addition of new anti-whaling member states brought the IWC around to a decision to halt commercial whaling until further scientific study warranted resumption. The moratorium still holds, but it is increasingly challenged. Norway and Japan are among the states that do not accept the idea of preservation. They regard as legitimate the arguments for resuming the whale hunt, despite the shameful record of earlier years and despite the manifest susceptibility of whale stocks to rapid depletion from a variety of causes, including the hunt itself, shipping accidents and marine pollution.

The arguments for application of new preservationist norms are given additional impetus by general trends in international customary and treaty law, represented most notably by the ICES agreement and by the successive expressions of environmental ethics from the

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Stockholm Convention in 1972 and from the Rio meetings two decades later.  

C. Protection of biodiversity and ecosystem integrity

Overlapping with the debates of the precautionary principle and preservationism are recent trends in articulating principles for maintaining the health of ecosystems through comprehensive management. Subsumed in those principles is the explicit objective of sustaining biodiversity. The U.N. Biodiversity Convention requires signatory states to maintain the integrity of ecosystems in their regulation of human activities. As the Rio debates made dramatically evident, the biodiversity imperative is in potential conflict with other concepts of “sustainable development” and full utilization that are anthropocentric in their value orientation. There is, in sum, no universally accepted solution to the problem that was formalized in the Bruntland Commission Report on the need for a balance of development and sustainability.

It is intriguing that in the 1995 U.N. Fish Stocks Agreement, the “duty to cooperate” of signatory states is set forth in an uncertain counterpoint with the goals of “optimum utilization” and “maximum sustainable yield,” yet it is qualified to require recognition of relevant environmental factors and “economic factors, including the special requirements of developing states.” The precautionary approach is also clearly mandated, and references to “conservation” are explicitly set forth in ecosystem terms. Biodiversity protection too is explicitly mandated, indicating to this writer that the Agreement authorizes preservationist measures for ecosystem as well as species or genetic materials protection—a view unlikely to be accepted by Japan or perhaps other nations if disputes on that point should arise. There is

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49 Fish Stocks Agreement, supra note 15, Art. 5.
50 Id. Art. 5, §§ d, e; Art. 6, §§ 2, 3.
51 Id. Art 5, § g.
52 Thus when the present author suggested the above view in a lecture at a conference on sustainability sponsored by the Japanese Government Ministry of Foreign Affairs and Ministry of Agriculture and Fisheries, officials of that government disputed that the ecosystem and biodiversity provisions of the Fish Stocks Agreement could legitimately be interpreted as implying such an extreme preservationist measure. See generally Moritaka Hayashi, The Straddling and Highly Migratory Fish Stocks Agreement, in DEVELOPMENTS IN INTERNATIONAL
also a basis in the Agreement's terms for arguing that it could be invoked properly to require adherence by its signatory states to any moratoria promulgated by sanctuary agreements (e.g., in the Antarctic); and its implications for the future of cetacean stocks' exploitation and incidental damage is a highly sensitive subject for the disputants in the whaling and dolphin hunting global debate.

In the Biodiversity Convention, moreover, there is a stronger expression of concern than can be found in any of the other recent agreements regarding the goals of technology transfer and equitable sharing of benefits from resource exploitation with the developing nations. The definition of "just and equitable" sharing is left, however, to the bargaining process between industrialized nations and the less developed countries from whose land territory and EEZs they take marine genetic resources and other materials – an uncertain balance being struck again between traditional imperatives of sovereignty and property rights underpinned by market values, leavened in this instance by explicit concern for equitability.53 In any event, the reformulation of this balance in terms set forth by the Biodiversity Convention and other new agreements represents a significant advance over the vague and general concepts that had been incorporated as "duties to cooperate" in the 1982 UNCLOS.54

D. Privatization of property rights in fisheries

The idea of privatizing fishery rights within the EEZ areas has a long "pre-history," in that a group of influential resource economists has been campaigning since the 1950s for such a policy.55 Unless some kind of property rights in the fish stocks – a license to fish, in effect – is vested in private operators, they argue, the classic "tragedy of the commons" will prevail. With privatization, they contend, it will become consistent with fishing operators' self-interest to support strict limits on the harvest – a better route to sustainability than the classic

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54 See UNCLOS, supra note 16, Part XII, Protection and Preservation of the Marine Environment.

55 Scheiber & Carr, supra note 40, at 10-54.
The dismal failure of the EEZ enclosures to solve the over-fishing problem has given renewed impetus to this efficiency-oriented approach in recent years. It has aroused great controversy because of the wholesale restructuring of the traditionally individualistic and fragmented fisheries enterprise. In the debates over reauthorization of the Magnuson Act, vested interests in the fisheries successfully wrote into the new Sustainable Fisheries Act a temporary ban on new privatization experiments by the regional fishery councils.

There had been some such experimentation in the years immediately preceding the reauthorization, including schemes of individual rights—individual transferable quotas ("ITQs") and a variant which was especially geared to aiding Native American and Inuit communities, the community development quotas ("CDQs"). Claims of success were made for some of these American programs. Meanwhile, the progress of ITQ programs in other countries was closely watched throughout the world; an enthusiasm for this alternative approach to the traditional biologically-oriented management approach gathered strength on the basis of the favorable conservationist results of experience in New Zealand and elsewhere.

Today, a debate rages over whether the social costs of privatization are acceptable when they involve displaced workers in the fisheries, stress in coastal communities, and the threat of industrial concentration and loss of small operators in the coastal as well as distant-water fisheries. Unfortunately, the displacement, stress, and financial distress of smaller operators are also products of the current (i.e., traditional) systems of regulation—and without the compensating advantage of a flourishing of the marine fish stocks.

The progress of the ITQ idea, often more broadly described as the "property rights movement" in fisheries, has not gone uncontested. Two types of criticism, beyond the broad concern that traditional

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56 Id.

57 Sustainable Fisheries Act, supra note 31.

58 See COMMITTEE TO REVIEW INDIVIDUAL FISHING QUOTAS, NATIONAL RESEARCH COUNCIL, SHARING THE FISHE TOWARD A NATIONAL POLICY ON INDIVIDUAL FISHING QUOTAS (1990) (reviewing experience in several national and local regulatory regimes, and recommending a shift in U.S. policy toward privatization); see also Alison Rieser, Precriptions for the Commons: Environmental Scholarship and the Fishing Quotas Debate, 23 HARV. ENVTL. L. REV. 393 (1999).

59 See, e.g., SOCIAL IMPLICATIONS OF QUOTA SYSTEMS IN FISHERIES: PROCEEDINGS OF A SEMINAR HELD IN THE WESTMAN ISLANDS IN MAY 1996 (Gísli Pálsson & Gudrun Pétursdóttir eds., 1997) (providing a collection of essays directly relevant to the discussion of the social impacts of the quotas).
values and a way of life will be lost, demand special mention here. First is the position taken by indigenous peoples in regard to fisheries, exactly as they have done with respect to whaling, that they deserve special recognition by dint of historic presence and cultural norms. In an era when Canada, Australia and the Scandinavian countries have responded to indigenous claims with large concessions of resource and territorial control, and when even many of the most dedicated anti-whaling environmentalists concede the legitimacy of aboriginal whaling under the IWC, it seems likely that this kind of special claim will be a leading feature of the future policy process in fisheries law.60

The second line of criticism offers the alternative of what is termed "co-management," a proposal that overlaps, to a degree, with the indigenous claims argument. The champions of co-management argue that fish stocks can best be protected against depletion, while at the same time preserving the culture and social stability of coastal fishing communities, by resorting to regulatory systems in which the design and implementation of the fishing rules are done by a process that includes active involvement of the fishing operators themselves. The emphasis here is on the value of community, as an alternative to "top-down" management and dominant control of regulatory decision making by "experts." Those who favor this approach, like the proponents of privatization schemes, similarly point to examples of successful involvement of local interests in co-management with good effects on the health of fish stocks. Most observers remain skeptical, however, that co-management in the highly industrialized and modernized fisheries will work as well as the programs for which success is claimed, since the latter tend to be in fisheries that are confined to small ecosystems.61

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60 The special claims of the indigenous peoples in this regard have a counterpart in the terms of the U.N. Fish Stocks Agreement of 1995 and the Biodiversity Convention as to the special consideration that signatory states are obliged to give to small island states and to less developed countries. In a cruder and broader fashion, the UNCLOS document similarly referred to the special obligations owed to the poorer communities and nations. For a critique of some recent proposals for expanding the exemptions to the IWC moratorium on whaling by expanding unacceptably the definitions of "indigenous" rights and of "self-subsistent" whaling, see Scheiber, Historical Memory, supra note 14.

Whatever the merits of the arguments on either side, a common feature of these and other debates we have examined is the emerging tendency to introduce the claims of coastal communities as meriting special consideration in law and policy. Indeed, the Japanese and Norwegian governments have already sought to equate their small communities engaged in coastal whaling with the Inuit and other indigenous whaling peoples, contending that the "aboriginal exception" to the whaling policies and the current moratorium ought to apply equally to any group which believes that whaling is vital to its culture. In light of the favorable response to some claims of this nature (i.e., those of the Inuit and small island states in the IWC policy, or of the communities eligible for CDQs in the American EEZ) it seems likely that arguments will continue to be advanced to gain legitimacy for special interests in the developing jurisprudence of both national and international marine resources law.  

V. CONCLUSION

The record of twenty years, in sum, is one of legal and policy innovation of great variety. There has been enormous progress in codification of international ocean resources law. And yet the consequences for the fisheries of enclosure of ocean space represented by the EEZs has borne out the most dire predictions of those who in the 1970s condemned ocean enclosure as "the biggest smash and grab" of resources since the European imperialist powers carved up and kept Africa's vast territory in the late nineteenth century. That the fisheries are part of the "common heritage" is a concept with enduring vitality and strength, however, and the incorporation of altruistic and common-rights-oriented provisions in the international agreements since UNCLOS indicate that they still provide a lodestone of legitimacy for innovative law. Is it too much, then – especially with the evident global recognition of the fisheries crisis, with all that it threatens as to loss of environmental diversity and of food supply – to hope that the next twenty years might witness a more dedicated pursuit of the common interest on the basis of good science, rational debate of alternatives, and effective implementation programs? If this hope fails, then the "grab" represented by the enclosure movement will be seen in retrospect by a later generation's historians as only the prelude to an environmental tragedy of enormous proportions.
