

Governance of High Seas Biodiversity Conservation: A Framework for Identifying and Responding to Governance Gaps

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Abstract

This presentation identifies the international legal instruments presently available to address a list of actual and potential threats to high seas biodiversity conservation, with some discussion of gaps and current developments. It then uses several 'lenses' or perspectives to raise questions about governance gaps and how to tackle them. These lenses include concerns regarding encroachment on high seas freedoms versus the costs of inaction; biological diversity *per se*, or maintaining diversity within and between species and of ecosystems; the two axes of regulating activities and regulating areas; timing, or dealing with urgent concerns while developing a coherent framework for long term conservation; the tasks of management and the tools needed to carry them out effectively; and making use of legal opportunities such as models in national legislation, voluntary codes of conduct by private actors, building on binding and non-binding legal instruments to attain wider international support, and collaboration with the private sector. The lenses attempt to establish a framework of issues for consideration in conserving high seas biodiversity. The final section presents a possible scenario for moving forward. Certain definitional issues are dealt with up front.

1. DEFINITIONAL ISSUES

To help ensure that scientists, lawyers, and policymakers are starting on the same page, the following definitional issues lay the foundation for this paper.

International Governance: This paper addresses gaps in international governance arrangements, as distinguished from institutional gaps in the UN System considered in other papers prepared for this workshop. It will concentrate on rules and measures, the regimes *per se*, rather than organizational arrangements and structures. The distinction, however, is not a profound one, and the latter are surely included in the concept of governance.

High Seas: This paper takes the same approach as taken in the IUCN, WCPA and WWF High Seas Marine Protected Areas (HSMPAs) Workshop:¹ "high seas" refers to waters beyond the 200-mile exclusive economic zone (EEZ), and, as used here, includes the deep seabed beyond the limits of national jurisdiction, the "Area" as defined in the UN Convention on the Law of the Sea (UNCLOS). It does not include continental shelf areas beyond 200 miles subject to national jurisdiction in accordance UNCLOS. It is recognized that certain high seas rights apply within the EEZ as provided in UNCLOS, but these are not considered here.

Gaps in Mandates or Competence vs. Gaps in Exercising Mandates: It is important to distinguish gaps that exist because there is no established mandate to conserve high seas biodiversity from particular threats versus gaps that exist because the competent authority has

not yet established conservation measures. For example, the International Seabed Authority (ISBA) has a mandate to protect the marine environment from all types of deep seabed minerals activities, even though it has not yet established rules and regulations governing every type, in view of the time frame for prospective activities and current scientific knowledge. On the other hand, there is no established international competence regarding commercially oriented activities related to genetic resources of the deep seabed Area that may affect high seas biodiversity conservation,² and certain high seas fisheries remain unregulated.

Gaps in Effective Action vs. Gaps in Mandate: Another distinction is in the delivery of mandates. Even when mandates exist and there are real and present threats to high seas biodiversity conservation, States may not take effective action under the relevant international legal instruments. They may fail to make commitments adequate to address the problem, or they may fail to comply with and enforce the commitments they have made. Illegal fishing and illegal waste dumping on the high seas are two examples of non-compliance, while failure to adopt measures to reduce fisheries by-catch, or setting total allowable catch quotas at too high a level are examples of inadequate commitments.

Authorities and Limitations: Three types of authorities are distinguished in this paper: binding international agreements and customary law; non-binding international legal instruments like action plans, declarations, UN resolutions, etc.; and voluntary codes of conduct agreed by private groups such as industry or professional associations. It should be clear that unilateral or collective action by one or more States normally does not have any legal effect on third States unless specifically provided for (e.g., the obligation under the 1995 UN Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks (FSA) for States fishing a particular stock(s) to either become members of the relevant regional fishery management organization (RFMO) or agree to apply the measures established by it in order to have access to the fishery resources – art. 8(3) and 8(4)). In taking pollution control measures, however, States must refrain from unjustifiable interference with activities carried out by other States in the exercise of their rights and in pursuance of their duties under UNCLOS (art. 194(4)).

2. THREATS TO HIGH SEAS BIODIVERSITY AND RELATED INTERNATIONAL LEGAL INSTRUMENTS (TABLE 1)

The LOS Convention establishes the overarching framework for States' rights and obligations with respect to high seas biodiversity conservation. It establishes unqualified obligations to protect and preserve the marine environment and to cooperate in conserving living resources of the high seas. The environmental obligations apply to all activities carried out by States. They include obligations to take necessary measures "to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life" (art. 194(5)). UNCLOS is supplemented by numerous associated agreements that govern specific at-sea or land-based activities that may impact the marine environment, including high seas biodiversity.³

Under the Convention on Biological Diversity (CBD), States parties must implement the Convention with respect to the marine environment consistently with their rights and obligations under the law of the sea (art. 22(2)). Beyond national jurisdiction, Convention provisions do not apply to the components of biological diversity, but they do apply to any activities carried out under the jurisdiction or control of a contracting party (art. 4). In these areas all contracting parties "as far as possible and as appropriate" are to cooperate in the conservation and sustainable use of biological diversity (art. 5). Moreover, each contracting party is to identify

processes and categories of activities that have or are likely to have significant adverse impacts on the conservation and sustainable use of biodiversity and monitor their effects (art. 7). Thus in principle the CBD establishes a basis for dealing with activities beyond national jurisdiction, although regulatory functions are generally undertaken under other, specialized instruments.

There are several agreements that *de facto* help reduce adverse impacts on high seas biodiversity, but because they do not directly address high seas activities or impacts they are not considered further in this paper. These include the conventions and associated protocols on ozone depletion, climate change, persistent organic pollutants (POPs), and control of transboundary movements and disposal of hazardous wastes.

TABLE 1

| <u>THREATS/ACTIVITIES*</u> | <u>MAJOR INTERNATIONAL LEGAL INSTRUMENTS**</u> |
|---|--|
| Fishing Overharvesting Bycatch Physical destruction | UNCLOS International Whaling Convention UN Fish Stocks Agreement (FSA) FAO Code of Conduct for Responsible Fisheries FAO Compliance Agreement FAO International Plans of Action: Seabirds, Sharks, Capacity, IUU CMS CITES Regional Fishery Management Organizations (RFMOs) Areas: closed areas |
| Minerals Development Physical destruction Pollution Sediment plumes & turbidity Noise | UNCLOS International Seabed Authority Rules and Regulations Areas: off limits to exploitation impact and preservation reference areas (manganese nodules) Continental Shelf/Oil & Gas Activities >200 mile EEZ Regional Seas Protocols/Annexes MARPOL 73/78 London Convention |
| Shipping Pollution Invasive species Noise Physical impact (whales) | UNCLOS Numerous IMO Conventions Areas: MARPOL 73/78 Special Areas re operational discharges PSSAs SOLAS 74 (Ships Routeing, including areas to be avoided, Vessel Traffic Services, Ships Reporting) COLREG 72 (traffic separation schemes) Compulsory pilotage |
| Bioprospecting Physical destruction | UNCLOS CBD |
| Marine Scientific Research Physical destruction | UNCLOS |
| Submarine Cables Physical destruction | UNCLOS |
| Dumping Pollution Physical (smothering) | UNCLOS London Convention Regional Seas Protocols/Annexes |
| Renewable Energy (e.g., OTEC, currents, wind) | UNCLOS IMO Conventions (e.g., MARPOL 73/78) |

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| turbines) | |
| Open Water Aquaculture Pollution Disease Escape of non-indigenous or genetically-modified species | UNCLOS IMO Conventions (e.g., MARPOL 73/78) |
| Large-Scale Ocean Modification (e.g., ocean fertilization) | UNCLOS |
| Marine Archaeology Physical destruction Physical (smothering) | UNCLOS UNESCO Underwater Cultural Heritage Convention |
| Tourism Physical destruction Light pollution, Noise | UNCLOS |

* See especially Susan Gubbay, note 14 *infra*, for a summary of potential impacts.

** This is not a comprehensive list, especially regarding non-binding instruments.

Fishing: This issue is addressed by Charlotte de Fontaubert in another paper. In summary, high seas fishing (beyond the 200-mile EEZ) is governed by UNCLOS and its 1995 Implementing Agreement (Fish Stocks Agreement or FSA) as well as the FAO Code of Conduct for Responsible Fisheries (and the FAO Compliance Agreement once in force). It is important to note that the unqualified UNCLOS obligation to cooperate in conserving living resources in the high seas includes the obligation to cooperate when the same stocks or areas are fished, either directly or by establishing regional fishery management organizations (RFMOs);⁴ that is, to avoid unregulated fisheries.⁵

Under these instruments there is no longer any doubt that precautionary and ecosystem-based approaches to fisheries management are the norm for high seas fishing. By the early 1990s, growing concern over depleted stocks led to new commitments to control overfishing, overcapacity, and IUU (illegal, unreported and unregulated) fishing. Some RFMOs have turned their attention to upgrading rules and practices to reflect the new norms, but many have yet to do so. At the global level, UNEP and FAO are working together on ways to strengthen regional-level collaboration between regional seas bodies and RFMOs and to promote ecosystem-based fisheries management.⁶

For other species, the Convention on the Conservation of Migratory Species of Wild Animals (CMS) provides for protection of listed species, which include sea turtles and small cetaceans. “Range” States are required to take protective measures; this include States whose vessels are engaged in taking the species beyond national jurisdiction.

As noted above, this paper does not cover the continental shelf subject to national jurisdiction, and therefore does not cover living organisms of the continental shelf subject to national jurisdiction; that is, living organisms belonging to sedentary species as defined in the LOS Convention (art. 77(4)). Under United States law, for example, specified varieties of coral, crab, mollusks and sponges are included within these sedentary species.⁷ Nevertheless, bottom trawling for high seas living resources (non-sedentary species) affects high seas biodiversity and may affect sedentary species subject to coastal state jurisdiction. It is presumed that the coastal state can take action to address significant adverse effects on such sedentary species beyond 200 miles [and the ecosystem that supports them].

Minerals Development: The International Seabed Authority (ISBA) established by UNCLOS is the mechanism through which States parties organize and control the exploration and exploitation of all mineral resources of the Area. It acts on behalf of mankind as a whole, in whom the rights to these resources are vested (arts. 137(2)). The rules and regulations adopted by the ISBA must include necessary measures in accordance with the Convention (e.g., art. 194(5) on protecting rare or fragile ecosystems, noted above), and, specifically, to prevent, control, and reduce interference with “the ecological balance of the marine environment” and for “the protection and conservation of the natural resources of the Area and the prevention of damage to the flora and fauna of the marine environment” (art. 145). Without examining in detail the rules and regulations already adopted for manganese nodule exploration, they do provide for environmental studies, baselines, impact assessment, and preventive measures as well as a precautionary approach.

The Convention makes specific provision for decisions to disapprove areas for minerals exploitation where substantial evidence indicates the risk of serious harm to the marine environment (art. 162(2)(x)). While this provision could be perceived as reactive rather than precautionary, UNCLOS provisions in general offer substantial scope for identifying potentially vulnerable areas up front where special protections from minerals activities would apply. ISBA Secretary-General Satya Nandan has recently suggested as much, as ISBA is developing regulations on polymetallic sulphide deposits and cobalt-rich crusts; in light of potential threats to biodiversity associated with hydrothermal vents, he notes that “while management of all the world’s hydrothermal vent sites is an unrealistic goal, the possibility of developing internationally agreed criteria for the identification of sites of critical importance and sensitivity may be considered.”⁸ Equally important, it would seem advantageous from an industry point of view to know in advance that certain sites will be off limits, rather than spending money to prospect in those areas.

The manganese nodule regulations require that when areas are proposed for exploitation, they must include areas to be used exclusively (i) to monitor impacts and (ii) as “preservation reference zones” where no mining may occur so that representative and stable biota continue to exist in order to assess any changes in flora and fauna.⁹ In addition, the ISBA Assembly has endorsed ISBA collaboration in research projects, such as a study of biodiversity, species range, and gene flow in the abyssal Pacific nodule provinces. Among the outputs will be a report on the study’s implications for potential environmental impacts of deep seabed mining, including specific recommendations for managing risks to biodiversity.¹⁰

Minerals development on the legal continental shelf beyond 200 miles is subject to coastal state jurisdiction. National rules and regulations apply, although there are several regional agreements (protocols, annexes) that also establish rules for the States involved. Presumably these all provide for marine environmental protection and, by extension, high seas biodiversity conservation. A more detailed assessment would be required to evaluate the effectiveness of these measures, nor has this author reviewed whether continental shelves extend beyond 200 miles in the seas covered by these instruments (Mediterranean, Northeast Atlantic; clearly not the Baltic Sea or Gulf/Kuwait region). In addition, certain discharges from offshore rigs and platforms are covered by MARPOL 73/78, while the London Convention covers at-sea disposal or abandonment of offshore structures.¹¹

Shipping: The LOS Convention strikes a careful balance between international navigation rights and freedoms and the rights of coastal states to protect their coasts and offshore zones. This balance is reflected both in the authority to set standards and in the authority to enforce

them. The Convention also reflects the need to promote uniform measures for all ships to avoid a patchwork of measures that could complicate if not hinder passage from one part of the sea to another, including through vital passages (international straits and archipelagic sealanes). It distinguishes between two general types of standards: standards inherent in the ship once it leaves port (construction, manning, equipment, and design) and operational standards that can be varied at sea (e.g., discharge of oily ballast water or garbage). For the first category, international standards apply to all ships wherever they are; for discharges, international standards apply beyond the territorial sea and in international straits and archipelagic sealanes. The authority to establish international standards is transferred by UNCLOS to a collective international process, the International Maritime Organization (IMO). In recent years, more and more of the measures adopted by the IMO have become mandatory where previously they were simply recommended. Measures adopted by one or more States that are not in conformity with UNCLOS provisions (and IMO measures pursuant to it) do not apply to third States, although any State may set higher standards for its own flag vessels.

Thus, beyond national jurisdiction, standard-setting authority rests with IMO member States. The uniformity of international measures facilitates worldwide navigation and creates a level playing field. At the same time, certain IMO measures vary from place to place. States members have for three decades recognized that certain parts of the world's ocean are more vulnerable to damage caused by ships and require a higher level of protection. These areas may be within or beyond national jurisdiction, but the essential point is that the measures apply uniformly to all ships (non-discriminatory). IMO members have devised a variety of tools for affording higher levels of protection to defined areas and continue to refine and elaborate them. These issues are considered in more detail in another workshop presentation. In brief, Special Areas under MARPOL 73/78 and PSSAs (Table 1) permit application of special measures in areas beyond national jurisdiction. The measures under SOLAS [and COLREG] are intended for use by coastal States in waters within national jurisdiction to avoid accidents and environmental damage or, in one case, harm to endangered marine species¹² (in most cases, subject to IMO acceptance). Of interest regarding invasive species, it is reported that the emerging IMO convention on control and management of ships' ballast water and sediments provides for a higher level of protection in special ballast water discharge control areas.¹³

The authority to enforce international rules and standards lies primarily with the flag State, but UNCLOS provides certain supplementary authority to coastal and port States. Coastal State authority obtains when a pollution incident has taken place within national jurisdiction. The further offshore the incident, the more restricted are coastal state enforcement rights. Beyond the territorial sea in the EEZ, flag state competence predominates, although the coastal state retains some authority, particularly with respect to serious incidents. Port State enforcement refers to the authority of a State to control entry into its ports (or offshore terminals), including the right to deny entry to ships that do not meet international construction, design, manning, and equipment standards. When a vessel is voluntarily within its ports (or offshore terminals), the port State may investigate compliance with these international standards and, if warranted, institute proceedings. In addition, the port State may investigate and, if warranted, institute proceedings against a vessel for violation of international discharge standards no matter where these violations have occurred, including on the high seas. The rationales for allowing port States to initiate enforcement action with respect to international discharge standards are that at-sea enforcement actions are dangerous, expensive, and may impede international navigation. Since 1982, enforcement mechanisms have evolved substantially through port State control arrangements and various systems to monitor vessel traffic. These and further improvements (see section 7 below) could apply to violations of agreed measures applicable on the high seas.

Bioprospecting: The potential adverse impacts of bioprospecting on high seas biodiversity, including biodiversity of the seabed Area, have not been studied in any depth. Some argue that since only minimal samples are taken, for replication in laboratories, the impacts are negligible. This might change if replication in laboratories of potentially valuable substances proved difficult or more costly than at-sea recovery. In effect, any impact will depend on the scale of the operation and the method of collection.¹⁴ (See also marine scientific research, below.)

A recent joint study by the CBD and the UN Division for Ocean Affairs and the Law of the Sea (DOALOS), the secretariat of the LOS Convention, has already identified the legal gap that exists with respect to commercially oriented activities relating to marine genetic resources of the Area.¹⁵ This would include any regulation of bioprospecting to avoid adverse effects on the marine environment/ecosystems.

Bioprospecting has arisen also under the Antarctic Treaty, and the XXVI treaty meeting is expected to discuss it this month in Madrid.¹⁶

With respect to bioprospecting in relation to pelagic resources, this is equivalent to fishing on the high seas and considered a freedom of the high seas. It does not appear that there are any studies of adverse impacts on high seas biodiversity. There are recent reports of a plan to sequence the genomes of every organism of the Sargasso Sea.¹⁷

Marine Scientific Research (MSR): As with bioprospecting, the potential adverse impacts of MSR on high seas biodiversity conservation are little documented, although there are some reports of potential adverse impacts when research concentrates in particular areas; for example, sampling or instrument deployment at particular sites on hydrothermal vents.¹⁸

UNCLOS in its general principles on the conduct of MSR provides that research shall be undertaken in compliance with all regulations adopted in conformity with UNCLOS, including those for the protection and preservation of the marine environment (art. 240(d)). All states (and competent international organizations) have the right to conduct MSR in the Area and in the water column beyond the 200-mile EEZ. In the Area, they must do so in conformity with Convention provisions on the Area, which reaffirm that it should be undertaken in conformity with Convention provisions on marine environmental protection (arts. 143(1), 256). In addition, MSR in the Area is to be carried out exclusively for peaceful purposes and for the benefit of mankind as a whole (art. 143(1)).

The onus for high seas biodiversity conservation in the case of the Area and the water column thus lies with those conducting the research. In the Area, the ISBA Assembly acknowledged in 2002 that the Authority has no regulatory functions with respect to MSR as such, although it does have an important role to play in promoting and encouraging MSR in the Area.¹⁹ It also endorsed the proposals made by the Secretary-General in his report²⁰ for promoting international cooperation in research projects aimed at enhancing scientific knowledge of the deep ocean environment and its resources, such as the project noted in the section on “minerals development” above. It has been suggested that the Authority has the potential to provide a forum for the discussion and development of principles to improve implementation of the existing legal regime for MSR in the Area and the management of the Area’s biodiversity.²¹

Other options, should the adverse impacts of MSR give rise to further concern either in the Area or the water column, are a code of practice adopted, for example, under the auspices of UNESCO’s Intergovernmental Oceanographic Commission (IOC), or directly by the private

scientific institutes involved. There are already discussions among deepsea researchers to develop codes of practice for working in hydrothermal vent environments, and the principles and good practices developed for areas within national jurisdiction could certainly be adapted to areas beyond national jurisdiction.²²

Submarine Cables and Pipelines: It has been reported that laying submarine cables has already caused a loss to biodiversity conservation, in this case through disruption of long term research studies.²³ All States have the right to lay submarine cables and pipelines as a freedom of the high seas (UNCLOS art. 87). They have the same rights on the legal continental shelf within national jurisdiction, subject to certain reasonable measures by the coastal State that do not impede laying or maintenance but include controlling pollution from pipelines (art. 79). The course of pipelines is subject to the consent of the coastal State on the continental shelf (art. 79.3).

As deepsea areas of high value for biodiversity conservation are identified, it may be useful to improve mechanisms for communication about potential high seas routes and how to adjust the course of cables and pipelines to reduce adverse impacts on biodiversity conservation. Industry codes of practice could be contemplated. Another way to collaborate with the cable industry could address user conflicts that sometimes occur between the cable industry and bottom trawlers; it may be possible to designate corridors alongside cables as off limits to bottom trawling, preserving biodiversity along the corridors.²⁴

Dumping: The London Convention on Prevention of Marine Pollution by Dumping of Wastes and Other Matter, as revised in 1996, governs deliberate waste disposal at sea, including the deliberate disposal of vessels, aircraft, platforms or other man-made structures. It was explicitly extended in 1996 to cover any storage of wastes or other matter in the seabed or subsoil, in response to proposals for seabed burial of nuclear wastes. With respect to high seas dumping, enforcement authority rests not only with the flag State but also with the State in whose territory wastes are loaded. In addition, the coastal State has enforcement authority when dumping occurs on the continental shelf beyond 200 miles subject to its national jurisdiction. Through its interaction with UNCLOS, the London Convention establishes minimum standards for all States parties to UNCLOS, even if they are not party to the London Convention. Several of the regional seas agreements have protocols or annexes on dumping. In one or two cases they have adopted more stringent measures than under the global Convention, which upgrade standards for high seas dumping for the states involved. A few of the regional seas agreements cover high seas areas. (See section 4 below.)

While the “reverse list” approach of the revised London Convention prohibits dumping of all materials except those listed in an annex, there have been suggestions that even listed materials such as dredge spoils, for example, if disposed of in deep-sea trenches as sometimes proposed, could pose chemical threats to fauna in the vicinity.²⁵ At the same time, the revised Convention requires a precautionary approach; permits for all dumping of listed matter; assessment of dump site selection and potential effects; and reporting and monitoring. If adequately followed, these provisions should be sufficient.

Renewable Energy: The possibilities of using ocean currents, temperature differences between surface and deep waters (ocean thermal energy conversion or OTEC), or ocean winds as a source of energy have been discussed for many years, with experimental operations undertaken within national jurisdiction in some instances. Ocean production of hydrogen fuel using vent systems has also been suggested.²⁶ Without going into potential adverse impacts on biodiversity conservation, the legal regimes that apply are two-fold: coastal State jurisdiction if

the operation is attached to the legal continental shelf, and flag State jurisdiction if it is a floating operation on the high seas. In both cases, UNCLOS provisions on marine environmental protection apply. With respect to floating operations, various of the IMO Conventions also apply; for example, MARPOL 73/78 applies to fixed or floating platforms.

Open Water Aquaculture: High seas aquaculture operations may one day take place, in which case the same legal regimes apply as with renewable energy.

Large-Scale Ocean Modification: The example usually presented is ocean fertilization as a means of sequestering carbon from the atmosphere. It has already been demonstrated that iron fertilization stimulates algal growth and photosynthesis, utilizing carbon dioxide and creating large plankton blooms. Whether this ultimately results in sequestering increased amounts of fixed carbon in the deep ocean as plankton die and sink or are eaten (carbon flux) is the primary question being studied in an experiment in Southern Ocean waters.²⁷ Some commentators argue, however, that on a large scale, through commercialized activities, ocean fertilization or “purposeful eutrophication” would, by design, change the ecology of the oceans and entail unintended consequences for food webs and biogeochemical cycles. In their view, “the known consequences and uncertainties... already far outweigh hypothetical benefits.” They suggest that interest in industrial scale ocean fertilization is stimulated by the possibility of credits in a global market for carbon trading.²⁸

As a scientific experiment on the high seas, such activities would be subject to the UNCLOS regime on MSR, considered above, including provisions on marine environmental protection. As a commercial operation on the high seas, they would be subject to a “flag State” regime and the same environmental requirements. If such activities are ultimately sanctioned in a global carbon trading scheme, they could also be made subject to agreed rules and procedures under the international climate regime.

Marine Archaeology: Underwater archaeology is moving into increasingly deeper waters, although it is likely to be limited by practical difficulties and cost. Under UNCLOS, all States have the duty to protect objects of an archaeological and historical nature found at sea and to cooperate in doing so (art. 303). In the Area, such objects are to be preserved or disposed of for the benefit of mankind as a whole, although “particular regard” is to be paid to the preferential rights of the State or country of origin, the State of cultural origin, or the State of historical and archaeological origin (art. 149). Moreover, the law of salvage or other rules of admiralty law apply to all such objects found at sea, and the rights of identifiable owners are to be respected (art. 303). On the continental shelf beyond 200 miles, the coastal State has no competence to control the activities of foreign nationals and/or flag ships in regard to such objects.²⁹ States may enter into agreements governing such objects (art. 303(4)). Regarding potential adverse impacts on high seas biodiversity due to the conduct of marine archaeological operations, these provisions imply a flag State regime over those undertaking the operation together with whatever measures identifiable owners and/or countries of origin may specify, in compliance with UNCLOS provisions on marine environmental protection. International agreements of the type contemplated in art. 303(4) could be developed that stipulate particular requirements for biodiversity conservation.

The UNESCO Convention on the Protection of the Underwater Cultural Heritage (UCH, 2001) is meant to progressively develop UNCLOS and strengthen the protection of underwater cultural heritage. It gives preference to preserving such heritage *in situ* and elaborates notification and consultation requirements for UCH so that States with a “verifiable link” are apprised of discoveries and activities directed at such heritage (art. 9). For objects found on the continental

shelf, the coastal State must be notified, and the Convention grants to the coastal State the right to prohibit or authorize activity “to prevent interference with its sovereign rights or jurisdiction” (art. 10.2); presumably, including interference with sedentary species of the shelf. The Coastal state is charged with coordinating consultations with other States parties having indicated their verifiable link. Measures to protect the heritage are to be agreed among these States. In the Area, notifications go to the Director-General of UNESCO and the Secretary-General of ISBA, and States with a verifiable link and the ISBA are to consult and coordinate to agree on protection measures. The coordinating State in this case is appointed by the States involved.

An annex to the UCH Convention contains Rules concerning activities directed at UCH. For objects found on the continental shelf, all authorizations must be in conformity with these Rules. This is not explicit with respect to objects found in the Area. The Rules require an environmental policy and study of the environmental characteristics of the site, and the policy must be “adequate to ensure that the seabed and marine life are not unduly disturbed” (Rule 29). Thus the Convention, and its possible expert Scientific and Technical Advisory Body, are in a position to elaborate on how to implement the Rules to avoid adverse impacts on high seas biodiversity. In addition, and/or until the Convention enters into force, a code of conduct could be developed by individuals and institutions engaged in this type of activity.

The preference for *in situ* conservation and protection of UCH may create opportunities to conserve high seas biodiversity where such sites co-exist with sites of biodiversity value.

Tourism: The attraction of submersible dives for tourists to view deepsea environments can be expected to grow, following the first trips to mid-Atlantic hydrothermal vent fields in 1999. Possible elements of a code to address such tourism within national jurisdiction have been proposed.³⁰ Potential impacts include damage to vent chimneys, souvenir collection, light pollution, and indiscriminate scattering of ballast on the seabed.³¹ Beyond national jurisdiction, these operations are presently subject only to flag State rules. There are numerous examples of tour operator codes for sea-based tourism; for example, in the Caribbean, Antarctica, and for dive tourism. In the case of dive tourism, private certification processes also exist to verify that the operation is environmentally appropriate. A similar code and certification process could be developed for deepsea submersible dives or other tourism operations beyond national jurisdiction to avoid adverse impacts on high seas biodiversity conservation.

The UNESCO Underwater Cultural Heritage Convention, in order to stimulate public awareness, appreciation, and thus protection of cultural heritage, encourages responsible, non-intrusive access to observe or document such objects *in situ*, compatible with their protection and management (art. 2.10). It could lead to an increase in deepsea tourism, but this should be made subject to an environmental safeguards policy.

3. LENS NO. 1: FEAR OF REGULATION VS. COSTS OF INACTION

“We’re policed and patrolled on land and there is so much regulation that I kind of thought that when you go out on the high seas you can do as you want.”

... Ronald Reagan, 1982

Regarding US Decision Not to Sign UNCLOS³²

As one of the diminishing number of veterans of the Law of the Sea Conference, it is impossible not to recognize that there will be those who perceive efforts to protect high seas biodiversity as yet another encroachment on high seas freedoms: most notably, the freedoms of fishing and

navigation, if not freedoms to lay submarine cables and pipelines, undertake marine scientific research, and construct artificial islands and other installations. Others will worry about areas placed off limits to deepsea minerals development. Yet it is important to remember that these activities are subject to responsibilities to protect and preserve the marine environment and conserve marine living resources. Less than a decade ago it was difficult to get political agreement on references to ecosystem-based approaches to ocean and fisheries management. Today the concept is widely endorsed, most recently by the World Summit on Sustainable Development (WSSD), with a target for application of 2010. This benchmark poses new challenges to ensure that high seas activities are conducted in a manner that maintains the productivity, functioning, and structure of the full range of marine ecosystems.

This does not mean a prohibition on all high seas fishing any more than it means a free-for-all for fishers; it means finding the right balance between fishing rights and conservation obligations, reinforced by effective enforcement. Where high seas biodiversity is under threat from international shipping, there is no reason why international measures cannot be applied and upgraded as necessary, in keeping with the principle of non-discrimination and in a manner that continues to balance navigation rights with obligations to protect and preserve the marine environment. The same is true of other high seas activities.

4. LENS NO. 2: BIOLOGICAL DIVERSITY

The biodiversity lens, with reference to the CBD, covers diversity within species, between species, and of ecosystems. Protecting diversity within and between species, including genetic diversity, means protecting rare, endemic, and endangered or threatened species and ensuring that the status of depleted species does not deteriorate further. In the marine domain, it entails measures to avoid direct impacts on species and their essential habitat. For migrating fish and other species (turtles, marine mammals, seabirds) essential habitat used throughout the life cycle may include a number of areas some distance apart.

Protecting the diversity of ecosystems is more complex. It poses issues of structure and function as well as “representativeness” -- questions that I will leave to the scientists. From the perspective of governance, the important issue is scale: how large are the individual and total areas subject to protection, and what kinds of protections (restrictions) apply? A corollary, of course, is how restrictions affect existing activities and what kinds of trade-offs or compromises may be worked out. The answers are central to assuaging fears cited in the previous section.

GAPS, for species: it appears that RFMOs are lacking for certain regional fisheries, particularly in the Southwest Indian Ocean and Southwest Pacific regions. In other cases, RFMO measures are either inadequate to conserve target species or ineffectively enforced. There are also gaps in relation to migratory species like sea turtles and other cetaceans that range widely. CMS is one vehicle for addressing conservation of threatened or endangered species, through its Agreements and Memoranda of Understanding (MOUs). In one instance a free-standing convention, the 1996 Inter-American Convention for the Protection and Conservation of Sea Turtles, was concluded. In relation to fisheries by-catch, some RFMOs have adopted measures to reduce by-catch while others have yet to do so or the measures are inadequate.

For genetic resources: The joint study noted in the section on “bioprospecting” above identifies the legal gap regarding commercial activities relating to deep seabed genetic resources. In March 2004, the seventh Conference of the Parties (COP) of the CBD will consider whether to invite the UN General Assembly to seek recommendations from relevant

international organizations on appropriate actions. It will also consider whether the COP at its eighth meeting will make recommendations for States parties to avoid damage to the environment beyond national jurisdiction by activities and processes under their jurisdiction or control, pursuant to the terms of the CBD. These recommendations would be based on an assessment carried out by the CBD secretariat in consultation with other international organizations on the status and trends of deep seabed genetic resources; methods to identify, assess, and monitor them and threats to them; and the means for their protection.³³ Whether genetic resources in the water column of the high seas are at risk seems in part a function of species at risk and in part a function of any irreversible change in ecosystems – another question for the scientists.

For habitat, networks, and ecosystems: The WSSD set a target of 2012 for establishment of representative networks of marine protected areas. The CBD's advisory body recently reinforced this goal by endorsing the establishment and maintenance of marine and coastal protected areas (MCPAs) to maintain the structure and functioning of the full range of marine and coastal ecosystems and contribute to a permanent representative global network.³⁴ This body notes that regionally and globally, MCPA networks are severely deficient, and that in areas beyond national jurisdiction they are *extremely* deficient in purpose, numbers, and coverage. It notes also that further technical advice is needed in relation to designing networks and in particular the ecological coherence of networks, and calls for identification and activation of an appropriate mechanism for developing it.³⁵ Migratory species in particular need an ecologically coherent approach to habitat conservation. Some argue that a certain “density” of marine reserves will be necessary to make a substantial contribution to species diversity and recruitment outside the reserves and thus enhance regional ecosystems more broadly.³⁶

At the regional level, the regional seas agreements provide for designating MCPAs; several have already launched initiatives to develop networks and meet the target date. More detailed protocols have been adopted under five of these agreements, which focus on protecting species, areas, and biodiversity writ large.³⁷ The most recent of these incorporate the forward-looking goals and approaches of the CBD.³⁸ Under several of these agreements, it is possible to protect high seas biodiversity (Northeast Atlantic, Mediterranean, South Pacific, Southeast Pacific³⁹). In some cases, this is because the surrounding States have not yet all established 200-mile EEZs (e.g., Mediterranean). In the Antarctic Treaty area, which covers the high seas, there is also provision for designation of MCPAs.⁴⁰

On the question of the structure and functioning of the full range of marine ecosystems, it does not yet appear that we are in a position to answer which high seas areas and systems, at what scale, require protection from which threats in order to ensure high seas biodiversity conservation. Two key questions for the immediate future, however, are (1) the form such protection may take – area regulation vs. activity regulation— and (2) distinguishing existing and more immediate threats from those that may manifest over the longer term.

5. LENS NO. 3: TWO AXES OF REGULATION: AREAS AND ACTIVITIES

The basic concept is a long-standing one; that particular activities like shipping, fishing, minerals development, scientific research, and others are subject to rules that, among other things, ensure a threshold of protection for natural resources and the environment (biodiversity, for short). At the same time, certain areas with special values are recognized as requiring a higher level of protection than the otherwise prevailing threshold. The values may relate to habitat, including habitat of endangered, threatened, rare, or endemic species or migratory species;

rare, unique, or representative areas, processes, or ecosystems; and/or scientific, cultural, historical, archaeological, educational, recreational, wilderness or others. The CBD, for example, refers on the one hand to the need for systems of protected areas where special measures should be taken to conserve biodiversity and, on the other, to the development of measures whether within or outside protected areas for the conservation and sustainable use of biodiversity (art. 8). Numerous oceans conventions, as noted above, also distinguish areas warranting a higher level of protection than the norm.

In establishing areas that warrant special protection, it is essential to bear in mind a fundamental distinction between the high seas and areas within national jurisdiction: within national territory, national law controls all actors, whatever their nationality; beyond national jurisdiction, national law only governs entities under national jurisdiction or control. International agreements are implemented through national law. As considered in section 2, “flag State” jurisdiction prevails on the high seas; this is reflected not only in UNCLOS but also in the CBD’s application beyond national jurisdiction only in respect of processes and activities carried out under the jurisdiction and control of States parties. This same principle is found in marine species protection agreements, which apply to the flag vessels of States parties in order to encompass operations beyond national jurisdiction (e.g., CMS, Inter-American Convention for the Protection and Conservation of Sea Turtles).

The first problem, then, in conserving high seas biodiversity, is to apply conservation measures to all States whose nationals are responsible for major threats; any “authority” only governs the States that have voluntarily agreed to abide by it. This has led to several approaches. The marine species protection agreements generally cover species and their habitat, and they strive to encompass all range States of the covered species. At the same time, they recognize that impacts from third States may be involved, through fishing and by-catch, pollution, and other threats. This has produced two tactics. The first is to encourage adherence to the agreements by third party States, notably fishing States. The second is to promote coordination with activity-specific international agreements governing relevant threats as a means to extend the protections, notably fishing and shipping agreements (e.g., CMS Agreements in the Baltic and Mediterranean Seas with relevant fishing and maritime pollution bodies, respectively).⁴¹ Coordination with land-based pollution agreements has also been employed, but this is unlikely to be relevant to the high seas.

In addition, specialized activity regimes on fishing or shipping may recognize that other threats exist to a designated area. The guidelines for Special Area designation under MARPOL 73/78, for example, provide that proposals are strengthened if measures to control other sources of pollution are being, or will be, taken; and if measures are being taken to manage the area’s resources under a management regime.⁴² This implicitly recognizes that unless other threats are curtailed, the values enshrined in the designation may erode, and thus the value of the designation *per se*. For PSSAs, a more general criterion calls for consideration to be given if the area is already listed as important under an international agreement, *and to its potential for such listing* (emphasis added).⁴³ This appears to give weight to international recognition and, implicitly, to additional protections that may result from such recognition.

The approach recently recommended by the CBD/SBSTTA makes a similar distinction between sustainable management practices and actions to protect biodiversity over the wider marine and coastal environment, married with an ecologically coherent MCPA network. Regarding a *national* framework for MCPAs, it makes a further distinction between representative areas essentially protected from all human pressures, and other MCPAs where human uses are permitted and threats managed. With respect to *areas beyond national jurisdiction*, this further

distinction is *not* suggested; instead, additional work is called for to identify appropriate mechanisms for establishment and effective management of MCPAs.⁴⁴ This distinction recognizes the inherent difficulty under existing regimes of integrated, multiple-use management.

The problem of protecting particular areas on the high seas from multiple threats under a flag State regime is compounded by the difficulty of insulating such areas from threats that originate outside the area. To overcome this problem near shore and within national jurisdiction, it is generally recognized that MCPAs should be integrated within a wider management framework that addresses threats comprehensively. Beyond national jurisdiction, any framework for addressing external threats is more elusive. In the context of an activity-specific regime, the idea of a buffer zone has been employed; specifically, a PSSA designation can include within its boundaries an area contiguous to the core area for which protection from shipping is sought. Presumably, restrictions on shipping in the buffer zone would differ from those in the core area and create a third level of protection. At the same time, the protective measures that may be applied are limited to the suite available under IMO instruments. In this way sectoral actors (shipping) have recourse to a single regulatory system.

GAPS: In considering gaps from this perspective, the first issue is to consider whether there exist agreed measures governing any particular threat, at a global or regional level, as appropriate, that establish a minimum threshold adequate to conserve high seas biodiversity; for example, regarding selective fishing gear and methods, discharges from ships, or impacts from deep seabed minerals development. An additional consideration is whether compliance and enforcement are adequate.

The next step is to determine which high seas areas warrant a higher level of protection in order to ensure biodiversity conservation, the threats involved, and what measures can be taken to address those threats through one or more activity-related regime (including voluntary action by private parties) and/or area protection regime. This should include consideration of the ability to exercise authority over the States under whose control/jurisdiction the actions posing threats take place.

A third step would be to consider how actions under more than one regime dealing with activities and/or areas can best reinforce each other in conserving high seas biodiversity – and appropriate mechanisms for coordination at a regional or global level.

6. LENS NO. 4: IMMEDIATE OPPORTUNITIES VS. COHERENT FRAMEWORK OVER THE LONGER TERM

The existing areas and activities axes offer various opportunities for States to take action to conserve high seas biodiversity. At the same time, the geographic coverage of existing international instruments may not be sufficient to encompass all known threats. Over the longer term, as the scientific and technical evidence emerges to determine which high seas areas require which protections at what scale for biodiversity conservation, additional mechanisms may be needed to realize this approach.

The immediate opportunities for action include:⁴⁵

- national restrictions on high seas activities, including a higher level of protection for special areas, as a model and stimulus for action by other States; for example, US designation of

the *Titanic* memorial in order to avoid disturbance to the area by those subject to US jurisdiction and control;⁴⁶

- joint action by a group of like-minded States, particularly valuable when these States are the major sources of threat; for example, action to restrict fishing operations to reduce by-catch; or establishment of the Ligurian Sanctuary in the Mediterranean Sea by like-minded States, ultimately incorporated into the list of specially protected areas under the Protocol Concerning Specially Protected Areas and Biodiversity to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean;⁴⁷
- establishing RFMOs for unregulated fisheries as called for in UNCLOS;
- urging ISBA to exercise fully its mandate to protect the marine environment by identifying potentially vulnerable deep seabed ecosystems of critical importance and sensitivity in advance of minerals activities, where special restrictions on minerals activities would apply;
- action through existing regional instruments that cover high seas areas, to adopt or upgrade protections; for example, RFMOs to incorporate ecosystem-based management and a precautionary approach and strengthen enforcement options as provided in the FSA; or stronger protection measures under regional seas agreements, including measures covering continental shelf activities beyond 200 miles;
- seeking support or 'buy-ins' (accession) by other States to like-minded or regional agreements; for example to restrict fishing or other activities;
- seeking support for actions taken by like-minded States or pursuant to regional agreements by means of endorsement through other international agreements; for example, agreement by RFMOs to refrain from fishing in key habitat for migratory species listed under CMS or in protected areas designated under regional seas protocols; or PSSA designation through the IMO to reinforce other restrictions with restrictions on shipping; or endorsement of protected areas/habitat under related agreements, such as the Mediterranean Specially Protected Areas Protocol and the CMS/Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS) for the Ligurian Sanctuary;⁴⁸ or, ultimately, agreement by ISBA to avoid adverse impacts from deepsea minerals activities in an area protected through other agreements;⁴⁹

In considering *area* protection on the high seas, the comparative advantages would seem to lie in areas threatened by more than one activity where external threats are not a major factor. MPAs provide a basis for integrated management -- a means to regulate activities occurring within the area as a coherent and complementary package.⁵⁰ In light of flag State jurisdiction, however, the integrating function of high seas MPAs may lie less in regulation *per se* and more in serving as a "framework for cooperation among the existing organisations, institutions, and instruments that have only a limited mandate," providing a basis eventually for more comprehensive integration.⁵¹ By analogy, just as PSSAs provide a framework for application of binding measures available under a variety of IMO instruments to protect against shipping threats, high seas MPAs could provide the geographic basis for coordinated application of a variety of international legal instruments. Recognition of the value of the site would be afforded by the designation, while applicable measures could be designed at least in part through other instruments. The responsibility to pursue a coordinated approach would fall to the interested States. The UNESCO Underwater Cultural Heritage Convention is interesting in this respect, as a "Coordinating State" is designated among those with a "verifiable link". This is the coastal State when the object lies on the legal continental shelf, while beyond national jurisdiction the States involved appoint the coordinating State.

In addition to an integrated approach to threats, other advantages of site designation are visibility and potential public and technical/financial support, and focused, systematic efforts to improve data and information regarding the site. The site could be "recognized" through maps

and GIS, with attendant information on the values of the area. Validation of the site's importance would not require a binding legal instrument; it could be undertaken through a non-binding framework, at least initially, seeking formal recognition by various regional and global forums (convention processes or other governmental and non-governmental bodies).

The development of a coherent international framework for high seas area protection to conserve biodiversity has also been suggested, based on scientific information and consistent with international law. While this paper concentrates on legal regimes, it is obvious that a coherent legal framework requires a coherent approach at the scientific level; that is, criteria and guidelines and a strategy for developing the necessary information. The recent decision of the CBD's advisory body on MCPAs contemplates an integrated network of representative areas, and others that complement their biodiversity objectives. It sets out research priorities and calls for a mapping initiative on ecosystems and habitat in a biogeographic context.⁵² A recent report by the UNESCO World Heritage Centre drew on criteria used in a number of international conventions and programs, including criteria used by NGOs, to develop an overall list of criteria for use by an expert group in reaching consensus on tropical coastal, marine, and small island ecosystems for potential nomination as World Heritage sites.⁵³ The Malaga Workshop recommended seeking formal endorsement from the World Parks Congress (September, 2003, Durban, South Africa) to develop criteria and guidelines on HSMPAs, and encouraging the adoption of mutually consistent criteria and guidelines through the CBD, regional seas agreements, and possibly other biodiversity-related conventions and instruments.⁵⁴

An international framework for HSMPAs could take several forms. On one level, it would simply be a "scientific" biogeographic framework, mapping areas of particular importance for high seas biodiversity conservation (core areas) and their relationship with marine ecosystems. This would achieve the visibility function for conservation action, help indicate potential legal instruments through which action might be taken, and could stimulate conservation action. In contemplating a more formal mechanism for actually listing or designating HSMPAs, a non-binding framework similar to the framework for the world network of Biosphere Reserves could be explored. Either of these frameworks could be recognized or endorsed by a formal legal process like the CBD or UNCLOS. At the most formal level, a subsidiary instrument might be adopted under the CBD and/or UNCLOS. Interestingly, the World Heritage Centre workshop report cited above recommends a program to identify and establish World Heritage sites in the high seas, notably in the Pacific.⁵⁵

The advantages of a single legal framework might be formal recognition of a coordinating mechanism among relevant legal regimes and, if widely endorsed by the major states under whose jurisdiction or control threatening activities take place, a more integrated approach to managing threats in particular areas. It could provide a vehicle for more effective protection of an ecologically coherent network of sites to complement designations within national jurisdiction, based on well-founded determinations about priorities.

7. LENS NO. 5: MANAGEMENT TASKS AND TOOLS

This lens allows one to consider the tasks of management to conserve high seas biodiversity and the tools available to carry them out. The paper will not consider them in any detail, but it suggests that a gaps analysis will be needed as the strategy for high seas biodiversity conservation evolves, and that sequencing will be an important consideration.

1. Information and Assessment to Support Decision-Making (environmental, socio-economic, response options)
2. Adoption of International Measures
3. Application of International Measures (national implementation, international technical and financial cooperation)
4. Accountability: Compliance and Enforcement, and Emergency Powers
5. Coordination (among states, regimes, and international agencies and partners)

There are already a growing number of initiatives to address the gaps in our knowledge of high seas biodiversity, potential impacts, and how best to conserve it -- under the CBD as noted above and through the workshops and studies undertaken by the ISBA⁵⁶ as well as various private initiatives. A number of possibilities for adopting international measures are outlined in the previous sections of this paper. Technical and financial support for application may be wanting in many countries, but there are a variety of mechanisms through which this could be mobilized.

On the issue of accountability, the “definitions” section of this paper makes the distinction between gaps in delivery and gaps in mandate. Even setting aside the adequacy of international commitments, the problem of enforcement on the high seas is a large one. This may require priority attention in a strategy for high seas biodiversity conservation. In the area of fisheries, there are several evolving tools that enhance enforcement. These include port state measures, means to control trade in illegally-harvested species through catch documentation and certification schemes and import/export bans, and vessel monitoring systems (VMS). Trade controls on certain fish species are now also available under the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES).⁵⁷ At the same time, greater efforts are needed to improve vessel registry and tracking/numbering systems so that bad actors can be excluded from access to high seas fisheries, and States should make full use of dispute settlement options under UNCLOS and the FSA to pursue IUU fishing. This would include recourse to provisional measures to suspend or curtail activities when damage is ongoing or imminent.⁵⁸ The possibility of international frameworks to enhance port state control mechanisms and harmonize catch certification and documentation schemes should also be explored,⁵⁹ and FAO has a key role to play. Private certification programs can also be developed. A similarly aggressive approach should be applied to other illegal activities on the high seas that impact biodiversity conservation.

The need for coordination mechanisms applies to all four previous management tasks. It is essential for the development of integrated information systems on high seas biodiversity conservation and priorities; for ensuring that international measures are mutually reinforcing; in order to actively promote ways to extend protections to additional threats and States; to support states in strengthening implementation and compliance; and to improve accountability.

GAPS: Several regions have initiated efforts to establish coherent MCPA networks, and there has been some progress in coordinating initiatives among regional seas, the biodiversity-related conventions, and other global conventions. For the most part, these initiatives do not extend to the high seas in the region. Greater efforts are needed to coordinate between regional seas bodies and RFMOs in relation to species and habitat conservation, and it may be appropriate for regional mechanisms to examine the need for protective measures to conserve biodiversity on the high seas in order to realize conservation goals within national jurisdiction and promote ecologically-coherent initiatives.

At the global level, bodies like FAO, IMO, UNEP and others have a facilitating and reinforcing role to play vis-à-vis regional and national initiatives within their mandates and in promoting consistent approaches. It would also be appropriate for the UN Open-ended Informal Consultative Process on Oceans and the Law of the Sea (ICP) to examine at some stage progress under oceans-related agreements in conserving high seas biodiversity.

8. LENS NO. 6: LEGAL OPPORTUNITIES

This paper has suggested a number of international ‘regime’ options that could be examined as a means of advancing high seas biodiversity conservation. The purpose of this section is merely to recall these legal opportunities and initiate a list for further elaboration. They include:

- Studying models in national legislation as a means to balance high seas freedoms and conservation goals; for example regarding pollution from international shipping in the EEZ or conservation of continental shelf sedentary species beyond 200 miles. On the latter, it has been reported that Norway introduced non-trawling areas in 1999 to avoid potential damage to deep-water coral reefs;⁶⁰ evidently these do not apply to areas beyond 200 miles on the legal continental shelf;
- Drawing on the criteria and guidelines evolving in regional seas agreements, the World Heritage Centre process, and other processes for MCPAs and networks in order to develop a more systematic and coherent approach to area protection for high seas biodiversity conservation and priorities and expedite conservation achievements;
- Drawing on the evolving voluntary codes among scientists undertaking research at hydrothermal vents for wider regional and global commitments, and there may be similar good practice codes among underwater archaeologists;
- Entering into collective or like-minded “activities” and “area” agreements;
- Opening like-minded and international agreements to accession by additional states to strengthen support for conservation measures;
- Entering into non-binding agreements as a means of paving the way toward more formal measures, whether collective agreements among like-minded states or regional and global instruments of a non-binding character;
- Entering into collaborative agreements with the submarine cable industry or private enterprises engaged in activities directed at underwater cultural heritage, in order to create safe havens for biodiversity; and
- Identifying and mapping areas of particular biodiversity value and thus their potential for listing under an international instrument, and to reinforce the case for legal designations as contemplated in the PSSA guidelines discussed in section 5.

9. A SCENARIO FOR MOVING FORWARD

As with management tasks and tools, logical sequencing is necessary to advance high seas biodiversity conservation and establish priorities and time frames for action. The different lenses

used to explore the topic in this paper may help identify steps for moving forward. These might include:

Identify ongoing data collection, inventory, and research initiatives that add to knowledge of high seas biodiversity and threats and highlight and sequence the most important information needs for conservation and management purposes. Create a central reference point to publicize availability of scientific knowledge.

From an “activities” perspective, identify priority gaps in commitments and enforcement.

From an “activities” perspective, identify and prioritize the need for private sector codes to reduce adverse impacts (e.g., marine scientific research, submarine cables, marine archaeology).

From an “areas” perspective:

- launch an initiative to develop criteria and guidelines for HSMPAs in conformity with the CBD framework and through the World Parks Congress as suggested by the Malaga Workshop;
- as part of the larger mapping initiative of ecosystems and habitat in a biogeographic context, extend regional efforts to cover adjacent high seas areas and identify sites of high biodiversity value; improve the database on these sites and identify priorities;
- create a central reference point to publicize and make available information on HSMPAs;
- as HSMPAs are established, designate a “Coordinating State” to actively pursue extended recognition and support of each site;

From a “coordination” perspective:

- intensify collaboration at the regional level among international (regional and global) regimes to improve coordinated approaches that link conservation goals within national jurisdiction to adjacent high seas biodiversity conservation;
- at the global level, request the UN ICP to focus at a future session on progress made under international agreements toward establishing ecologically-coherent marine protected area networks and a representative global network, with particular emphasis on the intergovernmental coordination and cooperation needed in areas beyond national jurisdiction and the need for a unifying policy framework.⁶¹

These steps could help build knowledge, interest, and recognition of high seas biodiversity conservation concerns. They could also build confidence in approaches to this issue and lay the groundwork for more substantial future actions.

ENDNOTES

¹ See Tomme Rosanne Young, “Protecting the Natural Resources of the High Seas: Relevant policy and legal instruments and options for a strategy to protect priority areas and promote a system of MPAs,” IUCN/WWF, January 2003 at 3, available from tyoung@elc.iucn.org. See also Report on the IUCN, WCPA and WWF HSMPAs Workshop, 15-17 January 2003, Malaga, Spain, IUCN Information Paper, March 2003; and *Proceedings* of same, IUCN, 2003.

² UNEP/CBD/SBSTTA/8/INF.3/Rev.1, 22 Feb. 2003 and UNEP/CBD/SBSTTA/8/9/Add.3/Rev.1, 20 February 2003.

³ Lee A. Kimball, *International Ocean Governance: Using International Law and Organizations to Manage Marine Resources Sustainably*, IUCN, Gland, Switzerland and Cambridge, UK, 2001.

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- ⁴ The term regional is used to include sub-regional bodies.
- ⁵ UNCLOS art. 118; FSA arts. 7, 8.
- ⁶ See Report of the Third Meeting of Regional Fishery Bodies, 3-4 March 2003, FAO Fisheries Report No. xxx, FAO, 2003, paras. 24-26 and Annex E; UNEP: Ecosystem-based Management of Fisheries: Opportunities and challenges for coordination between marine Regional Fishery Bodies and Regional Seas Conventions. *UNEP Regional Seas Reports and Studies No. 175*. UNEP, 2001.
- ⁷ US Senate Treaty Document 103-39 (1994) at page 46. [Message from the President transmitting UNCLOS and the Agreement relating to the Implementation of Part XI of UNCLOS]
- ⁸ International Seabed Authority Document ISBA/8/A/5, 7 June 2002, at para. 53; derived from ISBA/8/A/1, 9 May 2002 at para. 20.
- ⁹ Regulation 31(7).
- ¹⁰ ISBA Document ISBA/8/A/5, note 8 *supra*, at para. 42.
- ¹¹ International Convention for the Prevention of Pollution from Ships (1973) and 1978 Protocol (MARPOL 73/78), and Convention for the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention, 1972) and 1996 Protocol.
- ¹² The IMO adopted a mandatory reporting scheme off the US East Coast in 1998 to protect endangered large whale species from direct physical impact from ships.
- ¹³ IMO submissions for A/58/50, available at <http://www.un.org/depts/los/index.htm>.
- ¹⁴ Susan Gubbay, "Protecting the Natural Resources of the High Seas, Scientific Background Paper, IUCN/WWF, January 2003 at para. 7.8.2, available from sgard@mayhill.u-net.com.
- ¹⁵ UNEP/CBD/SBSTTA/8/INF.3/Rev.1, 22 Feb. 2003 and UNEP/CBD/SBSTTA/8/9/Add.3/Rev.1, 20 February 2003. See also H. Korn, S. Friedrich, U. Feit, *Deep Seabed Genetic Resources in the Context of the CBD and the UN Convention on the LOS*, Federal Agency for Nature Conservation, Bonn, Germany, 2003.
- ¹⁶ The issue arose at the XXV Antarctic Treaty Consultative Meeting (ATCM) in Warsaw in September 2002 and will be considered at XXVI ATCM in Madrid in June 2003. A recent workshop on this subject was hosted by Gateway Antarctica at the University of Canterbury, Christchurch, New Zealand, 7-8 April 2003, see www.anta.canterbury.ac.nz.
- ¹⁷ US Department of Energy \$9 million financing for J. Craig Venter's Institute for Biological Energy Alternatives. *The Washington Post*, 25 April 2003 at E5; Reuters *Environmental News*, 28 April 2003.
- ¹⁸ Gubbay, note 14 *supra*, at para. 7.10.2; Lyle Glowka, "Putting MSR on a Sustainable Footing at Hydrothermal Vents," submitted to *Marine Policy*, available from lglowka@csi.com.
- ¹⁹ Statement of the President on the work of the Assembly at the eighth session, ISBA Document ISBA/8/A/13, 14 August 2002 at para. 11.
- ²⁰ ISBA Document ISBA/8/A/5, note 8 *supra*.
- ²¹ *Ibid.* at para. 54.
- ²² The MOMAR (MONitoring the Mid-Atlantic Ridge) initiative promotes international coordination and cooperation in vent areas within and beyond national jurisdiction, while InterRidge also aims to avoid user conflicts among scientists at particular sites (www.intridge.org). The idea of an MSR code of conduct at vent sites was first introduced in 1999. See Glowka, note 18 *supra*, at 9-15. See also David Leary, "Law Reaches New Depths: The Endeavour Hydrothermal Vents Marine Protected Area," available at David.Leary@law.mq.edu.au; and *Proceedings of the Malaga Workshop*, note 1 *supra*.
- ²³ Personal communication.
- ²⁴ UNEP/CBD/COP/7/3, 9 April 2003 at para. 17(b).
- ²⁵ UN Doc. A/58/50, "Oceans and the Law of the Sea," advance unedited text, 2003 at para. 194, with reference to *The status of natural resources on the high seas*, WWF/IUCN (2001), Gland, Switzerland.
- ²⁶ Gubbay, note 14 *supra*, at para. 7.5.1.
- ²⁷ Southern Ocean Iron Experiment Cruise, 5 Jan. – 26 Feb. 2002. See <http://www.mbari.org/education/cruises/SOFEX2002/index.htm>.
- ²⁸ S.W. Chisholm, P.G. Falkowski, J.J. Cullen, "Dis-Crediting Ocean Fertilization," *Science*, vol. 294, 12 Oct. 2001 at 309-310.
- ²⁹ US Senate Treaty Document 103-39, note 7 *supra*, at p. 94.
- ³⁰ Glowka, note 18 *supra*, at page 12, note 49.

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- ³¹ Gubbay, note 14 *supra*, at para. 7.9.
- ³² William Wertenbaker, "The Law of the Sea – II", *The New Yorker*, 8 August 1983 at 80.
- ³³ Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) Recommendation VIII/3.D, UNEP/CBD/COP/7/3, 9 April 2003.
- ³⁴ SBSTTA Recommendation VIII/3B, *Ibid*.
- ³⁵ *Ibid* at para. 18.
- ³⁶ Stephen R. Palumbi, "Marine Reserves, A Tool for Ecosystem Management and Conservation," prepared for the Pew Oceans Commission, Stanford University, Stanford, California, 2002, p. 2, cited in UN Document A/58/50, note 25 *supra*, at para. 227.
- ³⁷ Mediterranean Protocol Concerning Specially Protected Areas and Biological Diversity (1995) and 1996 Annexes, which supersedes the 1982 Protocol on Specially Protected Areas; East African Protocol Concerning Protected Areas and Wild Fauna and Flora (1985), currently being updated; South East Pacific Protocol for the Conservation and Management of Protected Marine and Coastal Areas (1989); Wider Caribbean Region Protocol Concerning Specially Protected Areas and Wildlife (1990); Northeast Atlantic Convention, Annex V on the Protection and Conservation of the Ecosystems and Biological Diversity of the Maritime Area (1998); Black Sea Biodiversity and Landscape Conservation Protocol (2002); *draft* Gulf/Kuwait and Red Sea/Gulf of Aden Protocol Concerning the Conservation of Biological Diversity and the Establishment of Protected Areas.
- ³⁸ Mediterranean, 1995; OSPAR, Annex V, 1998; Black Sea, 2002, note 37 *supra*.
- ³⁹ The Protocol on Conservation and Management of Protected Marine and Coastal Areas of the South-East Pacific (1989) specifically applies to the continental shelf beyond 200 miles (art. 1).
- ⁴⁰ Annex V on Area Protection and Management (1991) to the Protocol on Environmental Protection (1991) of the 1959 Antarctic Treaty. When marine areas are included in a designation, both the Antarctic Treaty decision-making body and the Commission on the Conservation of Antarctic Marine Living Resources must approve.
- ⁴¹ See Kimball, note 3 *supra*, at 34.
- ⁴² IMO Assembly Resolution A/927(22), Annex 1, *Guidelines for the Designation of Special Areas Under MARPOL 73/78*, 29 Nov. 2001 at para. 2.9 and 2.10.
- ⁴³ IMO Assembly Resolution A.927(22), Annex 2, *Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas* at para. 6.2.
- ⁴⁴ SBSTTA Decision VIII/3B, note 33 *supra*, at paras. 11, 20.
- ⁴⁵ See Young, note 1 *supra*, at 20-22, 31-33; and *Proceedings of the Malaga Workshop*, note 1 *supra*.
- ⁴⁶ **get cite**
- ⁴⁷ Protocol Concerning Specially Protected Areas and Biodiversity (1995). See Tullio Scovazzi, "A Dynamic System", update Dec. 2002, available from tullio.scovazzi@unimib.it; and Young, note 1 *supra*, at 16-18.
- ⁴⁸ Young, note 1 *supra*, at 16.
- ⁴⁹ It has been suggested that the Logatchev site, a hydrothermal vent field on the mid-Atlantic ridge, be designated by ISBA as a no mining area. See David Leary, "The ISBA and Designation of Sensitive No Mining Areas for the Conservation of Hydrothermal Vent Ecosystems on the High Seas: Legal and Practical Realities," prepared for the WWF North-East Atlantic Programme. Available from David.Leary@law.mq.edu.au.
- ⁵⁰ Gubbay, note 14 *supra*, at 19.
- ⁵¹ Young, note 1 *supra*, at 29 indicates this has been accomplished .
- ⁵² This would build on the UNEP-WCMC database of MCPAs, managed in collaboration with IUCN's World Commission on Protected Areas (WCPA). See SBSTTA Decision VIII/3B and Annexes I and IV, note 33 *supra*.
- ⁵³ *Proceedings of the World Heritage Marine Biodiversity Workshop*, 25 Febr. – 1 March, 2002, Hanoi, Viet Nam, eds. A. Hillary, M. Kokkonen, and L. Max, *World Heritage Papers No. 4*, UNESCO World Heritage Center, 2002 at Annex II.
- ⁵⁴ See *Proceedings of the Malaga Workshop*, note 1 *supra*; see also Young, note 1 *supra*, at 33.
- ⁵⁵ The Pacific group recommended increased attention to identifying suitable high seas areas and to developing the legal/political basis for establishing them. *Proceedings*, note 53 *supra*, at 18, 37.

⁵⁶ Under UNCLOS, ISBA is to coordinate and disseminate the results of MSR in the Area (art. 143(2)). It plans an archived collection of biota for use by the scientific community, and a central data repository that reconciles data and information using uniform formats. See ISBA Document ISBA/8/A/5, note 8 *supra*, at paras. 40-47.

⁵⁷ In November 2002 CITES for the first time took action to include marine fish species -- basking sharks, whale sharks, and all 28 species of seahorses -- as subject to Appendix II protections. See Young, note 1 *supra*, at 10.

⁵⁸ UNCLOS art. 290; FSA art. 31.

⁵⁹ Under FAO auspices there have been discussions of elements for establishment of regional MOUs on port state measures to deter IUU as well as harmonized and coordinated approaches to inspecting fishing vessels in port and the possibility of a harmonized system of certification of fishing vessels to facilitate inspections. See Report of the Expert Consultation to Review Port State Measures to Combat IUU Fishing, 4-6 November 2002, *FAO Fisheries Report No. 692*, FAO, 2003.

⁶⁰ UN Doc. A/58/50, note 25 *supra*, at para. 222, with reference to *The State of the World Fisheries and Aquaculture, 2000*, FAO Fisheries Department, FAO, Rome, 2000 at pp. 13-15.

⁶¹ IUCN Statement at the UN ICP, Fourth Meeting, 2-6 June 2003.