# Current Legal Development

## High Seas Marine Protected Areas

### Participant' Report of the Expert Workshop on Managing Risks to Biodiversity and the Environment on the High Seas, Including Tools Such As Marine Protected Areas: Scientific Requirements and Legal Aspects

From 27 February to 4 March 2001, a group of distinguished scientists, lawyers and representatives from governmental, intergovernmental and non-governmental organisations met to discuss some of the most pressing issues confronting the high seas today, and to explore the legal aspects of high seas marine protected areas. This workshop, organised by the German Federal Agency for Nature Conservation, financed by the Federal Ministry of the Environment Germany, with support from IUCN, Environment Australia, the Irish Government and the Joint Nature Conservancy Commission of the UK, took place on the German isle of Vilm. It had four parts: (1) scientific presentations; (2) reports by organisations; (3) analyses of the legal basis for action; and (4) the elaboration of the Conclusions and Summary Record of the Expert Workshop. This report will highlight, from a participant's perspective, the content of these presentations, legal discussions and conclusions, and end with some suggestions for future action that could not be addressed in the official record.

#### Background

More than 10 years ago, Sylvia Earle, noted ocean explorer and then Chief Scientist for the United States National Oceanic and Atmospheric Administration (NOAA), made a visionary plea for a system of Wild Ocean Reserves. An International Meeting on Wild Ocean Reserves, convened by the NOAA under her leadership in October 1991, noted that the oceans were under severe threats from pollution and overexploitation, and that attention was needed to address the 60 per cent of the world's ocean areas that are outside national jurisdiction or control. The Resolution of the Meeting urged that a global network of high seas marine protected areas – Wild Ocean Reserves – be established to ensure the

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future sustainability of critically sensitive marine ecosystems and ocean resources of unique scientific, cultural and aesthetic value. It further called on the United Nations Conference on Environment and Development to develop a programme of actions to be included as part of Agenda 21.[1]

Ten years later, little progress has been made. Drift-nets have been banned from the high seas, but other equally pernicious fishing technologies such as deep-sea trawls continue to stripmine the oceans of their wealth and balance. As fish stocks decline in shallow coastal waters, technological improvements allow trawls to plough further offshore into deeper waters in pursuit of new stocks. The 1995 UN Straddling Stocks Agreement[2] may improve conservation prospects for fish stocks that straddle or migrate between the high seas and national waters, when and if it comes into force, provided it is effectively implemented and enforced. However, it still leaves important non-migratory species such as the orange roughy (and their seamount habitats) unprotected. By addressing only fishing activities, it leaves untouched the problem of pollution and habitat degradation threatening whales, seabirds and other species caused by high seas activities such as shipping, military uses, oil and gas exploitation (as deep as 2,000 metres) and certain scientific research activities. It certainly does not address future threats to deep-sea hydrothermal vent communities from minerals mining and bioprospecting for genetic resources. Although the 1982 United Nations Convention on the Law of the Sea addresses many of these issues, it does not provide a concrete mechanism for immediate action.

Alarmed by the increasing degradation of the high seas marine environment, Australia has been actively calling on the international community to explore a range of tools, including marine protected areas, to protect biological diversity and ecosystem processes on the high seas. In support of this effort, IUCN (the World Conservation Union) adopted a resolution at its Second World Conservation Congress in Amman, Jordan in October 2000, calling on governments, international agencies and non-governmental organisations to identify areas of the high seas suitable for collaborative management action, and to reach agreement by consensus on regimes for their conservation and management.

Marine protected areas, or Wild Ocean Reserves as Sylvia Earle called them, can range from fully protected marine reserves where few if any human activities are allowed, to large zoned areas managed to accommodate sustainable uses. In areas within national jurisdiction, marine protected areas are now widely accepted as a key tool to protect marine biodiversity and productivity. In fact, in February 2001, 150 of the world's leading marine scientists issued a scientific

[1] Resolution of the Wild Ocean Reserves International Workshop, Honolulu, Hawaii, 2 October 1991. David Freestone kindly provided me his papers and notes from this meeting.

[2] Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks.

consensus statement proclaiming there is now compelling evidence that providing protection on an area basis works. It urged the immediate application of fully protected marine reserves as a central ocean management tool.[3] The workshop in Vilm was convened to explore ways that marine protected areas and other tools could be adapted for areas beyond national jurisdiction, that is the high seas beyond coastal states' 200-mile exclusive economic zones (EEZs).

## Threats to High Seas Species and Ecosystems

The workshop began with scientists presenting evidence of high seas ecosystems and species at risk. The list of threats identified below is by no means complete, but represents the areas of expertise present at the meeting.[4]

*Seamount ecosystems*

Seamount ecosystems are being destroyed by fishermen trawling for deep-water fish.[5] These unique ecosystems – formed atop mounds or extinct volcanoes rising from the seafloor – are rich in biodiversity and support a level of productivity much above that of the flat abyssal plane surrounding them. Scientists have discovered that seamounts host a high degree of endemism (species unique to that area), with surprisingly little overlap in species between seamount clusters. A number of commercially important species, such as the orange roughy, on and above seamounts, attract fishermen. Orange roughy are long-lived, slow to mature and have very low reproductive rates, all factors which make them unsuited for intensive fishing efforts. To catch the orange roughy, deep-water trawlers drag heavily weighted nets across the seamounts, crushing and destroying the benthic community at the same time as scooping up all the fish, causing a rapid collapse of these fish stocks. When the fish are gone, the fishermen move on to the next seamount. Several countries are very concerned. For example, Australia has already established the Tasmanian Seamounts Marine Reserve to protect seamount ecosystems in their own exclusive economic zone. The need for international protection is urgent as deepwater trawling has

[3] The full statement on the effectiveness of marine reserves, issued at the February meeting of the American Association for the Advance of Science, is available at www.nceas.ucsb.edu/consensus. A recent report, *Fully Protected Marine Reserves: A Guide*, by Callum M. Roberts and Julie P. Hawkins (WWF Endangered Seas Campaign, 2000), vividly demonstrates the benefits of marine reserves on fisheries recruitment, biodiversity conservation, habitat protection, and the overall health of the oceans. For example, the benefits to fishermen are apparent within two to four years: in and around marine reserves, fish population doubles, fish size grows by 30 per cent and reproduction triples.

[4] For a comprehensive view of high seas habitats, resources and threats, see *The Status of Natural Resources on the High Seas* (WWF and IUCN, May 2001); see also Thorne-Miller, Boyce, *The Living Ocean: Understanding and Protecting Marine Biological Diversity* (Island Press, 2nd ed., 1999), chapter 5. For an exciting history of deep-sea research, exploration and military activities, see William J. Broad, *The Universe Below: Discovering the Secrets of the Deep Sea* (Touchstone, 1997).

[5] J. Anthony Koslow, "Fish Stocks and Benthos of Seamounts", see Workshop Proceedings, note 31 below.

recently extended into the previously unfished seamounts on the high seas of the Indian Ocean.

*Cold and deep-water coral communities*

Cold and deep-water coral communities in the Atlantic are being crushed by modern trawlers.[6] According to reports, fishermen drag extra heavy weights, or even wrecking balls on chains, over the reefs to destroy the coral and thus prevent their nets from getting snagged on the craggy coral surface. Cold water coral reefs are a unique and extremely diverse ecosystem that takes thousands of years to grow. As with their tropical relatives, they fix carbon dioxide from sea water, serve as a key structural element in the local deep-sea ecosystem and provide home for the juveniles of many commercially important fish species. However, they are extremely vulnerable to destruction by fishing gear. Investigations of reefs off Norway revealed that 30–50 per cent of the reefs – the most shallow ones – had already been destroyed. Soon after the investigation, Norway declared several areas off limits to deep-water trawling. The increasing ability of modern trawlers to operate in ever deeper waters has stimulated scientists to urge a halt to destructive fishing practices and the creation of a sustainable management strategy to protect deep-water coral ecosystems both within and beyond the limits of national jurisdiction.

*Deep-water fish stocks in the North-East Atlantic*

All deep-water fish stocks in the North-East Atlantic have been fished beyond safe biological limits.[7] Deep-water fisheries occur primarily at depths between about 400 and 1,500 metres, on the continental slope and around oceanic islands and seamounts. The recent expansion of fisheries into the deep sea has fisheries biologists scrambling to catch up to gain sufficient scientific knowledge to allow for adequate stock management. Scientists already know enough to realise that traditional fishery management methods such as total allowable catches (TACs) and minimum mesh sizes are entirely unsuited for mixed deep-sea fisheries. This is for two reasons. First, deep-water fish cannot withstand the effects of the pressure/temperature change between the deep and surface waters and thus die when brought to the surface. Secondly, most deep-water fish have extremely fragile skins, so that even the smaller ones that escape from nets may be fatally injured. Thus, not only are the fish stocks overexploited, but the bycatch of these fisheries is wreaking havoc on the ecosystems of which they are a part. In addition to drastic reductions in catches, the International Council for the Exploration of the Seas has advised the EU that it should call for a general trawl

[6] Anthony J. Grehan, "Deep Water Coral Conservation" (Workshop Proceedings, note 31 below).

[7] John D.M. Gordon, "Deep-Water Fish and Fisheries" (workshop paper, note 5 above).

[8] Cornelius Hammer, "Response by the International Council for the Exploration of the Seas (ICES) to the Request for Advice on Deep Water Fisheries Management by the European Community (EC)" (Workshop Proceedings, note 31 below, presented by John Gordon).

ban for the deep sea.[8] In the short term ICES recommends a zoning system to prevent expansion of trawl fisheries into new areas. Such measures ought to cover the high seas as well.

*Tuna fish stocks and their associated offshore pelagic ecosystems*

Tuna fish stocks and their associated offshore pelagic ecosystems are under intensive pressure and could benefit from marine protected areas.[9] Tuna stocks are migratory, but generally travel only limited distances. Thus a fisheries reserve that covers a significant area (for example, 20 per cent of the area of distribution) and includes spawning zones and nursery areas, would make a significant contribution to ecosystem management as well as provide a safety net for long-term sustainable use of tuna stocks. In an effort to shift fisheries management from the single species to an ecosystem level, various tuna commissions are starting to elaborate management plans based on closed areas to reduce fishing mortality of both tunas and their by-catch species. However, these current plans give little attention to high seas areas.

*Seabirds*

Seabirds are under threat from a variety of sources, including fishing gear which ensnare and drown them, oil spills and oily discharges from ships which contaminate their feathers, and fishing activities causing reduction in prey species.[10] Seabird aggregations at sea are usually associated with concentrations of food. Oceanographic factors such as currents and upwellings rather than geographic factors often determine their important feeding areas. This can make it difficult (though not impossible) to predict appropriate protected areas. However, sand eels living on shallow sand banks (less than 150 metres deep) are another major source of food. These can be more easily identified and protected by area-based restrictions on fishing activities.[11]

*Cetacean species*

Many highly endangered cetacean species are threatened by multiple factors, and require comprehensive management measures that can address all major threats.[12] The total ocean area which migratory baleen whales cover is enormous, and it is difficult to identify and protect critical habitat, other than a few well-known feeding and breeding areas. Migratory pathways should be protected as well. The

[9] Alain. Fonteneau, "Potential Use of Marine Protected Areas Applied to Tuna Fisheries and Offshore Pelagic Ecosystems" (workshop Paper, note 5 above, presented by Anthony Koslow).

[10] Charlotte. Johnston, "Conservation Status and Needs of High Seas Birds: Considerations from the UK Perspective" (Workshop Proceedings, note 31 below).

[11] Adjustments to fishing gear may also help. For example, hook weighting and other gear adjustments on long-line fishing vessels promise to reduce albatross takes in the North Pacific by more than 90 per cent from the current 34,700 albatrosses a year. Hjalmar Thiel and Eric L Gilman, "Protection for Seabirds on the High Seas" (Workshop Proceedings, note 31 below).

[12] Greg. Donovan, "Scientific Challenges in Determining the Need for and Scope of Marine Protected Areas for Whales, Dolphins and Porpoises" (Workshop Proceedings, note 31 below).

two whale sanctuaries adopted by the International Whaling Commission only prevent hunting, and not the equally pernicious threats of ship strikes, gear entanglement, chemical pollution and prey depletion. Effective protection must target both critical habitats and the major threats to their existence.

*Hydrothermal vent communities*

Hydrothermal vent communities are highly unusual, ancient ecosystems that have already been impacted by the scientists who study and sample them, and face an even greater threat from future mining for polymetallic sulphide deposits formed at vents.[13] Hydrothermal vent communities thrive through a unique symbiotic relationship that turns bacteria in hydrothermal fluid into the main food supply for the entire community. Most species at hydrothermal vents have a very limited distribution and thus a high degree of endemism. They are also highly sensitive to disturbance. Scientific collection of minerals and biological samples from certain vent communities, for example along the East Pacific Rise, has already caused changes in the distribution and occurrence of vent fluid flows and associated vent communities. Steps towards self-policing have already been taken by scientists, but the same voluntary action cannot be assumed to accompany commercial bioprospecting activities for genetic resources.[14] Mining impacts at vent sites threaten even greater impacts. It would not only destroy targeted sites but also could smother nearby habitats and cut off hydrothermal fluid flow to other vent communities.[15]

*Unique scientific reference areas*

Unique scientific reference areas – areas that have been thoroughly studied and therefore provide an essential baseline to understand ocean processes – may be threatened as trawl nets extend deeper and deeper, by offshore oil and gas production, and deep sea-bed mining in the future.[16] It is essential to put these habitats off limits now, in order to preserve their unique scientific contributions as reference areas for future generations.

In essence, the Vilm scientific presentations called for measures to address harmful fishing practices and other human endeavours that are destroying a landscape and biodiversity that we are only beginning to understand. Marine protected areas that can regulate incompatible activities within a discrete, well

[13] S. Kim Juniper, "Background Paper on Deep-Sea Hydrothermal Vents" (Workshop Proceedings, note 31 below).

[14] Lyle Glowka, "Testing the Waters: Establishing the Legal Basis to Conserve and Sustainably Use Hydrothermal Vents and their Biological Communities" (Workshop Proceedings, note 31 below).

[15] Unregulated tourism (and souvenir collection) could also pose another threat. For a mere US$30,000, tourists can already visit deep-sea hydrothermal vents by diving in Russian submarines, an opportunity that may actually attract the jaded but wealthy tourist who has been everywhere but the deep sea and outer space.

[16] Hjalmar Thiel, "Unique Scientific Reference Areas on the High Seas" (Workshop Proceedings, note 31 below).

selected area would be an important tool in addressing many of these threats, and make an invaluable contribution to sustaining ocean biodiversity and productivity.

### Actions Underway

The next part of the workshop provided reports by organisations on their activities concerning protection of high seas areas. Representatives from Australia, the Commission for the 1992 Convention on the Protection for the Marine Environment of the North East Atlantic (OSPAR Convention), the International Whaling Commission, the 1992 Convention on Biological Diversity, the World Conservation Union (IUCN), the World Wide Fund for Nature (WWF) and the United Nations Informal Consultative Process on Oceans and the Law of the Sea gave presentations. Some of the most interesting news follows.

(1) While the Convention on Biological Diversity does not itself apply to components of biological diversity beyond the limits of national jurisdiction (i.e. its jurisdictional scope does not extend to the high seas), it does call for parties to co-operate in the conservation and sustainable use of biological diversity in such areas.[17] In addition, the Convention applies to processes and activities carried out under the jurisdiction or control of a party that can affect biological diversity or the environment beyond the limits of national jurisdiction. The Jakarta Mandate on Marine and Coastal Biological Diversity, agreed by the parties in 1995, encourages the establishment of marine protected areas as part of an ecosystem approach to conserving marine biodiversity. Marine protected areas will be a priority issue at the Seventh Conference of Parties in 2004.[18]

(2) Australia has in recent years been active in calling on the international community to explore a range of tools, including marine protected areas, to achieve effective protection of biological diversity and ecosystem processes on the high seas. It recognises the urgent need to identify politically acceptable measures that both ensure protection of high sea biodiversity and are consistent with the rights and duties of the 1982

[17] Thus, if a marine protected area were established through mutual agreement under the auspices of the Convention on Biological Diversity, parties could be obliged to regulate activities and processes under their jurisdiction or control, such as fishing or shipping, to protect these areas.

[18] Marjo Vierros, "The Convention on Biological Diversity and Marine Protected Areas on the High Seas" (Workshop Proceedings, note 31 below).

[19] David Osborn, "Challenges to Conserving Marine Biological Diversity on the High Seas Through the Use of Marine Protected Areas – An Australian Perspective" (Workshop Proceedings, note 31 below).

[20] Detlef Czybulkan, "The Convention on the Protection of the Marine Environment of the North-East Atlantic" (Workshop Proceedings, note 31 below). Henning Von Nordheim, "Draft Guidelines for the Management of Marine Protected Areas in the OSPAR Maritime Area" (workshop presentation of Annex V of the Report of the Second Workshop on Marine Protected Areas in the OSPAR Area held at Vilm, 6–9 June 2000).

United Nations Convention on the Law of the Sea. Realising that global consensus may be reached only slowly, Australia is proposing a small-scale pilot project between like-minded states to demonstrate to the international community how marine protected areas on the high seas can be developed and work in practice, based on voluntary compliance.[19]

(3) The parties to the OSPAR Convention are setting up a system of marine protected areas for the North Atlantic.[20] This is pursuant to the Convention's Annex V ("On the Protection and Conservation of the Ecosystems and Biological Diversity of the Maritime Area") that came into force in 2000. The OSPAR Commission has already prepared a list of aims for future marine protected areas, management objectives and selection criteria. Given the geographic scope of the OSPAR Convention, and the goal of conserving representative areas of the marine environment, its is envisaged that they will be establishing protected areas on high seas segments within the North Atlantic region, though not within the short term.[21]

(4) Lessons learned from the whale sanctuaries established by the International Whaling Commission in the Indian and Southern Oceans indicate that protected areas are best established through a formal international procedure for approval, with specific objectives, appropriate geographical and temporal boundaries, and mechanisms for monitoring and enforcement.[22] However, a small number of marine protected areas should not be seen as a replacement for effective management of the oceans.

(5) The United Nations Informal Consultative Process on Oceans and the Law of the Sea was created based on a finding of the Commission on Sustainable Development that there was a need to improve co-ordination and co-operation on ocean issues among multilateral agencies. Its first meeting focused on fisheries and land-based sources of marine degradation. Its second meeting in May 2001 will address the issues of marine scientific research and piracy-at-sea. The process has already provided insights and information to the UN General Assembly that have raised the level of awareness on oceans and law of the sea issues.[23]

[21] Given the urgency of the situation with respect to cold water corals and deep-water fish stocks in the North-East Atlantic, it is hoped that OSPAR can speed up the process of establishing marine protected areas on the high seas areas covered by the Convention, in collaboration with other user states.

[22] Greg Donovan, "Legal Aspects of Sanctuaries (Marine Protected Areas) and the International Whaling Commission: Some Observations from An Ignorant Biologist" (Workshop Proceedings, note 31 below).

[23] Alan Simcock, oral presentation, "The UN Open-Ended Informal Consultative Process on Oceans and the Law of the Sea". It is hoped by some that the Consultative Process will be a useful forum for discussing protection of risks to biodiversity and the environment on the high seas and for bringing the issue to the attention of the UN General Assembly for possible global action.

(6) At its Second World Conservation Congress, IUCN adopted a resolution on high seas marine protected areas. Resolution 2.20 (agreed 11 October 2001 in Amman, Jordan), was adopted by consensus, with only the United States indicating its discontent. Its two most important paragraphs call on ''the Director-General to work with IUCN members and multilateral agencies to explore an appropriate range of tools, including high seas Marine Protected Areas, with the objective of implementing effective protection, restoration, and sustainable use of biological diversity and ecosystem processes on the high seas''; and ''national governments, international agencies, and the non-governmental community to better integrate established multilateral agencies and existing legal mechanisms to identify areas of the high seas suitable for collaborative management action, and to reach agreement by consensus on regimes for their conservation and management''.

(7) The WWF has started a Global 200 Initiative seeking to preserve over 200 ecologically important areas around the world, including marine areas. One of the key goals of this programme is to establish a network of effectively managed ecologically representative marine protected areas covering at least 10 per cent of the world's oceans by the year 2010. The WWF and the IUCN are soon to release a study of high seas habitats, resources and threats, which also examines requirements for effective management.[24] The WWF's experience from managing marine protected areas around the world indicates that political will, legal security and stakeholder support are necessary to establish, manage and enforce the protected area status. On the high seas, it is recognised that stakeholder support can only be secured through respecting the rights of legitimate users.[25]

## The Legal Basis for Action

The focus of the workshop then turned to what the lawyers could offer. The 1982 United Nations Convention on the Law of the Sea (LOS Convention) was accepted as the framework for analysis. Differing interpretations of the LOS Convention ensured a lively discussion.

The main debate arose over use of the term ''Marine Protected Area'' in the context of the high seas. To certain lawyers, the term ''Marine Protected Area'' connoted a usurpation of sovereign rights and jurisdiction in an area that is subject to high seas freedoms. To these individuals, ''Marine Protected Areas'' only meant exclusionary zones unilaterally established by one state without

[24] Now available, see note 4 above.
[25] Simon Cripps and Sabine Christiansen, ''A Strategic Approach to Protecting Areas on the High-Seas'' (Workshop Proceedings, note 31 below).

consultation or participation by other user states.[26] However, it was pointed out that there were many types of marine protected areas, and that marine protected areas on the high seas would necessarily have to abide by the rights and duties imposed by the LOS Convention.

In contrast to coastal waters, activities on the high seas are governed by the age-old principles of free use and freedom of the seas. High seas freedoms listed in Article 87 of the LOS Convention include freedom of navigation, overflight, the laying and maintenance of submarine cables, the construction of artificial islands, fishing and scientific research. However, these rights are subject to other obligations in the Convention (as well as other rules of international law).

Also governing activities on the high seas is Article 192 of the LOS Convention that imposes an obligation on all states to protect and preserve the marine environment. This obligation includes the duty, set forth in Article 194(5), to take the 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. This duty is not limited to areas within national jurisdiction. Article 197 further calls on states to co-operate on a global and regional basis to formulate rules and standards for the protection and preservation of the marine environment.[27]

The right to fish on the high seas is also conditioned by the obligation to take measures necessary for the conservation of living resources, and to co-operate with other nations. Conservation measures are to be based on the best available scientific evidence and give consideration to the effects on associated and dependent species (Arts 116–120 of the LOS Convention).

Thus the LOS Convention calls on states to act together to find a mechanism to implement these duties. While mechanisms have been established to regulate fishing on the high seas (see below), less has been done to implement the obligation to protect rare and fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life on the high seas. The mechanism or process must be one that respects the rights of legitimate users of the high seas, and balances those rights against the obligations to protect and preserve rare and fragile ecosystems and conserve living resources.[28]

[26] The underlying concern seems to be fear that establishment of a Marine Protected Area would automatically exclude military activities in the area – one of the implicit freedoms of the high seas. It may be useful to note that military activities can co-exist compatibly with a marine protected area, based on the experience of Australia in its Great Barrier Reef Marine Park. Moreover, even though military craft may be entitled to sovereign immunity under Art. 236 of the LOS Convention, they are still expected to act in a manner consistent with, albeit only so far as is reasonable and practicable, the duty to protect and preserve the marine environment under Art. 192 of the LOS Convention. The impact of military activities on the high seas marine environment is an important subject that was not discussed at the workshop.

[27] Robin Warner, "Marine Protected Areas Beyond National Jurisdiction: Existing Legal Principles and Future Legal Frameworks" (Workshop Proceedings, note 31 below).

[28] A useful example of this sort of balancing exercise can be found in Guidelines approved in April 2001 by the International Maritime Organization's Marine Environment Protection Committee

It was eventually agreed that high seas management measures, possibly including protected areas, could be established under the LOS Convention but that measures could only be legally binding on consenting states. Involvement of affected coastal states and user states would be essential. As a result, the title of the workshop was changed from "Expert Workshop on Marine Protected Areas" to "Expert Workshop on Managing Risks to Biodiversity and the Environment on the High Sea, Including Tools Such As Marine Protected Areas".

The second debate focused on whether there was any real need for new measures to manage risks to the high seas. According to some, international or regional organisations already exist which can address the threats to high seas biological diversity and resources raised by the scientists.[29] An indication of some of the organisations and agreements relevant to the high seas are provided below, though a much more detailed study would be necessary to list them all.

(1) International shipping is regulated by the International Maritime Organization, the international body responsible for developing rules to govern safety of navigation and protection of the marine environment from ships.
(2) Activities related to the mining of mineral resources on the sea-bed beyond the continental shelf are under the jurisdiction of the International SeaBed Authority established by the LOS Convention. The International SeaBed Authority has responsibility to adopt rules to protect and conserve the Area's natural resources and prevent damage to the flora and fauna of the marine environment from deep sea-bed mining activities.[30]
(3) International fishing beyond the limits of national exclusive economic zones is governed by a host of bilateral and multilateral fisheries conventions and organisations.

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(MEPC) for the Identification and Designation of Particularly Sensitive Sea Areas (scheduled for final adoption by the IMO Assembly in November 2001). These Guidelines require states seeking to have an area designated as a Particularly Sensitive Sea Area (PSSA) and special protective measures adopted to submit a proposal to the IMO. This proposal must show that the area complies with recognised ecological, socioeconomic or scientific criteria, that it is vulnerable to shipping, and that the protective measures sought are within the IMO's competence to impose. The IMO will consider the impacts on international navigation. All IMO Member States and observer organisations have the right to comment on the proposal. Kristina M. Gjerde, "Protecting Particularly Sensitive Sea Areas from Shipping: A Review of IMO's New PSSA Guidelines" (Workshop Proceedings, note 31 below).

[29] Vladimir Kotliar, "Marine Protected Areas on High Seas (Some Legal Aspects)" (Workshop Proceedings, note 31 below).

[30] The International Seabed Authority lacks jurisdiction over scientific research activities or bioprospecting in the Area, issues of importance to the protection of hydrothermal vent communities.

(4) The 1995 UN Straddling Fish Stocks Agreement applies both within and beyond the EEZ and limits access to fishing on the high seas to those states co-operating with international or regional fisheries organisations.
(5) The International Whaling Convention is responsible for the conservation and management of whales.
(6) Regional fisheries organisations establish rules and regulations for fishing and the conservation and management of fish stocks. These include the North East Atlantic Fisheries Commission, the North Atlantic Salmon Conservation Organization, the International Commission for the Conservation of Atlantic Tunas, and many others.
(7) Environmental protection and conservation of living resources in Antarctic waters are under the purview of the Antarctic Treaty and the Commission for the Conservation of Antarctic Marine Living Resources.

It is clear that there are a host of applicable instruments and organisations that should be utilised whenever feasible. A combination of measures under existing legal instruments could provide a similar degree of protection to a marine protected area. The Summary Record of the Workshop contains an analytical methodology that was developed to assist in finding the most appropriate forum to address a particular threat to high seas ecosystems or species.

However, there are increasing instances where the appropriate organisation is overwhelmed by competing priorities, or the appropriate instrument is not in force, or is not being effectively implemented or enforced. Or there may be no applicable instrument. Moreover, reliance on a network of species-specific or sectoral instruments will achieve little if action is not integrated through an effective co-ordinating mechanism. This could be the United Nations General Assembly, the United Nations Informal Consultative Process on Oceans and the Law of the Sea, the Convention on Biological Diversity or some other institution. While it is clearly preferable to base action on existing instruments, the option of seeking a new instrument or the amendment of an existing instrument should not be excluded. However, this is a complicated and lengthy process.

In the short term, it was generally agreed that a few states might start a process to protect a feature (such as a seamount or cold water coral community) of the high seas environment on a small, regional or subregional scale. These states could agree to restrict their own activities and encourage other user states to join in. By focusing on the most urgent issues where the needs are greatest and the benefits likely to be the highest, a small number of states can lead by example. When the benefits are shown, the process can be expanded to include more sites and other user states.

## Summary of Workshop Conclusions

(1) The 1982 United Nations Convention on the Law of the Sea provides the framework for action to conserve biodiversity and other components of the marine environment on the high seas. This includes the duties to

respect high seas freedoms and to protect and preserve the marine environment.

(2) There is an urgent need for action in some areas of the high seas.

(3) The first step is to identify the specific threats and focus on the most appropriate regional or international institution(s) that can address such a threat.

(4) The most appropriate regional institution may be a regional fisheries management agency for specific fisheries issues, or a regional seas organisation for more comprehensive issues. Appropriate international institutions are the International Seabed Authority for issues related to mineral resources beyond national jurisdiction, the International Maritime Organization for issues related to shipping and dumping, the UN Food and Agriculture Organization for global fisheries issues, and the Intergovernmental Oceanographic Commission in relation to issues related to scientific research and reference areas.

(5) The Conference of Parties to the Convention on Biological Diversity and their Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) could usefully examine the possible contributions their work could make.

(6) Where no appropriate organisation exists, or the organisation faces conflicting priorities, international action may be appropriate. Possible mechanisms include:
   - a resolution of the United Nations General Assembly on the model of the drift-net resolution;
   - amendment of an existing agreement; and
   - conclusion of a new international or regional agreement.

(7) An important subject for early discussion within the United Nations Informal Consultative Process on Oceans and Law of the Sea should be the management of risks to biodiversity and other components of the marine environment on the high seas.

(8) Risk management measures need to be based on a precautionary approach, be consistent with the obligations, powers and duties established by the LOS Convention, and take account of any legitimate interests and uses of the oceans.

## Concluding Remarks

The ''Conclusions of the Expert Workshop on Managing Risks to Biodiversity and the Environment on the High Seas, Including Tools Such As Marine Protected Areas'' provide a sensible but painstakingly slow course of action. If the high seas crisis is caused in large part by the failure of international fishery commissions and other organisations to heed scientists' warnings, as in the case of the North-East Atlantic deep-water fisheries, then appealing to these same organisations again is not likely to produce rapid action. Four relatively short-term options raised in the meeting may bear consideration and elaboration:

(1) establish an International High Seas Risk Management Initiative, based on the example of the successful International Coral Reef Initiative, to raise public awareness of the threats to high seas marine biodiversity and ecological processes and thereby stimulate national, regional and international action;
(2) propose a resolution to the UN General Assembly to ban deep-water trawling on seamounts, cold water coral communities and other fragile habitats;
(3) propose an amendment to the 1972 Convention for the Protection of the World for Cultural and Natural Heritage to extend its jurisdictional reach to areas beyond the limits of national jurisdiction; and
(4) establish one or more pilot marine protected areas and Particularly Sensitive Sea Areas on the high seas.

It would be unfortunate if the long-term goal of a globally representative system of marine protected areas were dismissed as politically inexpedient. The shift in focus to ''risk management measures'' targeted on specific threats does not eliminate the need for an integrated, coherent and precautionary approach to preserving biodiversity and ecological processes on the high seas. As abundant evidence shows, the best long-term strategy for sustaining the ocean is a system of ecologically representative, effectively managed marine protected areas that can curtail unsustainable practices. If marine protected areas are seen as best practice in waters closer to home, why not on the high seas?

Although marine protected areas are not a replacement for effective management of our oceans, they do provide a mechanism to achieve that management. Most importantly, marine protected areas serve as our best and only insurance policy in the face of human ignorance and global change.

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