Marine Biodiversity Beyond National Jurisdictions Workshop
January 17, 2006

- Final Report -

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LIST OF ACRONYMS

BBNJ	Biodiversity Beyond National Jurisdictions
CBD	Convention on Biological Diversity (1992)
CCAMLR	Convention for the Conservation of Antarctic Marine Living Resources
CITES	Convention on International Trade in Endangered Species of Wild Flora and Fauna
EEZ	Exclusive Economic Zone
ENGO	Environmental Non-Governmental Organisation
IMO	International Maritime Organization
IUU Fishing	Illegal, Unregulated, and Unreported (fishing)
MARPOL	The International Convention for the Prevention of Pollution of Ships (1973/1978)
MERMO	Marine Ecosystem and Resource Management Organization
MPA	Marine Protected Area
NAFO	Northwest Atlantic Fisheries Organization
NEAFC	Northeast Atlantic Fisheries Commission
NGO	Non-Governmental Organization
RFMO	Regional Fisheries Management Organization
ROMO	Regional Ocean Management Organization
UNCLOS	1982 United Nations Convention on the Law of the Sea
UNFA	1995 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
UNGA	United Nations General Assembly
UNICPOLOS	United Nations Open-ended Informal Consultative Process on Ocean Affairs
VMS	Vessel Monitoring System

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OVERVIEW (DR. MOIRA L. MCCONNELL AND DR. DAVID VANDERZWAAG)

On January 17, 2006 the Marine & Environmental Law Institute based at Dalhousie Law School organized and hosted a one-day Workshop on the issue of Marine Biodiversity Beyond National Jurisdiction (BBNJ). The Workshop was organized with the financial support and cooperation of the Department of Foreign Affairs, in particular the Oceans and Environmental Law Division, in cooperation with Fisheries and Oceans Canada (International Coordination and Policy Analysis) and Environment Canada (Biodiversity Convention Office).

The Workshop was specifically designed as an informal workshop with a number of invited "Lead Commentators" drawn from academia, ENGOs, industry and government, but with no formal papers or presentations (with one exception, see Appendix III). Instead, a summary of the Lead Commentators' observations and the ensuing discussion is provided in this Report.

The Workshop had two primary objectives:

- to provide additional information and identify issues to assist in the formulation of a "Canadian view" on the issue of BBNJ for the interagency delegation that would be attending the first meeting (February 13-17, 2006) of the Ad Hoc Open-ended Informal Working Group on conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction created pursuant to UN resolution (59/24) which was passed in November, 2004 at the 59th UN General Assembly.

- to provide an opportunity for the exchange of information and a forum for informal discussion among science, law and policy researchers, ENGOs and industry and relevant government departments with the view to further exchanges.

The Workshop Agenda was organized into three substantive/descriptive sessions aimed at providing information on the issue of high seas biodiversity and, specifically, high seas fisheries and bioprospecting and genetic resources of the seabed, and current policy and legal issues and responses. This was followed by a fourth session exploring potential approaches and options at the international level to these issues. The Workshop culminated in a facilitated discussion which considered, *inter alia*, a number of questions on issues raised in the earlier sessions, with a particular emphasis on policy options (a copy of the "questions for discussion" is found in Appendix V).

A copy of the Agenda is found in Appendix I. A list of participants that attended the Workshop is found in Appendix II. Copies of the main background documents for the Workshop are found in Appendix IV. As indicated above, the following Report provides a brief summary of the key points made by the Lead Commentators for each of the four sessions and summarises the resulting discussion on the topics.

SUMMARY OF THE WORKSHOP SESSIONS

Overview & Introduction: "Setting the context"

Following welcoming remarks from the Co-Chair Professor Moira McConnell (Director, Marine & Environmental Law Institute, Dalhousie Law School), and Richard Ballhorn (Director General of the Legal Affairs Bureau of the Department of Foreign Affairs), Professor David VanderZwaag, Co-Chair (Canada Research Chair in Ocean Law & Governance, Dalhousie Law School), provided opening remarks and a substantive overview of the issue for the Workshop under the title "Setting the context".

Governance of the high seas and biodiversity beyond national jurisdiction is a topic that involves significant challenges. Dr. VanderZwaag described some of those challenges as follows:

Tempestuous Sea
There is a major clash of political viewpoints. While some countries take the position that bioprospecting should be guided by UNCLOS, and an open access, first-come-first-serve approach, others believe in our common heritage as a governing construct and focus on notions of equity, especially with regard to developing countries' abilities to benefit. We are also seeing ethical clashes between those with an ecocentric view of the world versus those with more of a utilitarian view (e.g. resource exploitation).

Swirling Currents
There is a swirling array of international discussions, such as those of the World Trade forums, the Convention on Biological Diversity Working Group, the United Nations General Assembly, review of the United Nations Fish Stock Agreement, etc.

Murky Waters/Muddy Waters
There is no clear vision as to whether new institutions should be established and if so what those mechanisms should be. There is also no clear picture of the legal route to bolster oceans beyond national jurisdiction.

Hazy Horizons
The types and categories of high seas uses that should be controlled remains hazy, such as high seas fishing and bioprospecting.

Just Leaving Port
We have spent centuries working out the jurisdictional rights and claims to the uses of the oceans. More recently we have been struggling with the responsibilities, but this voyage has hardly begun. Many people in the management field feel that the principles, such as the precautionary approach, public participation, etc. for governing resources are not clear. What do these mean at national and international levels?

Deluge of Documents
We are experiencing an onslaught of papers, articles, books, etc. all trying to explain various issues, and gaps. We need to come out from under these mounds of paper to putting our ideas into action.

Session I: The Context – Science and Law with a Focus on High Seas Fisheries and Marine Biodiversity

Lead Commentators

- High Seas Fish Stocks and Marine Biodiversity (Professor Boris Worm, Dalhousie University)
- Deep Sea Corals (Professor Martin Willison, Dalhousie University)
- The Legal Regime (Dean Phillip Saunders, Dalhousie Law School)

High Seas Fish Stocks and Marine Biodiversity *(*Professor Boris Worm, Dalhousie University – *Dr. Worm's PowerPoint presentation can be found in Appendix III.)*

The high seas and deep ocean are often considered to be the "last frontier", and a sense of common rights has prevailed, and the use of extraction methods that are considered to be unacceptable inshore and that are technologically advanced is common. This approach to the use of the high seas and deep ocean has led to a startling decline in species abundance, richness, and diversity. Not only has this decline reached 90% in some cases, but the rate of decline has been significant as well, with most species being lost or diminished within the last 20 years. In so doing, the very structure of the high seas and deep ocean have been disrupted to the point where ocean functions may be significantly altered (e.g. ocean production).

The challenges with regard to scientific data, such as a general lack of data, particularly data that is regionally relevant was also noted. Data is also not shared, nor is it necessarily reliable when looking at conservation needs, as much data may be from commercial sources, may not be complete, and may be based upon shifting baselines. It was suggested that a higher degree of observer data, particularly in connection with fisheries, would be greatly valued, as would an international body to manage the accumulation and dissemination of data worldwide that might be set to comparable standards.

It was suggested that for conservation purposes a regional approach to management of the high seas and deep ocean would not be effective as the approaches were seen to be fragmented and the potential for conflict is considered to be high. Given that the use of the high seas and deep ocean is global in nature, a global approach was considered necessary. It was also suggested in connection with high seas species that some attention should be paid to restoring biodiversity rather than simply protecting it, as historical data suggests that we are already experiencing a significant decrease in and loss of biological diversity.

Deep Sea Corals (Professor Martin Willison, Dalhousie University)

Dr. Willison brought an example of part of a deep sea coral and noted the impact of fishing gear on the coral. In his view this illustrated the immediate need to protect deep sea environments. Deep sea corals, which feed by sitting in the ocean's current, exist in areas that are characterised by strong currents, such as seamounts. In such environments the corals may be abundant, but they are also very localised. It is not by coincidence that fish also congregate in such areas as the corals provide habitat and both are indicative of an environment that is conducive to high levels of biodiversity. As such, fishing efforts directed at these areas are common and fishing practices, such as trawling, produce rewarding catches, but also damage, for example, corals. In many cases species in these environments are slow growing, are unique, or may be base species upon which the local ecosystem may depend. This is of

particular concern around seamounts which are especially vulnerable given the high degree of endoism within a relatively small physical area. As such, it was felt that extraordinarily strong conservation measures are needed, and should be developed as a first priority.

The Legal Regime (Dean Phillip Saunders, Dalhousie Law School)

One of the key challenges of managing the high seas and deep ocean is working within the existing legal structure, which has as a primary consideration the rights of sovereign states. That said, there are several instruments which provide the legal framework for these areas. In particular, the 1982 *United Nations Convention on the Law of the Sea (UNCLOS)* includes several provisions upon which states party to the Convention base their use of the high seas and deep ocean. UNCLOS has defined the high seas in *Article 86* as

> *"…all parts of the sea that are not included in the exclusive economic zone, in the territorial sea or in the internal waters of a State, or in the archipelagic waters of an archipelagic State."*

In addition, the Convention provides that all states may invoke the freedoms of the high seas, which by *Article 87* include: navigation; overflight; laying of submarine cables and pipelines; construction of artificial islands and other installations; fishing; and scientific research. The article also states that,

> *"These freedoms shall be exercised by all States with due regard for the interests of other States in their exercise of the freedom of the high seas, and also with due regard for the rights under this Convention with respect to activities in the Area."*

Specifically within the context of living resources, several articles outline the associated responsibilities. In a general sense *Articles 192* and *194* delineate the obligations of states to, "protect and preserve the marine environment," and to "prevent, reduce, and control pollution of the marine environment." *Articles 117 to 119* respectively provide for the, "duty of states to adopt with respect to their nationals measures for the conservation of the living resources of the high seas", for the, "cooperation of states in the conservation and management of living resources," and for the, "conservation of the living resources of the high seas…[so as]...to maintain or restore populations of harvested species at levels which can produce the maximum sustainable yield."

Article 64 refers specifically to the need for states to cooperate in, "ensuring conservation and promoting the objective of optimum utilization [of highly migratory species]," while *Article 65* provides for the prohibiting, limiting and/or regulating of the exploitation of marine mammals, including those in the high seas. Both these articles require states to seek to agree on measures directly, or through other organisations.

In addition, *Article 66 and 67* address anadromous and catadromous stocks respectively, with the responsibility for the management of anadromous stocks lying primarily with the state of origin, but cooperation with other states is also emphasized. Similarly, catadromous species are primarily subject to the jurisdiction of the state within whose EEZ they spend the greater part of their life cycle.

With regard to navigation, responsibility is generally laid upon flag states to administer and control vessels flying its flag, including effectively exercising jurisdiction and control; maintaining a register; ensuring safety, proper surveys and training; adopting laws for prevention, reduction and control of marine pollution; and to ensure compliance with international rules and to provide for enforcement. Without an international legal structure responsibility falls back to flag states, which is problematic flag state obligation is difficult to enforce, particularly in the case of flag of convenience arrangements. There is a difference between an obligation to behave in a certain way and the fact that another state does not have the ability to enforce those obligations. The degree to which the Convention relies upon flag state responsibility and the duty of states to cooperate is problematic without a means to enforce them, or even define them (i.e. what constitutes a failure to cooperate?).

Various other tools exist including bilateral and multilateral agreements, regional seas agreements, area based management areas, restricted activities of nationals, and various conventions. Although these legal tools include provisions that are notable, they are nonetheless broad and rely on the good faith of states to cooperate. These include:

- the United Nations Fish Agreement (UNFA) of 1995, which imposes new obligations on parties on the high seas, including management principles, observance of Regional Fisheries Management Organisation (RFMO) measures, flag state responsibility, and some high seas enforcement powers. UNFA also demands cooperation, and restricts access to various species;
- the FAO Compliance Agreement of 1993, which outlines obligations with regard to cooperation and flag state responsibilities (including the obligation not to authorize high seas fishing unless it can be effectively controlled);
- the FAO Code of Conduct for Responsible Fishing of 1995, which is a voluntary code that establishes principles and standards for the conservation, management and development of fisheries;
- various RFMO agreements, which now have more significance with UNFA;
- the International Convention for the Prevention of Pollution of Ships (MARPOL) of 1973;
- the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES);
- the Convention on Biological Diversity (CBD);
- other various instruments that address ballast water, and the dumping of wastes at sea;
- port state control;
- the establishment of particularly sensitive sea areas and high seas marine protected areas; and
- others.

Although progress has been made, high seas freedoms are the default position under international law as it pertains to activities (other than seabed mining for certain minerals in the "Area") and flag state enforcement is a real problem. It was suggested that the greatest progress has been sectoral in nature (for example, UNFA), or where conflicts exist that force states to negotiate (e.g. with regard to national jurisdiction), and that new institutional arrangements dealing with the concept of "biodiversity" would be too amorphous. It was felt that definitions are required of, for example, what biodiversity is, and what exactly would be managed before progress can be made. More needs to be learned and defined with respect to issues such as bioprospecting – e.g. is there actually much occurring and how harmful is it? - before firm and binding legal arrangements can be negotiated and still be effective in the long term. The way forward was seen to be probable though sectoral agreements and arrangements, although it was thought that there is room for broadening the scope of organisations and

agreements (e.g. NEAFC and CCAMLR). Focussing on the regional level could also produce a higher degree of common interest. It was also felt that there should be focus on implementing the agreements that already exist before delving into renegotiation of the current legal regime, or developing new agreements.

Session II: Canadian Government Perspectives

Lead Commentators

- The UN Working Group: How We Got There and What We Can Expect (Mr. Louis Simard, Director, Oceans and Environmental Law Division, Department of Foreign Affairs)
- The UN Working Group and the International Oceans Governance Agenda (Mrs. Lori Ridgeway, Director General, International Coordination and Policy Analysis, Fisheries and Oceans Canada)

The UN Working Group: How We Got There and What We Can Expect (Mr. Louis Simard, Director, Oceans and Environmental Law Division, Department of Foreign Affairs)

At the 59th General Assembly in 2004 an Ad Hoc Open-ended Informal Working Group was established to, "study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction." This group is open to participation by all UN members, and NGOs and international organisations are welcomed as observers, although there could be closed sessions that would exclude observers

The issue of biological diversity has been emerging in various *fora*. It has been of particular interest to the International Seabed Authority (ISA), which has jurisdiction to protect the environment from exploration and exploitation activities of minerals (e.g. polymetallic sulfides and ferromanganese-rich crusts) located on vents or seamounts. These are biodiversity rich areas where the relationship between the minerals and living resources is strong. It has been suggested at ISA meetings that it could be a logical step for it to consider managing the genetic resources of these areas, as a common heritage of mankind, in addition to its role with regard to mineral resources.

This issue of biological diversity has also been raised within UNCLOS. At the United Nations Open-ended Informal Consultative Process on Ocean Affairs (UNICPOLOS) and the United Nations General Assembly (UNGA) more specific aspects were pointed out, such as the protection of vulnerable seabed areas, bottom trawling, and MPAs. These issues were also being discussed at the CBD, in RFMOs, and at the International Maritime Organisation (IMO).

The UN Working Group was developed to bring these discussions together in one forum and will address two main sets of questions: (1) the emerging debate over the exploration for and exploitation of genetic resources (i.e. with regard to bioprospecting and commercial uses), and (2) the protection of marine biodiversity, particularly that found in vulnerable areas of the seabed and areas beyond national jurisdiction (i.e. how can all activities be governed in a way that achieves the greatest long term sustainable use benefits, and integrated oceans management at a global or regional level?). It was suggested that the first issue would initially be the prime focus of the WG meeting as it is more tangible for many. The second issue was thought to be a considerable challenge, with none of the same economic and political resonance as the first.

The UN Working Group and the International Oceans Governance Agenda (Mrs. Lori Ridgeway, Director General, International Coordination and Policy Analysis, Fisheries and Oceans Canada)

Views of the International Oceans Governance Agenda:

- *The oceans agenda is fragmented.* There are multiple, converging, overlapping, duplicating fora, institutions, and tools. The views can be partial when fragmented, and this is inefficient.

- *Instead of being cooperative, the agenda is competitive and builds silos.* Many countries play differently in different fora, and conservation approaches are sometimes in competition with sectoral approaches.

The agenda is obviously interdisciplinary in nature, but we need to learn how to bring them together.

- *It is difficult to find an opportunity to bring these issues together.* We need to learn how to cooperate, and how to build integrated management tool kits.

- *There are major knowledge, and policy and analysis gaps*, yet the international community has adopted targets that seem to assume we can go directly to implementation. Commitments are being made to deliver mature systems (e.g. MPA networks), but when the basic framework and understanding of how these systems work is lacking, credibility is lost.

What is needed:

1. Actual cooperation, trust, and joining up, and mechanisms to do this;
2. Intragovernmental and intergovernmental coherence;
3. Integrated approaches;
4. Shared understanding;
5. Regional approaches (global approaches can be unrealistic);
6. A better and broader understanding of what we do and do not know, and how to close those gaps;
7. Options to move forward, including emulating or learning from best practices (e.g. new RFMO in the South Pacific);
8. Capacity building (especially, but not exclusively for developing states);
9. Practical, pragmatic, forward looking, enforceable, implementable practices that balance sustainable use with conservation, and that allow states to balance their interests and needs; and
10. Clarity on where scarce resources should be spent.

The General Assembly has set some parameters for the discussion, such as:

- To survey the past and present activities of the United Nations and other relevant international organisations;
- To examine the range of aspects of these issues;
- To identify key gaps in the information and research; and
- To indicate possible options and approaches for moving forward.

The Working Group will be looking for practical answers so that realistic achievements can be made. One of the main issues that the Group is identifying is that of cross cutting foundations in science and law. They are aware of where there are gaps, but there is a need to get an

integrated picture, to find a way to make the science useful to decision-makers, and to find a way to balance independent science with science that is needed for policy decisions. With respect to the legal framework, debate is growing as to whether there is a need to create a new agreement under UNCLOS, but resources may be better spent elsewhere

Another issue is that of governance. It is clear that biodiversity and ecosystem issues are gluing the system together, and integrated management is the practical glue to address issues of multidimensional use and the potential for conflict. This means that there is a need to develop shared objectives, and to develop strong sectoral regulation that is clearly linked to ecosystem based approaches. Integrated management is not possible without strong and enforced sectoral regulation. There is also a need for a mechanism for cooperation, for performance monitoring and accountability, and for compatibility with national approaches.

A third issue is that of the role of economic instruments. Incentives are necessary for regional and international cooperation as well as for self-regulation. Similarly, disincentives have a significant role to play. The value of economic instruments is a practicality, and therefore, the use of market measures is critical in the short term.

All these debates are necessary for closing the implementation gap.

Session III: Genetic Resources of the Seabed

Lead Commentators

- The Scientific Perspective (Professor Kim Juniper, University du Quebec a Montreal)
- The Interest of the Biotechnology Sector (Dr. Adam Burja, Principal Research Scientist, Metabolic Eng. & Fermentation Group Leader, Ocean Nutrition Canada)
- Government Perspective (Mr. Andrew Hurst, Policy Advisor, Biodiversity Convention Office, Environment Canada)

The Scientific Perspective (Professor Kim Juniper, University du Quebec a Montreal)

Undiscovered Biodiversity
There is a huge potential for discovering new species on the seabed, particularly around hot spots that are associated with various geological features, such as hydrothermal vents, manganese nodules, seamounts, and cobalt-rich manganese crusts. In these areas there is a high degree of species richness and/or novelty.

Scientific Interest
First of all, there is an aim to improve basic knowledge and understanding of how organisms evolve and adapt to their environment, and the history of life on earth. Second, there is an interest in conservation research, such as how environmental controls affect biodiversity, cataloguing species prior to assessing the impacts of various activities (e.g. mining), investigating whether climate change is, for example, affecting the productivity of the ocean and the amount of food available to organisms living on the seafloor, and looking at ecosystem stability and resiliency and its relationship to biodiversity. Third, there is an interest in bioprospecting and biotechnology. Enzymes, biopolymers, secondary metabolites may have medical and industrial applications. It was pointed out that bioprospecting is not the same as mining or large scale biomass removal as there are many ways to collect material, such as bioharvesting (e.g. seaweed). Currently, the primary interest is in micro-organisms, and for this there would be no bulk extraction as in most cases small samples are obtained and taken to a laboratory for further study. However, there is an interest to piggy back on deep sea mining operations, which remove large quantities of material off the seabed floor, as it would make economic sense to use some of that material for testing.

Bioprospecting and Marine Scientific Research Impacts on Biodiversity
In some cases bioprospecting involves bulk harvesting and extraction of compounds, while in other cases small samples are used to create a genetic library. There is concern about the effects of research on very small areas (e.g. seamounts). This is partly an issue of multiple use and degree of traffic in the area as some scientific interests take large samples, while others simply observe. Furthermore, sampling of species can affect species abundance and patterns of biological succession (i.e. if a key species is removed, the natural course of events for that ecosystem may be altered). Due to this concern work is being done on developing a code of conduct for scientific research in sensitive areas such as these. Many scientists go to the deep sea to conduct research partly because there are no regulations there, but controls may be key to providing continued opportunities for research (e.g. on the role of a target species in an ecosystem function within an MPA).

The Interest of the Biotechnology Sector (Dr. Adam Burja, Principal Research Scientist, Metabolic Eng. & Fermentation Group Leader, Ocean Nutrition Canada)

Many organisms that live in extreme environments such as the deep sea develop ways to adapt to extreme conditions. They also need to develop ways to incorporate antioxidant compounds. These compounds have been found to be useful in the pharmaceutical sector for producing, for example, anti-cancer, anti-HIV, antibacterial, immunosuppressive, etc. drugs. A common practice is to "mine" the organism itself by letting the organism produce the compound, or by taking the genes and putting them into another organism.

There are many problems with the current state of law with regard to exploitation as there is a lack of transparency in how a country or body deals with people who are bioprospecting in seabed areas, or in international waters. There is also a lack of understanding of what bioprospecting is. There is no policy framework, so it is often simply not allowed.

It is not likely that bioprospecting would develop into a large scale activity as most of what is being found in the deep sea would simply be around discovering a genetic code to be used later. In addition, each organism will likely only contain a tiny amount of the material (e.g. in one case 670 tons of material was harvested to produce only five grams of the compound for phase two testing). It is therefore not practical, or economical to harvest such organisms in the long run. In many cases these compounds are derived from microbes, so simply by identifying the microbe one can reproduce the compound. Furthermore, the trend would move away from harvesting for the sake of predictability and the ability to lock down the process of production in a laboratory environment as there is a high degree of fluctuation in the deep sea-derived samples.

Government Perspective (Mr. Andrew Hurst, Policy Advisor, Biodiversity Convention Office, Environment Canada)

Bioprospecting became an issue because people began to do it, and then those countries without the capacity to do the research and to reap the benefits became concerned about the consequences. The CBD has three objectives: (1) the conservation of biological diversity, (2) the sustainable use of its components, and (3) equitable sharing of the benefits arising out of the utilization of genetic resources. Developing countries tend to focus on second and third objectives, and the issue of equity has been raised in several *fora*. There are two general groupings of those countries with an interest in bioprospecting: developed countries that have the capacity to conduct research and reap the benefits, and developing countries, of which there are two main streams – those that have biotechnology sectors, and those that do not have biotechnology sectors nor the capacity to conduct research, but who still are hold concerns with regard to equity.

When looking at other countries it is important to be aware of their context. When looking at developed countries it is important to consider two things: that a lot of countries are making heavy investments (that are largely publicly funded) in the biotechnology sector, and that there is a tradition of public science, but on the other hand that these public investments have the potential to be turned over eventually to commercial goods and knowledge, which means that there is pressure to try to realize some of the potential profits.

When looking at developing countries there is another dynamic. With the CBD came rapid closure of the terrestrial genetic commons and these environments are becoming much more

restricted. There has been a shift of interest to the marine side due both to the regulatory framework and to the fact that the availability of samples is significant.

From a Canadian point of view, we are interested in conserving biodiversity as part of the global commons, as well as scientific and commercial interests. Although more needs to be learned on the extent of those interests, there is intent to develop an integrated policy framework that involves both policies and incentives to encourage biotechnology, but to maintain a regulatory framework to ensure it is done responsibly. When looking at the governance of these resources several principles have been discussed that should inform decisions, such as: maintaining an environmental focus; ensuring equitable use; promoting economic benefits that support an environmental focus; transparency; and coherence between conservation and commercial uses such that there can be rational and beneficial use for all concerned.

Session IV: Integrated Oceans Governance and Protection of Marine Biodiversity – Issues and Directions

Lead Commentators

- Options for Improving International Protection of Marine Biodiversity Beyond National Jurisdiction (Ms. Lee Kimball, IUCN, Washington)
- The Fishing Industry's Interest (Mr. Pat McGuinness, President, Fisheries Council of Canada)
- An ENGO View (Mr. Joshua Laughren, Director Marine Conservation, WWF-Canada)
- The Government Perspective (Ms. Renée Sauvé, Senior Policy Advisor, International Coordination and Policy Analysis, Fisheries and Oceans Canada)

Options for Improving International Protection of Marine Biodiversity Beyond National Jurisdiction (Ms. Lee Kimball, IUCN, Washington)

Seven key issues were identified:

1. *High seas fisheries and marine biodiversity*
   There is a need to improve RFMOs, and work can be done at the regional level, but it will also be necessary to have a global body that can ensure that RFMOs are following the principles of UNCLOS.

2. *Seabed genetic resources (and MSR)*
   There is a need to provide for sustainable and equitable use of seabed genetic resources beyond national jurisdiction. Sustainable use could be promoted through application of environmental impact assessment provisions under UNCLOS and the CBD and as reflected in the Antarctic Treaty Resolution 7 (2005). Benefit-sharing to ensure equitable use could encompass a range of non-monetary benefits such as knowledge and beneficial products for humanity as well as the sharing of any profits from biotechnology products. Such benefits could contribute to marine conservation and/or collaborative research beyond national jurisdiction. Together with an acceptable solution on benefit-sharing, a more transparent means for advance notification and reporting of major research expeditions (no.5 below) could alleviate demands for stronger controls over MSR and access.

3. *High seas enforcement*
   It is important to recognise that illegal activity at sea has a lot of commonality (e.g. between fishing, dumping, etc.) and that systems such as vessel tracking, port state controls, flag state performance requirements, and the application of VMS can all help, but there needs to be coordinated enforcement in areas of these various regimes.

4. *Clarification of the relationship between high seas activities, in particular fishing, and a coastal state's sovereign rights over sedentary species of the continental shelf*
   We should set in motion steps to clarify how coastal states may proceed to conserve/protect sedentary species from high seas fishing activities, including the opportunity to establish specially protected/managed areas to do so either, for example, jointly with RFMO and/or in consultation with high seas fishing States, or by using provisional measures as necessary until a final delimitation of outer limits can be established.

5. *International collaboration in MSR in areas beyond national jurisdiction*
   The requirements under UNCLOS for sharing and reporting could be further developed (e.g. establishment of a website). There has also been talk of creating a fund to facilitate participation from scientists from developing countries, which should be further developed. Support was also expressed for a policy-relevant international high seas/deepsea biodiversity assessment, based on the best *available* scientific information through a process recognized as credible and legitimate by the international community as a means to draw attention to existing research findings in a policy context.

6. *Specially protected/managed areas*
   MPAs are a way to promote coordinated application of different regimes, provide for different levels of protection and for coordinated enforcement and application of different sectoral agreements, and to promote attention to a particular area. Next steps could include developing MPA guidelines, advancing scientific research so that priorities can be identified, developing ecological criteria, and developing potential for collaboration between users (e.g. cable and conservation).

7. *Linkages and integrated approaches.*
   We can begin by agreeing on certain principles that apply for the conservation and sustainable use of marine biodiversity beyond national jurisdiction, as a basis for further deliberations; and to agree to further elaborate certain principles, including: the duty to cooperate; transparency & accountability (notification and reporting); and equitable use of deep seabed genetic resources beyond national jurisdiction. Further steps toward integration could include: agreeing to incorporate and develop principles in an UNCLOS implementing agreement; agreeing that an implementing agreement will provide for MPAs/networks and will address institutional concerns; and agreeing to provide a means to review the effectiveness of steps taken to implement these principles, including coordination among relevant bodies. It would be useful to bear in mind that steps such as principles elaboration, progress to identify MPAs/networks at scientific level, and coordinated review mechanism do not require an implementing agreement as the first step.

The Fishing Industry's Interest (Mr. Pat McGuinness, President, Fisheries Council of Canada)

International fisheries law has had ten years of developing new instruments, and now it is time to focus on implementation. As such, it is essential that RFMOs modernize their mandates to include ecosystem and biodiversity issues, and it was suggested that action should be taken in areas that are unique and where highly sensitive, or ecologically or biologically significant marine ecosystems are known to exist, and where there is scientific evidence that fishing practices are having a long-term adverse effect on the ecosystem (e.g. by ensuring fishing practices conform to specific conservation requirements, by implementing seasonal or area closures, by establishing MPAs where necessary, and by monitoring for compliance and management effectiveness).

With regard to MPAs specifically, there is some concern that they are considered by some to be a panacea for fisheries management problems, and are presented as an oversimplified approach that is in danger of raising false expectations in terms of addressing conservation concerns while at the same time diverting fisheries management from other conservation tools that may have more effective remedial effects. In conjunction with other management tools, and

when implemented on a case by case basis and with careful planning and evaluation MPAs can help to achieve broad fishery and biodiversity objectives. Although the fishing industry encourages RFMOs to identify and regulate access to areas that are highly sensitive, or ecologically or biologically significant (pending the development of any additional measures), it cautions that, without proper planning and scientific knowledge, the use of MPAs as a management tool can even be detrimental (e.g. spatial displacement of effort due to MPAs resulting in stock depletion).

An ENGO View (Mr. Joshua Laughren, Director Marine Conservation, WWF-Canada)

Everyone agrees that there is a problem – the trend is clear even if the details are not. There has been a frustration with many fisheries issues in a lack of hope for quick action, and although some reform have been seen (e.g. within NAFO), such changes would likely not have happened without strong outside pressures to do so. From an ENGO perspective several changes were considered to be desirable:

- that RFMOs should work under the goal of global coverage and a global mandate, particularly when looking at fishing on the high seas, or of highly migratory species, that they should be accountable and subject to independent assessment through a formalized process, and that they need to be charged with delivery of their commitments;
- that ecological footprints should be frozen by confining high seas fishing to those areas where fishing already takes place (i.e. implementing a moratorium on *growth*), and by creating incentives and conditions for growth so that it may be sustainable and more realistic for the industry to comply;
- that we need to be cognizant of overcapacity and shifting capacity via the use of subsidies or oversized fleets (e.g. Russia and Asia);
- that better tools for controlling IUU fishing need to be developed, such as improved port state controls and the use of incentives;
- that sharing of information needs to be greatly improved;
- that economic and consumer pressures can be further developed and coordinated to have a greater impact;
- that although the establishment of MPAs can be problematic, there are areas that are clear examples where the use of MPAs could be beneficial (e.g. seamounts);
- that creating a legal framework is not useful if those laws are not implemented; and
- that long term reform should be pursued, but not at the expense of short term action.

The Government Perspective (Ms. Renée Sauvé, Senior Policy Advisor, International Coordination and Policy Analysis, Fisheries and Oceans Canada)

Biodiversity by definition is very broad and inclusive, therefore a management approach must be equally broad and inclusive. Integrated management can be expressed on a variety of levels and through various measures (e.g. area or place based, or activity based). There has been some discussion as to how integrated oceans governance can be implemented by, for example, building on existing structures and agreements, or replacing MERMOs or ROMOs. However one may view the issue, it seems clear that there is an overarching need for a regional body that could oversee an integrated approach. In addition, there is an opportunity to make the existing arrangements more binding by, for example, adjusting mandates, or developing more soft law options, such as MOUs, codes of conduct, guidelines, etc. In any case, it is always necessary to act in both the long and short terms.

Session V: General Discussion: Issues, Policy Options, and Main Questions
This session was facilitated by Mr. Louis Simard and Professor David VanderZwaag.
The following also includes a summary of key points and discussions following the Lead Commentators' observations in each of the Sessions. A set of questions used to guide this session can be found in Appendix V.

General Themes

Several topics emerged repeatedly throughout the workshop. These included the following:

Legal Regime
There was significant discussion around the question of whether current legal instruments should be adjusted or whether new ones should be created. Some saw the need for the development of global bodies that could coordinate, enforce, assess and monitor the implementation of overarching principles and management tools such as those outlined in UNCLOS. All saw the value in such bodies, but some considered this goal to be unrealistic (at least in the short tem), and believed a more practical approach would be to operate through regional bodies, such as RFMOs. It was generally agreed that the mandates of RFMOs ought to be broadened so as to enable them to adequately address issues such as, for example, bioprospecting. It was also acknowledged that RFMOs are not independent organisations, but rather that they are groups represented by countries with very real interests. Similarly, the issue of how to practically apply the principles of integrated management was raised. It was suggested that integrated management would only work with strong sectoral regulations since it is those sectors that are tasked with actual implementation of the principle.

There was also some discussion with regard to the restatement of principles, and/or development of new ones (e.g. under UNCLOS). It was agreed that a restatement of current principles (such as the need for cooperation) could be valuable; however, there was some hesitation to actually change existing principles, or to develop new ones at this point in time. It was also suggested that limited resources could be better used focussing on more practical goals for the short term.

Data and Information
It was generally agreed that there is a lack of scientific data, and particularly of data that is up-to-date, reliable, and comparable. It was acknowledge that in many cases this is due to a lack of capacity (e.g. developing countries), but that nonetheless useful scientific data is the basis upon which many policies and regulations are developed. The suggestion of creating a global body of scientific experts that could coordinate the management of data was also made. The importance of being able to share this information was also stressed.

MPAs vs. Other Management Tools
MPAs were generally acknowledged to be a valuable management tool, however, several participants cautioned against viewing them as a panacea in exclusion of other management tools. Many suggested that in order to maintain the value and credibility of MPAs, they need to be considered on a case by case basis, and in conjunction with other management tools. The point was also raised that in a terrestrial context we regulate primarily with regard to activities, not location, and that this would be a logical method for developing MPAs as well. Similarly, it was noted that those activities that are harmful should be distinguished from those that are not (which in the case of bioprospecting, for example, could be the majority). That said, some

pointed out that there are particularly vulnerable areas that could easily be designated as protected, such as seamounts.

The use of moratoriums as a management tool was also discussed. Some saw the need for moratoriums to be pressing, while others considered them to be useful in some cases, but also exceptionally difficult to enforce, and at times ineffective.

Bioprospecting

The main challenge in the issue of bioprospecting seems to be the various "unknowns". To start with, there is a lack of clear understanding of what bioprospecting entails, and how it differs from marine scientific research. It appears that bioprospecting in and of itself would often have little impact on the marine environment given that much of the process is based upon the gathering of small samples, which are then tested and reproduced in laboratory settings. It was noted that the danger of bioprospecting developing into a large-scale harvesting entity would be unlikely because of this, and that in addition bioprospectors are able to "piggy-back" on, for example, fishing vessels.

Another issue with regard to bioprospecting was that of benefits. Indeed, it appears that much of the debate surrounding bioprospecting arose due to a concern, particularly from developing countries, over the equitable sharing of benefits, which comes out of concern for the impact on high seas ecosystems and resources versus the net benefits that could be coming back to the resource owners. A lack of capacity to conduct research and therefore reap potential benefits has led to much discussion on the sharing of benefits, and the possible allocation of patents. It was also noted during the workshop that the definition of "benefits" should include non-monetary benefits such as participation of scientists in research projects, sharing of research results, transfer of technology and knowledge, arrangements for developing countries to make cheaper drugs, etc. in addition to royalties.

Incentives and Outside Pressures

The value of developing incentives was considered to be a practical and necessary means to reaching integrated management goals. Particular attention was given to economic and market incentives as these were deemed to be the most effective in a setting where economic benefits are a driving force (e.g. in high seas fishing). Emphasis was also placed on the need for outside pressures (e.g. from ENGOs) to continue to play a significant role in the moulding of policy and legal frameworks as RFMOs and individual states must act in their own best interest before they can consider the common global good.

Conservation vs. Fishing Issues

At various points during the discussion the question was raised as to whether conservation issues are in conflict with resource use issues. Several participants noted that although the two may seem to be working toward contradictory goals, they are in fact aiming for the same thing – for example, conservation and fishing interests both want renewable resources. Instead the problem was suggested to be one of overcapacity.

Discussion in Response to Workshop Questions Distributed

Genetic Resource Questions

- *Is there any Canadian activity with regard to genetic resources in the high seas? What is the involvement of the biotech industry?*

  It was indicated that little is known about the actual level of Canadian activity with regard to genetic resources in the high seas, although there is definite interest, both in terms of the scientific and commercial potential and the Canadian government was noted as having contributed significant funds toward some of this technology.

- *Does "bioprospecting" and access to genetic resources in the Area need to be regulated? How harmful is MSR/bioprospecting to vulnerable marine areas?*

  It was suggested that some of the activities of bioprospecting should be regulated, but that blanket regulation is not an ideal approach as it inhibits the discovery of potentially valuable resources (e.g. such as enzymes and microbes that might be developed for use as antiviral drugs), or may push bioprospectors to other unregulated areas. It was mentioned that the MSR regime in UNCLOS already provides a regulatory framework – the question remains whether this is a sufficient regime, and in particular whether it is enough to address the "benefit-sharing" aspect of the issue. It was explained that MSR and bioprospecting in and of themselves are not necessarily harmful to vulnerable marine areas (such as seamounts), as in most cases only small samples would be taken for later development in a laboratory setting. It was also acknowledged, however, that a high degree of interest from numerous parties can lead to the overloading of an area. Similarly, it was noted that in some cases bioprospectors or marine scientists might "piggy back" on fishing vessels, which on the one hand means the cooperation between two stakeholders, but on the other hand relies on an activity that may be considered harmful to a vulnerable marine area.

- *Is it practical to contemplate different regimes for MSR with no commercial application (i.e. pure research) and MSR that does have commercial application (i.e. applied research)?*

  This question was not addressed in detail, however, there was some commentary regarding the development of a code of conduct for marine scientific research.

- *Would the International Seabed Authority be an appropriate mechanism for regulating "bioprospecting"? If not, what alternative governance arrangements might be considered?*

  Some participants saw the ISA as a logical body to regulate bioprospecting given that it is already involved in some aspect of protecting the environment in question. However, many also suggested that this responsibility does not fall within the ISA's mandate, and that the ISA is structured to reflect mining interests.

Broader Marine Biodiversity Questions

- *Can biodiversity be protected through better implementation of existing regimes, or do we need new rules, arrangements or institutions that deal specifically with protection of biodiversity from the various activities? Are there gaps in the current regime?*

There was no consensus on this issue. There was some discussion of focusing on the implementation of the existing legal and regulatory frameworks before delving further into adaptation of those frameworks. The suggestion of developing a global body of some kind was touched upon several times, however, many participants indicated that in many cases it would be more practical to work through regional bodies (e.g. RFMOs) which more directly represent individual states' interests and capabilities. It was generally agreed that there are gaps in the protection of marine biodiversity beyond national jurisdiction, but no agreement was found on whether these gaps were more related to the implementation of the current regime, or whether they were gaps in the governance regime itself that needed to be filled through the development of new rules.

- *If we do need new rules, arrangements, institutions, what options are there to achieve integrated oceans governance and better protection of biodiversity?*

  - *Is there a need for a mechanism or mechanisms to integrate scientific advice and management in the various sectors?*

    The need for a global body to coordinate scientific advice and management in the various sectors was raised by several participants. The possibility and/or process of developing such a body, however, was not discussed in detail apart from the suggestion that the practical reality of establishing such a body would not be attainable in the near future, although there was some mention of establishing a fund of some sort to facilitate this.

    It was suggested that the Canadian model of integrated oceans management could serve as the basis for discussions of improving oceans governance in areas beyond national jurisdiction. This would involve ensuring that sectors of activities are well regulated and disciplined. In turn, these sectors would interact and develop together measures that each of them would implement in order to pursue biodiversity protection objectives for a specific ocean area.

  - *Should a "comprehensive" approach to strengthening governance arrangements for the high seas / deep seabed be considered, addressing the various gaps and weaknesses under a single umbrella (such as a Law of the Sea Implementation Agreement on the High Seas) or a more "sectoral" approach where, for example, high seas fisheries might be addressed under the UN Fish Stocks Agreement and "bioprospecting" under the Convention on Biological Diversity?*

    Although the reiteration of the principles of existing governance arrangements was considered to be desirable, and the usefulness of umbrella arrangements (such as UNCLOS) was acknowledged, there was a strong emphasis from some participants on the need to focus on a sectoral approach. The discussion did not, however, specifically cover what such an arrangement would look like.

  - *If a "comprehensive" approach is followed, what would be the best strategy for reaching a negotiated text, for example, amendment of the UN Law of the Sea Convention or an Implementation Agreement?*

    Most participants were wary of renegotiating existing text, or negotiating new text under UNCLOS, although it was generally agreed that a restatement of the

principles would be valuable. In other cases it was thought by some that the best strategy to developing a comprehensive approach would be through regional bodies, such as RFMOs.

- *Are there issues that might be addressed through UN Resolutions or other non-binding approaches*?

  Issues that were noted as needing more attention, although not specifically within the context of UN Resolutions, were those of state cooperation, port state controls and responsibilities, and flag state responsibilities.

- *How can MPAs be an effective tool? What is the role that the existing international bodies or treaty bodies could play with respect to MPAs?*

  The use of MPAs was generally thought to be an effective tool when applied in consideration of or in conjunction with other management tools, and when subjected to a rigorous process (e.g. meeting established criteria). This was regarded as important as well to ensure the credibility of MPAs as a management tool could be maintained. It was noted by several participants, however, that numerous examples exist of areas that could easily and readily be designated as MPAs (e.g. particularly vulnerable seamounts). Some participants suggested that MPAs would work well through existing international bodies, such as RFMOs, with the example of CCAMLR being raised. Of course, one of the primary challenges to managing an MPA for the high seas or deep sea is was identified as the capability for enforcement.

- *Do regional approaches to managing resources/areas beyond national jurisdiction hold promise and how might regional approaches be enhanced?*

  It was generally agreed that there has been some success in managing resources/areas beyond national jurisdiction (e.g. CCAMLR) however, it was also acknowledged that the activities of these bodies are based on the interests of their member states, and therefore there exists a real potential for conflict. It was suggested as well that a sectoral approach to management by individual states might then have the potential to lead to commonality at a larger scale. Similarly, the role of outside pressure, for example from ENGOs and through market based incentives, was considered to be essential to making regional approaches work.

- *What are the research issues and priorities surrounding high seas/deep seabed biodiversity?*

  It was noted that there is a need for a regulatory framework of some kind that is not blanketing in nature, but rather that responds to real concerns for protecting BBNJ (e.g. to regulate those activities that are determined to be harmful, rather than all activities). In particular, a priority issue was that of multiple use of and high degree of traffic to vulnerable areas. There was also some concern expressed with regard to interference with the natural progression of the ecosystem (i.e. removing key species could result in an alteration to the natural development of an ecosystem).

- *Are there other uses of the oceans that need to be regulated or better regulated?*

  This was not discussed in detail. MSR on the seabed in general was an issue of concern, with reference to possible conflict between multiple users, however, was

mentioned in addition to other commonly identified issues, such as IUU fishing on the high seas, port state responsibilities, flag state responsibilities, and the duty to cooperate as outlined in UNCLOS. It was generally thought that although these issues are touched upon in various agreements and frameworks, there would be great advantage to outlining more specifically what those responsibilities and duties incorporate.

APPENDIX I: WORKSHOP AGENDA

Marine Biodiversity Workshop
Dalhousie Law School
Dalhousie University
Halifax, NS
January 17, 2006

Location: Dalhousie Law School
Weldon Law Building
6061 University Avenue
Room 304

Phone Contact: Marine & Environmental Law Institute, 902 494 1998

08:30-09:15 Welcome, Introductions and Brief Opening Remarks

- Co-Chair, Dr. Moira McConnell (Director, Marine & Environmental Law Institute)
- Mr. Richard Ballhorn (Directeur général/Director General, Direction générale des Affaires juridiques /Legal Affairs Bureau, Ministère des Affaires étrangères /Department of Foreign Affairs)
- Co-Chair, Dr. David VanderZwaag, (Canada Research Chair in Ocean Law & Governance, Dalhousie Law School)

09:15-10:30 Session I – The Context: Science and Law with a Focus on High Seas Fisheries and Marine Biodiversity

Lead Commentators
- Professor Boris Worm, Dalhousie University – High Seas Fish Stocks and Marine Biodiversity
- Professor Martin Willison, Dalhousie University – Deep Sea Corals
- Dean Phillip Saunders, Dalhousie Law School – The Legal Regime

Discussion

10:30-11:00 Break

11:00-11:30 Session II – Government Perspectives

Lead Commentators
- Mr. Louis Simard, Directeur/Director, Direction du droit des oceans et de l'environnement/Oceans and Environmental Law Division, Ministère des Affaires étrangères, Department of Foreign Affairs – The UN Working Group: How We Got There and What We Can Expect
- Mrs. Lori Ridgeway, Director General, International Coordination and Policy Analysis, Fisheries and Oceans Canada – The UN Working Group and the International Oceans Governance Agenda

11:30-12:00 General Discussion

12:00-13:00 Lunch Break

13:00-14:00 Session III – Genetic Resources of the Seabed

Lead Commentators

- Professor Kim Juniper, University du Quebec a Montreal – The Scientific Perspective
- Dr. Adam Burja, Principal Research Scientist, Metabolic Eng. & Fermentation Group Leader, Ocean Nutrition Canada – The Interest of the Biotechnology Sector
- Mr. Andrew Hurst, Policy Advisor, Biodiversity Convention Office, Environment Canada – Government Perspective

Discussion

14:00-15:00 Session IV – Integrated Oceans Governance and Protection of Marine Biodiversity – Issues and Directions

Lead Commentators

- Ms. Lee Kimball, IUCN – Options for Improving International Protection of Marine Biodiversity Beyond National Jurisdiction
- Mr. Pat McGuinness, President, Fisheries Council of Canada – The Fishing Industry's Interest
- Mr. Joshua Laughren, Director Marine Conservation, WWF-Canada – An ENGO View
- Ms. Renée Sauvé, Senior Policy Advisor, International Coordination and Policy Analysis, Fisheries and Oceans Canada – The Government Perspective

15:00-15:30 Discussion: Questions, Issues & Policy Options

- Mr. Louis Simard and Professor David VanderZwaag

15:30-15:45 Break

15:45-16:45 Discussion: Questions, Issues & Policy Options *(Continued)*

- Mr. Louis Simard and Professor David VanderZwaag

16:45-17:00 Conclusions, Comments & Next Steps

- Professor Moira McConnell & Mr. Dick Ballhorn

APPENDIX II: LIST OF WORKSHOP PARTICIPANTS

Co-Chairs:

Moira	McConnell	Director, Marine & Environmental Law Institute, Dalhousie Law School
David	VanderZwaag	Canada Research Chair in Ocean Law & Governance

Rapporteur:

Megan	Sikaneta	Coordinator, Ocean Management Research Network

Participants:

Richard	Ballhorn	Deputy Legal Adviser and Director General, Foreign Affairs Canada
Rose Marie	Braden	Counsel, Legal Services, Fisheries and Oceans Canada
Adam	Burja	Principal Research Scientist, Metabolic Engineering & Fermentation Group Leader, Ocean Nutrition Canada
Mark	Butler	Marine Issues Committee Coordinator & EAC Internal Director
Tony	Charles	Professor Saint Mary's University, Finance & Management Science
Meinhard	Doelle	Associate Director, Marine & Environmental Law Institute, Dalhousie Law School
Pierre	Dubé	Ministère du l'Agricultures, des Pêcheries et de l'Alimentations du Québec
Paul	Glavine	Resource Policy and Development Officer, Department of Fisheries and Aquaculture
Vesna	Guzina	Legal Officer, Foreign Affairs Canada
Andrew	Hurst	Policy Advisor, Biodiversity Convention Office, Environment Canada
Kim	Juniper	Professeur, Département des sciences biologiques Faculté des sciences
Lee A.	Kimball	Advisor on Ocean Governance and International Institutions, IUCN
Daniel	Lane	Chair, Ocean Management Research Network Board
Joshua	Laughren	Director, Marine Conservation WWF-Canada
Nathalie	Lavoie	International Fisheries Officer, Atlantic Affairs Division, Fisheries and Oceans Canada
Robert	McDougall	Legal Officer, Foreign Affairs Canada
Patrick	McGuinness	President, Fisheries Council of Canada
Kerry	Newkirk	Senior Policy Coordinator, Oceans Program Development Branch, Fisheries and Oceans Canada
Bruce	Osborne	Manager of Innovations and Field Service
Jake	Rice	Director, Assessment and Peer Review, Canadian Science Advisory Secretariat, Fisheries and Oceans Canada
Lori	Ridgeway	Director General, International Coordination and Policy Analysis, Fisheries and Oceans Canada
Phillip	Saunders	Dean of Dalhousie Law School
Renée	Sauvé	Senior Policy Advisor, International Coordination and Policy Analysis, Fisheries and Oceans Canada
Louis	Simard	Director, Oceans and Environmental Law Division, Foreign Affairs Canada
Susan	Waters	Counsel, Legal Services, Environment Canada
Martin	Willison	Professor of Biology, Dalhousie University
Boris	Worm	Assistant Professor in Marine Conservation Biology , Dalhousie University

APPENDIX III: DISCUSSION QUESTIONS

Genetic Resource Questions

- Is there any Canadian activity with regard to genetic resources in the high seas? What is the involvement of the biotech industry?
- Does "bioprospecting" and access to genetic resources in the Area need to be regulated? How harmful is MSR/bioprospecting to vulnerable marine areas?
- Is it practical to contemplate different regimes for MSR with no commercial application (i.e. pure research) and MSR that does have commercial application (i.e. applied research)?
- Would the International Seabed Authority be an appropriate mechanism for regulating "bioprospecting"?
- If not, what alternative governance arrangements might be considered?

Broader Marine Biodiversity Questions

- Can biodiversity be protected through better implementation of existing regimes, or do we need new rules, arrangements or institutions that deal specifically with protection of biodiversity from the various activities? Are there gaps in the current regime?
- If we do need new rules, arrangements, institutions, what options are there to achieve integrated oceans governance and better protection of biodiversity?
    - Is there a need for a mechanism or mechanisms to integrate scientific advice and management in the various sectors?
    - Should a "comprehensive" approach to strengthening governance arrangements for the high seas / deep seabed be considered, addressing the various gaps and weaknesses under a single umbrella (such as a Law of the Sea Implementation Agreement on the High Seas) or a more "sectoral" approach where, for example, high seas fisheries might be addressed under the UN Fish Stocks Agreement and "bioprospecting" under the Convention on Biological Diversity?
    - If a "comprehensive" approach is followed, what would be the best strategy for reaching a negotiated text, for example, amendment of the Law of the Sea Convention or an Implementation Agreement?
    - Are there issues that might be addressed through UN Resolutions or other non-binding approaches?
- How can MPAs be an effective tool? What is the role that the existing international bodies or treaty bodies could play with respect to MPAs?

- Do regional approaches to managing resources/areas beyond national jurisdiction hold promise and how might regional approaches be enhanced?

- What are the research issues and priorities surrounding high seas/deep seabed biodiversity?

- Are there other uses of the oceans that need to be regulated or better regulated?

Other Questions

Are there other questions that participants wish to raise?

APPENDIX IV: PRESENTATION BY DR. BORIS WORM

High Seas Fish Stocks and Marine Biodiversity

APPENDIX V: MAIN BACKGROUND DOCUMENTS

1. *The International Legal Regime of the High Seas and the Seabed Beyond the Limits of National Jurisdiction and Options for Cooperation for the Establishment of Marine Protected Areas (MPAs) in Marine Areas Beyond the Limits of National Jurisdiction* - Ad Hoc Open-Ended Working Group On Protected Areas (First meeting, Montecatini, Italy, 13-17 June 2005).

2. *Oceans and the law of the sea: Report of the Secretary-General, Addendum* - Sixtieth session Item 76 (a) of the provisional agenda.

3. *Bioprospecting of Genetic Resources in the Deep Seabed: Scientific, Legal and Policy Aspects* -The United Nations University Institute of Advanced Studies (UNU-IAS) Report

4. *Biodiversity Beyond National Jurisdiction: Policy Overview (Preliminary Draft)* - Biodiversity Beyond National Jurisdiction (BBNJ) Interdepartmental Policy Working Group.