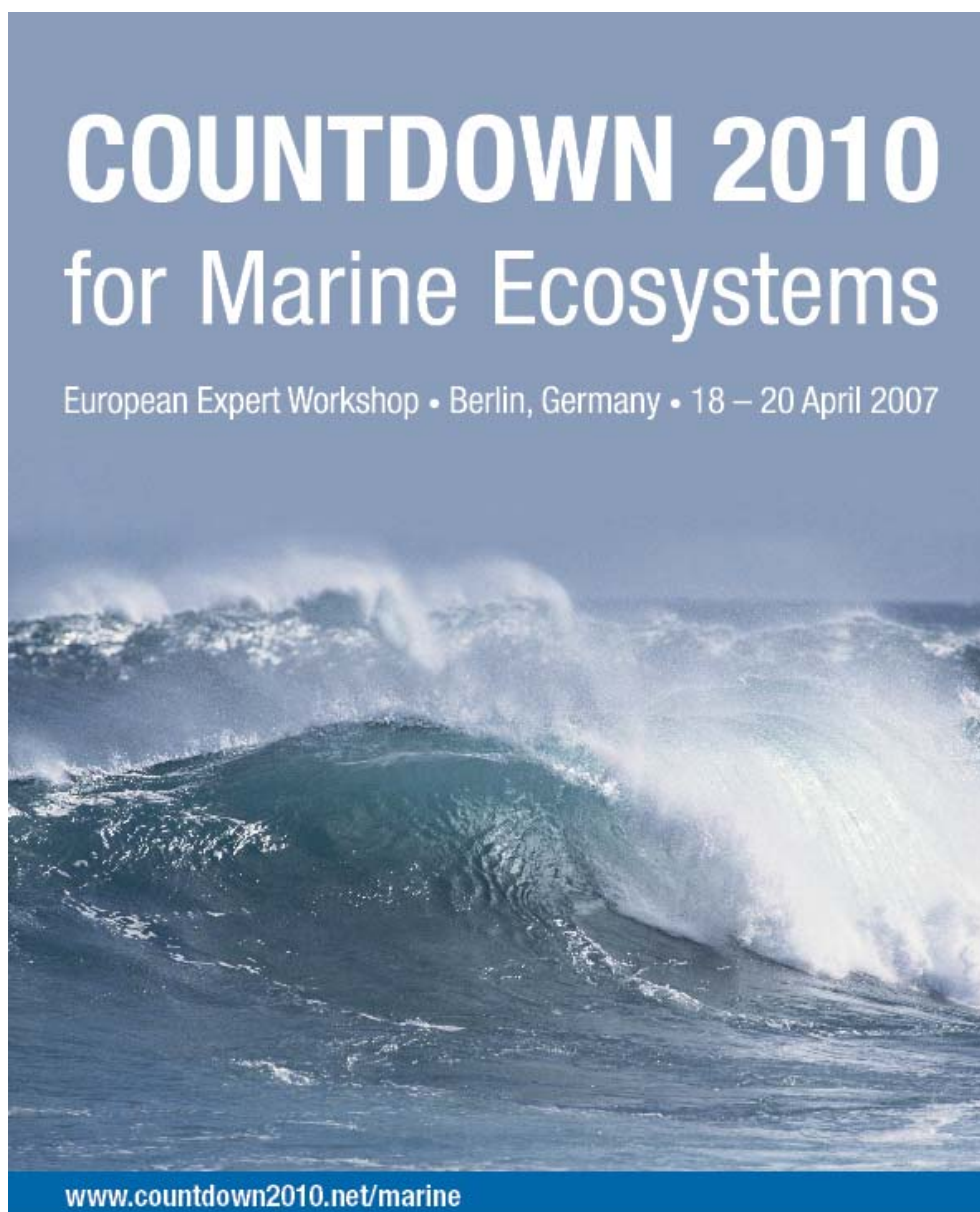


Henning von Nordheim and Carl Gustaf Lundin (Eds.)

Countdown 2010 for Marine Ecosystems



BfN - Skripten 218

2007

Countdown 2010 for Marine Ecosystems

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Cover picture: poster of the workshop © IUCN Regional Office for Europe. Concept: Bernd Bruhns

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The workshop is part of a project which is funded and supported by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)

Gefördert durch das Bundesamt für Naturschutz mit Mitteln des
Bundesministeriums für Umwelt, Naturschutz und Reaktorsicherheit

This Skript is available online: www.HabitatMareNatura2000.de

This publication is included in the literature database “**DNL-online**” (www.dnl-online.de)

BfN-Skripten are not available in book trade.

Publisher: Bundesamt für Naturschutz (BfN)
Federal Agency for Nature Conservation
Konstantinstrasse 110
53179 Bonn, Germany
URL: <http://www.bfn.de>

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Printed by the printing office of the Federal Ministry of Environment, Nature Conservation and Nuclear Safety.

Printed on 100% recycled paper.

Bonn, Germany 2007

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Foreword

by Jochen Flasbarth and Tamás Marghescu

The marine environment is increasingly under threat. Loss of marine biodiversity is threatening ecosystem stability. Overfishing, contamination, acidification through carbon sequestration, and other imminent threats, are decreasing the benefits that humans can derive from the sea. Our seas and oceans are essential for global food security and for sustaining human economic prosperity.

Protection of marine biodiversity was a priority theme for the German Government during its European Union (EU) Presidency in the first half of 2007 and will remain as such during the EU Presidencies of Portugal and Slovenia. In the framework of the initiative "Countdown 2010" (www.countdown2010.net), Germany was making increased efforts to reach the EU target of 'halting biodiversity loss by 2010' and handed over its commitment on especially the protection of marine biodiversity to its partners the Governments of Portugal and Slovenia in the framework of the so called 'Triple EU Presidency'. An expert workshop "Countdown 2010 for Marine Ecosystems", held from 18th - 20th April 2007, in Berlin, did address the key challenges and opportunities facing marine conservation both within and beyond European waters in coming years. The workshop

was organised by the Secretariat of the Countdown 2010 initiative (provided by IUCN – The World Conservation Union), in collaboration with the German Ministry for the Environment and Nuclear Safety (BMU) and the German Federal Agency for Nature Conservation (BfN). The workshop identified mechanisms to improve marine environmental governance and conservation through the implementation of existing international commitments.

Based on a review of scientific knowledge and consultation with leading experts, the workshop agreed on "Key Messages for Enhancing Marine Conservation". These key messages give recommendations for progress in important marine protection policy areas. They address the establishment of the EU protected area network Natura 2000, the integration of biodiversity into the EU's marine policies, the governance and protection of high sea ecosystems and present options for an Implementation Agreement for protection of marine biodiversity in areas beyond national jurisdiction. The messages give a clear vote for crucial principles such as ecosystem management, the polluter-must-pay principle and spatial planning for the protec-

tion of our oceans and their assets and treasures.

The proceedings of the workshop consolidate relevant documents of the workshop, mainly the 'Key Messages for Enhancing Marine Protection' and the background papers for marine conservation, which were written by independent experts for the workshop. Latter served to facilitate debate between participants at the workshop. Further articles, which are based on presentations given during the workshop and selected presentations give an overview of the expert input. The Key Messages are currently presented to decision-makers at the EU level and within EU Member States. They are submitted as contribution to the Green Paper on a Future Maritime Policy for the European Union.

The Heads of all EU states made the commitment to halt the loss of biodiversity within the EU by 2010. The conservation and sustainable use of marine biodiversity plays a key role in reaching this target and supporting sustainable development within the EU, and beyond. The Workshop and the resulting Key Messages are a valuable contribution to this target.

Jochen Flasbarth

General Director

Directorate Nature Conservation and
Sustainable Use of Natural Resources

German Federal Ministry for the Environment,
Nature Conservation and Nuclear Safety

Tamás Marghescu

Regional Director for Europe

The World Conservation Union (IUCN)

* * *

In April 2007, around 100 high-level marine conservation experts from European member states joined for a 3-day workshop in Berlin, Germany. The participants were personally invited and did represent their respective country. Experts from UN organizations, regional conventions and institutions such as NGOs gave additional background presentations.

The workshop formed part of an EU-wide project for enhancing marine conservation by influencing the relevant EU policy and legislation processes (e.g. EU Marine Strategy Directive, Maritime Green Paper).

The workshop and the project are part of Germany's contributions to the Countdown 2010 initiative and demonstrate its priority setting during the EU Presidency. The German Government regards effective marine conservation and appropriate management of human activities as crucial for halting the loss of marine biodiversity.

The workshop was organized by The World Conservation Union (IUCN) jointly with the German Federal Agency for Nature Conservation (BfN) with funds of the German Federal Ministry for the Environment (BMU). IUCN contributed institutional and scientific expertise from its Regional Office for Europe and from its Global Marine Programme.

The participants of the workshop adopted the "[Key Messages for Enhancing Marine Conservation](#)" which clearly emphasize the important role and responsibility of the European Union in improving the conservation and sustainable use of marine biodiversity. The [Key](#)

[Messages](#) can be found in the first part of the proceedings.

The workshop concentrated on facilitating expert consensus and on agreement on principal outcomes. It started with Key Note and Background presentations. A selection of these presentations is presented here in the proceedings. After the Opening session, the workshop immediately split up in two working groups. Working Group 1 focussed on Natura 2000 and EU Marine Policies issues, whereas Working Group 2 concentrated on questions regarding the conservation of high seas biodiversity. At the final plenary session, the Working Groups came back together, and – after jointly discussing the outcomes of the Working Groups – adopted the [Key Messages](#) which consolidate the conclusions of the Workshop.

The working group discussions were guided by some expert presentations. The proceedings present a selection of those and therefore give an impression of the interesting discussions.

Some weeks in advance of the workshop, all participants received the "Workshop Background Papers". Written by the following experts Farmer, Gjerde, Gubbay, Hart, Herodes and Lutchman, they aimed at providing a common basis for the discussions. The Background Papers covered the areas of Natura 2000, EU marine policies, high seas biodiversity conservation and options for an Implementation Agreement for protection of biodiversity in areas beyond national jurisdiction. The proceedings present updated versions of these Background Papers.

The [Key Messages for Enhancing Marine Conservation](#) aim at charting the way forward for marine conservation. They are designed for delivering input into policies primarily at EU level. They are submitted as contribution to the Green Paper Consultation Process, the development of the EU-Marine Strategy Directive and they will be presented at relevant conferences. As host of the next Conference of the Parties of the Convention on Biological Diversity (CBD) in May 2008 and with its EU and G8 Presidencies, Germany plays an important role in developing solutions for the urgent problems of marine conservation.

The proceedings pay tribute to the high level and quality of the workshop, its documents and outcomes. We hope they will contribute to an ongoing process of halting the loss of biological diversity in the seas by 2010. They are available electronically under www.habitatmare-natura2000.de/ and www.countdown-2010.net/marine (IUCN) and as printed version from BfN and IUCN on request.

Finally, we would like to thank all participants and presenters at the workshop, the focal points at BfN and BMU, the authors of the Background Papers, the contributor to the proceedings, the staff at IUCN, and, last but not least, the organizer of the conference and the proceedings, for their substantial work which jointly set up very fruitful outcomes.

The editors

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Preamble

Human impacts such as overfishing, contamination, acidification, and climate change are driving the loss of marine biodiversity and decrease the benefits that humans can derive from the seas. Our seas and oceans are essential for global food security, for sustaining economic prosperity, and for the environmental health of our planet.

Approximately 100 experts from 18 European Union Member States, UN organizations, regional seas conventions and NGOs met in Berlin during the German EU Presidency, 18-20 April 2007, and agreed on the following key messages.

These messages emphasise the importance of the active contribution of the European Union to improve the conservation and sustainable use of marine biodiversity and outline important immediate steps towards reaching the EU target to halt biodiversity loss by 2010.

The Berlin Marine Expert Workshop considered three main themes: i) the marine Natura 2000 network; ii) future EU marine policy (the Marine Strategy Directive and the Maritime Policy); and iii) protecting biodiversity beyond national jurisdiction. The participants recommended the full and timely implementation of the marine Natura 2000 network, including the integration and efficient management of all human activities, better integration of biodiversity conservation objectives into all sectors of EU maritime policy, and emphasised the urgent need for measures to halt the loss of biodiversity in the high seas and seabed beyond national jurisdiction. The need to establish marine protected areas beyond national jurisdiction through collaborative processes consistent with international law was stressed, and the possible scope and elements of an Implementation Agreement for the protection of marine biodiversity beyond national jurisdiction were discussed.

The key messages from this meeting will support the “Triple EU Presidency” of Germany, Portugal and Slovenia in their ongoing efforts to improve marine conservation from the coastal zones to the Seas beyond national jurisdiction. Building on key processes such as the Potsdam G8+5 initiative, this document offers guidance for the completion of a coherent Natura 2000 network across the EU and especially in the offshore areas, the development of the future EU maritime policy, and the preparations for, amongst others, the CBD COP9, the United Nations Informal Working Group meeting on biodiversity beyond national jurisdiction in early 2008, the IUCN World Conservation Congress, and relevant EU and global processes.

Theme I. Marine Natura 2000 network

Although there has been considerable progress with the establishment of Natura 2000 areas in the marine environment in the last decade, progress continues to be too slow to fulfil the EU biodiversity targets.

In relation to designation and management of Natura 2000 sites, the following messages were identified:

Designation

The European Commission has circulated a timetable for completing the designation of marine Natura 2000 sites which was agreed with the Nature Directors of Member States in May 2006:

Case 1: Mid 2007 – completion of the process of proposal/designation of sites which have already been scientifically identified as potential Natura 2000 sites.

Case 2: Mid 2008 – completion of further scientific investigation with a view to determining if other areas should be included in Natura 2000 and of the process of their proposal/designation.

Case 3: Mid 2008 – clear identification of additional scientific work that would be required for full completion of the Natura 2000 network, if this is not possible by 2008, and a clear time frame for achieving this.

The following messages and steps are considered essential for achieving this timeline:

- In working to fulfil this timetable it is necessary that work is taken forward on the basis of existing information whilst recognising that it will improve with greater scientific knowledge. A variety of methodologies such as modelling can be used to support this process.
- In the offshore area, there are advantages to considering the designation of relatively large sites, rather than many small sites (e.g. in terms of dealing with threats, management and monitoring).
- In identifying the marine Natura 2000 sites, there is also a need to apply the precautionary principle more widely in order to balance the need for urgent protection with the scarcity of economic resources for carrying out full research campaigns.
- Regarding Case 3 (see above), where it is not possible to gather enough scientific information to identify sites by 2008, particularly for large offshore areas, Member States should work together and with the Commission to develop a positive approach and ambitious timetable for completing the Natura 2000 network in those areas.
- The development of the Natura 2000 network and Marine Protected Areas (other MPA) networks including those under European Regional Sea Conventions will have mutual benefits and when implemented will contribute to achieving the targets of Countdown 2010.
- The scientific community is encouraged and invited to actively engage in the identification and selection process, particularly with regard to offshore sites.



Management

In order to achieve the targets and objectives of the Natura 2000 network for marine biodiversity conservation, the following messages concern some management aspects of key importance:

- Close co-ordination of actions identified under the Water Framework Directive and Natura 2000, such as management plans, is essential.
- To achieve favourable conservation status in Natura 2000 sites¹, a proactive and precautionary approach in terms of fisheries management should be proposed by the European Commission (DG Environment and DG Fisheries) and advanced by the European Council. This could include a timetable for submissions of proposals to the Fisheries Council in order to streamline the decision making process.
- Proposals for fisheries management measures for Natura 2000 sites could be grouped e.g. on the basis of particular marine regions, gear types, habitats or species. Gathering the necessary scientific information should be strengthened.
- Better dialogue and increased cooperation with fisheries authorities, including ready access to and provision of data on fisheries (e.g. Vessel Monitoring System, logbooks, bycatch), is essential for conservation authorities to effectively manage Natura 2000 sites.
- The Member States should prioritise the use of the EC Fisheries Fund (and other relevant funds including national budgets) to support the identification and management of Natura 2000 sites and implementation of the Habitats and Birds Directives' provisions.
- In the longer term, the 2012 review of the Common Fisheries Policy (CFP) should provide a more streamlined system to enable Member States to meet their environmental obligations including those relating to fisheries management in Natura 2000 sites.

Experts agreed that a necessary step would be to revitalise the EC Marine Expert Working Group as a forum for addressing these messages.

¹ Sites refers to Sites of Community Importance (SCIs), and Special Protection Areas (SPAs) etc.

Theme II. Marine Strategy and Future Maritime Policy

Marine Strategy Directive²

In light of the ongoing discussions of the Marine Strategy Directive the following messages were identified:

- Further serious consideration should be given to the development of criteria for good environmental status for inclusion in the Directive. These criteria should also clearly address issues related to marine biodiversity, including biodiversity's role in maintaining the natural structure and functioning of marine ecosystems.
- There should be more detailed wording on standards in the Directive itself and correspondingly less reliance on the proposed Regulatory Committee.
- In line with the role of the Directive in protecting marine biodiversity, there should be a definition of, amongst others, the term "marine environment" in the Directive.
- The Directive should stress the important role played by the Regional Seas Conventions and should complement and build upon the guidance and measures adopted under those conventions.
- The Directive should make express reference to the precautionary principle; best available techniques; best environmental practice; and to the principles that preventive action should be taken; that environmental damage should as a priority be rectified at source; and that the polluter should pay.
- Consideration should be given to whether the geographic scope of the Directive should include marine internal waters (i.e. marine waters landward of the baseline).
- While avoiding unnecessary bureaucracy, and acknowledging any role for the Commission on this matter, there should be coordination between the Member States in order to ensure consistent interpretation and implementation of the Directive's standards across the European Community as a whole.
- Implementation of the Directive would benefit from the adoption by the Member States of a streamlined common implementation strategy; for a given marine region the relevant Regional Seas Convention could provide an appropriate forum for that purpose. A dialogue between Regional Seas Conventions across Europe should be encouraged, together with the involvement of other international organisations with sectoral competences.
- In the spirit of creating consistency in European Community law, the 2012 review of the Common Fisheries Policy should provide a more streamlined legal framework to enable Member States to achieve Good Environmental Status under the Directive.
- Given the challenge of achieving Good Environmental Status in 2021 only three years after the deadline for entry into operation of the programme of measures in 2018, Member States should seek every opportunity to implement measures prior to 2018 where possible.

- The articles of the Directive should make explicit reference to the role of the Common Fisheries Policy in helping to achieve Good Environmental Status.

A future Maritime Policy

In discussing a future EU maritime policy, the experts agreed on the following key messages:

- The Maritime Policy should be set in the context of climate change impacts and should enable the relevant adaptation, mitigation and integrated actions that will be required for sectors. This should include active contributions to reducing carbon dioxide emissions.
- The Maritime Policy should provide well-specified mechanisms to achieve better integration of environmental protection into all relevant sectors, for example fisheries, transport and agriculture.
- The adoption of the Marine Strategy Directive should not be delayed by the ongoing development of the Maritime Policy.
- Environmental protection should underlie the Maritime Policy rather than being a twin pillar with the Lisbon strategy.
- The environmental component of the Maritime Policy should comprise not just the Marine Strategy Directive but also all other relevant EC environmental obligations including the integration of environmental protection across sectors. The following principles should be firmly reflected in the Maritime Policy: the precautionary principle, ecosystem approach, best available techniques,

² The messages reflect the views of the majority of experts at the meeting. The messages on the Marine Strategy Directive address matters on which decisions in the Council of the European Union have already been taken and are without prejudice to the agreed positions of the Member States adopted in that forum.

COUNTDOWN 2010 for Marine Ecosystems

European Expert Workshop

Berlin, Germany

18 – 20 April 2007

KEY MESSAGES FOR ENHANCING MARINE CONSERVATION



www.countdown2010.net/marine

Theme III.

High Seas Biodiversity Conservation

Challenges and Opportunities for Meeting the 2010 and 2012 Targets

best environmental practice and the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay.

- The Maritime Policy should require that marine and coastal spatial planning, based on an ecosystem approach, provides the framework for management of marine activities.
- The Maritime Policy should emphasise opportunities for training and capacity building on sustainable use and environmental protection.
- The Maritime Policy should recognise that more environmental knowledge is required to fulfil its purposes and that funding should be provided for directed scientific research at EC level to facilitate this.

Sixty-four percent of the world's oceans occur outside national jurisdiction and biodiversity in these areas is under increasing threat. Whereas the United Nations Convention on the Law of the Sea (UNCLOS) provides the overarching legal framework for all activities in the oceans, the legal regime and its implementation are currently insufficient to achieve an integrated approach to oceans governance. In particular, to meet the 2010 and 2012 targets, a twin-track approach is suggested:

- Immediate measures to be taken under existing legal instruments and agreements both within European context and beyond; and
- Measures to be taken to promote an Implementation Agreement to UNCLOS, as currently supported by the European Union, to provide

for ecosystem-based management of biodiversity beyond national jurisdiction.

The marine experts of the Berlin meeting recognised that in taking this twin-track approach, action is required not just on immediately implementable measures, but also on actions to pave the way for longer-term measures, including the Implementation Agreement. The need for such action, the experts felt, is heightened by the increasing level of certainty about the scale and nature of impacts of climate change on the marine environment. Marine protected areas (MPAs) are needed to build resilience into these ecosystems. The urgent actions to protect areas beyond national jurisdiction must be fully integrated and recognised in the development of a possible future European Maritime Policy.



Existing instruments and agreements within Europe

In considering the actions that should be taken using existing instruments and agreements, the Berlin Marine Expert Workshop agreed on the following messages and concluded that in the European context, the following elements are important in the next 24 months:

- Establish more pilot MPAs in the high seas and seabed beyond national jurisdiction through regional seas conventions, to gain implementation and management experience;
- Establish closer coordination between fisheries and environment/conservation bodies:
- Regional seas organisations and Regional Fisheries Management Organisations (RFMOs), in particular between OSPAR and the North-East Atlantic Fisheries Commission (NEAFC), building on existing cooperation; and between the Barcelona Convention and the General Fisheries Commission for the Mediterranean (GFCM), regarding high seas spatial protection measures;
- At the Member State and European Community level to enhance coherent action concerning marine biodiversity and fisheries and also with respect to development assistance.
- Achieve more fisheries closures through RFMOs and other area protection measures through sectoral policies;
- Identify other potential MPA sites beyond national jurisdiction, for example through OSPAR's ongoing work with scientists;
- Identify and communicate lessons learned (positive and negative) from the Pelagos marine sanctuary (straddling territorial seas and high seas areas in the Mediterranean);
- Develop and promote Codes of Conduct for scientific activities in the high seas and deep seas of the Northeast Atlantic (as already begun in OSPAR) and the Mediterranean.

Existing instruments and agreements outside of Europe

Outside the European context, the following actions are important in the next 24 months:

- Promote the formalisation, funding and broadening of the mandate of the UN ad hoc open-ended informal Working Group on Biodiversity beyond National Jurisdiction
- Work out an appropriate follow-up to the G8+5 Environment Ministers "Potsdam Initiative"³ on a Global Network of Marine Protected Areas to maintain high level government momentum on the issue;
- Work to ensure wide acceptance of criteria for MPAs beyond national jurisdiction as will be developed at the CBD Portugal Workshop, drawing from existing examples such as OSPAR (e.g. through the attendance of relevant bodies and also through ensuring that the criteria are taken up in their work);
- Hold a joint meeting of the general non-tuna RFMOs to exchange best practices and review the outcomes of performance assessments, and undertake this in association with relevant environmental representatives, e.g. regional seas organizations, environmental experts and NGOs;
- Participate in the South Pacific RFMO negotiations to pursue implementation of UNGA Resolution 61/105 in relation to interim measures for fishing with bottom gear but also to ensure establishment of a comprehensive fisheries conservation and management regime;
- Contribute to the Ministerial debate at the CITES Conference of Parties in June 2007 on the Conference of the Parties' role in marine species conservation and also to the plenary debates on agenda items regarding the listing of marine species (including commercial species), consideration of marine issues in the Strategic Vision, and the implications of "Introduction from the Sea" for marine species caught in areas beyond national jurisdiction.

³ 'Global network of MPAs: We will intensify our research and enhance our cooperation regarding the high seas in order to identify those habitats that merit protection and to ensure their protection.'

UNCLOS Implementation Agreement

To increase global support for an Implementation Agreement to UNCLOS, the expert messages for possible ways forward include:

- Development of background studies:
 - a gap analysis to identify regulatory and governance gaps;
 - an “options” paper on scope and content of the Implementation Agreement;
 - a case study to provide an example of a situation which is not currently covered under existing regulation in order to demonstrate the need for an Implementation Agreement (e.g. the Mid-Atlantic Ridge).
- An informal meeting of interested Member States under the German EU Presidency to obtain clarification on key issues identified by the Working Group that could be brought together in an elaborated options paper.
- Subsequent joint meetings, under the triple Presidency, involving a broader range of EU constituencies such as the Working Groups of the Council, including the Working Party on International Environmental Issues, the External Fisheries Group, and the Working Group on the Law of the Sea (COMAR), on the scope and elements of the Implementation Agreement.

- Possibly a conference for the international community to explore and discuss the scope and elements of the Implementation Agreement and to provide a forum for further informal discussion. Such a conference could be sponsored by the European Union and other like-minded States.

The experts supported the objectives and principles of the Implementation Agreement as drafted in the Workshop background paper and concluded that the following areas were priorities for clarification under this process:

- Scope of the Implementation Agreement;
- Institutional arrangements;
- Financing;
- Enforcement.

In relation to the scope of the possible Implementation Agreement, the Berlin Marine Expert Workshop noted that priorities would be: integrated spatial planning, including networks of high seas MPAs, strategic environmental assessment and environmental impact assessment, and an articulation of how enforcement would occur. However, there was less clarity on other issues such as marine genetic resources and RFMO reform. Experts also noted the importance of capacity building and marine scientific research.

There is a need to listen to and account for the perspectives of the international community and to more broadly engage with key states and stakeholders. As next opportunities for such discussions were noted:

June 2007:

UN Informal Consultative Process

July 2007:

Conference on Maritime Policy and Globalisation organised by the Conference on Peripheral Maritime Regions of Europe and the Azores Regional Government

October 2007:

IUCN Symposium on options for High Seas governance

Early 2008:

UNGA Working Group on BBNJ

April 2008:

Global Oceans Forum

May 2008:

CBD COP9

October 2008:

IUCN World Conservation Congress

The Berlin Marine Expert Workshop recommended that Member States and the European Commission assist and support the IUCN/WCPA Marine led work in cooperation with the World Conservation Monitoring Centre to improve the quality of the World Data Base on Protected Areas, including MPAs beyond national jurisdiction, as well as its work on behalf of the CBD regarding Interactive Mapping of high seas and seabed biodiversity and biogeography.

Progress in marine conservation should be continuously monitored as an indicator of performance towards the 2010 and 2012 targets, and the Millennium Development Goals. The Countdown 2010 initiative is one of the recognised frameworks in which this should be promoted.



COUNTDOWN 2010 for Marine Ecosystems

European Expert Workshop

Berlin, Germany

18 – 20 April 2007

The European expert workshop “Countdown 2010 for Marine Ecosystems” took place in Berlin, Germany, from the 18 to 20 April 2007.

As part of Germany's contributions to the Countdown 2010 initiative, the workshop was jointly hosted by the German Federal Ministry for the Environment, the German Federal Agency for Nature Protection (BfN) and the World Conservation Union (IUCN).

European governments have promised to halt the loss of biological diversity on land and in the seas by 2010. The initiative Countdown 2010 - hosted by the World Conservation Union (IUCN) - supports these and other ambitious conservation targets in collaboration with governments and civil society.

For further information, please contact the IUCN Regional Office for Europe and visit the conference website www.countdown2010.net/marine.

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Gefördert durch das Bundesamt für Naturschutz mit Mitteln des Bundesministeriums für Umwelt, Naturschutz und Reaktorsicherheit



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PRESENTATIONS AT THE CONFERENCE

Opening Statement

*by the Parliamentary State Secretary Astrid Klug**

Welcome

Ladies and Gentlemen, I warmly welcome you to Berlin. Thank you very much for coming all the way to the German capital to support us in finding solutions to one of the most pressing global problems – the conservation and sustainable use of our world's oceans. I am very pleased that our invitation has met with such a great response. The attendance of experts from more than 20 European countries, our esteemed colleagues from the European Commission and from international and non-governmental organizations will guarantee very fruitful discussions and will give credibility and legitimacy to the results of the workshop.

Marine ecosystems: Most used and least protected

The world's oceans are extremely vulnerable. They are one of the most heavily used ecosystems. But at the same time they are the least understood and least protected areas of our planet. What we already know about marine biodiversity is highly alarming. 75% of marine fish stocks are already exploited up to or beyond their biological limit; 25% of these stocks are already endangered and 80% of the Caribbean coral reefs have been destroyed. I could continue presenting you countless alarming figures but I am sure you are very familiar with the extent of the problem. The world's oceans are facing a serious crisis.

Because of the amazing magnitude of the ocean and due to the limitations of technologies to exploit its biological resources and to access remote areas, it seemed for a long time that marine biodiversity was an inexhaustible resource. We all know that technologies have developed at an incredible pace and that

today, due to modern technology, fishing and mining are possible in the most remote areas. New possible threats are also emerging such as the storage of CO₂ in the marine subsoil. The marine environment and its biological diversity are suffering from a multiple range of mounting pressures. We therefore have to move away from the still prevailing sectoral approach and understand the ecosystem in an integrated manner. We urgently have to apply the ecosystem approach and develop coherent policies and integrated frameworks for the management of all human activities.

While recognizing the mounting threats, we are also increasingly becoming aware of the fundamental role of biological diversity for the global economy and our livelihoods. For instance, the trade in oceanic fisheries is valued at 5.9 billion US dollars a year. The oceans are a significant basis for global nutrition as well as for the sustainable development of thousands of coastal cities and communities. Of current medicines, up to 50 percent are derived from natural products – also marine products. With every species we lose, we might be losing a remedy for global health problems.

European Union – Part of the problem and part of the solution

The EU has a crucial role to play in facing the global problem and finding solutions for a sustainable future. On the one hand, the EU itself is one of the biggest users of the world's marine ecosystems and the European waters are some of the most intensively used oceanic areas. On the other hand, there is growing awareness of the problem and numerous activities are already underway to conserve and sustainably use marine biodiversity in the European context.

EU Presidency / G8 Presidency / CBD COP9 – The context of the workshop

Achieving the 2010 target to stop the loss of biodiversity and the 2012 target to establish a global network of marine protected areas are crucial priorities for the German government. We have therefore decided to make the conservation of marine biodiversity one of the central topics during our EU and G8 presidencies. We also know that we are very much in line with our colleagues from Portugal and Slovenia. In our joint programme for the triple presidency, the marine ecosystems are high on the political agenda. In this context we very much welcome the IUCN Countdown 2010 Initiative as an important partner for our endeavours. By jointly organizing this workshop together with the IUCN we can create many synergies. The Union is an indispensable partner in the development of European and global solutions.

The main topics of the workshop

The three main topics of this workshop are marine protected areas – especially Natura 2000 –, European marine policies and the conservation of biodiversity on the high seas. In the following I will only give a short overview as the next speakers will deal with each of the topics in much greater detail.

Marine protected areas – Natura 2000

The establishment of marine protected areas is an essential tool in the protection of marine biodiversity. This target has become widely accepted and is reflected in the relevant global and regional marine conventions and initiatives. One of the core decisions of the World Summit on Sustainable Development in Johannesburg and of the 7th Conference of the Parties to the CBD was the decision to establish a global network of marine

* Astrid Klug is Parliamentary State Secretary at the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety.

protected areas by 2012, explicitly including areas on the high seas.

On a regional level both the OSPAR Convention and the Helsinki Commission have also been promoting the establishment of marine protected areas since the early 1990s. At their first Joint Ministerial Conference in Bremen in 2003, both Conventions agreed on the establishment of an efficiently managed and coherent network of marine protected areas in the North-East Atlantic and the Baltic Sea by 2010. Since then, contracting parties have nominated marine protected areas to the OSPAR and HELCOM Secretariats, but the number of areas still seems to be very low.

The European Commission has emphasized the importance of extending the implementation of the European Birds and Habitats Directives to the offshore area of the Exclusive Economic Zone or equivalent zones. The Commission has provided a timetable for the completion of the marine Natura 2000 network by 2008. That means we still have a lot of work ahead of us. The identification and designation of offshore sites is certainly the greatest challenge for the Member States due to the lack of scientific knowledge on the one hand, and the mostly unclear legal issues on the other hand. In Germany we learned this lesson from our selection and nomination process of marine Natura 2000 sites in 2004. It is one thing to know something in theory, but another to learn something by doing it. So this is an experience we are happy to share at this workshop. I also look forward to learning from your experiences, for example concerning effective marine management schemes in place in your countries. I am sure that this exchange of ideas on a European level will enable all of us to make joint progress in establishing a coherent network of well-managed protected areas in due time.

Marine policy

Marine environmental policies in Europe have developed over more than 30 years in various regional Conventions. Certain aspects of marine environmental protec-

tion were also covered as by-products of various Directives of the European Community. These developments were not always sufficiently convergent, resulting in rather a patchwork of measures at international level. First steps towards a coherent marine policy of the European Community were taken with the Commission's tabling of the "Thematic Strategy on the Protection and Conservation of the Marine Environment" and the associated proposed "Marine Strategy Directive" in October 2005 and of the Green Paper "Towards a future Maritime Policy for the Union" in June 2006.

The Marine Strategy Directive, on which the Council achieved political agreement in December 2006, is based on an ecosystem approach to the management of human activities. It aims at achieving good environmental status by the year 2021. In this context, Germany considers the stipulation that use shall be made of existing regional institutional cooperation structures, such as the Helsinki Commission and the OSPAR Commission with their vast experiences in marine protection, to be of particular importance. The proposed Directive aims to contribute to the coherence between and the integration of environmental concerns into the different policies, agreements and legislative measures which have an impact on the marine environment. While this has been reflected in the proposed Directive, this reflection is not as clear cut as it could be, in particular when it comes to policy issues under the exclusive competence of the Community such as the Common Fisheries and the Common Agricultural Policies. Further improvements should be considered here.

We hope that the remaining readings in the European Parliament and the Council will provide an opportunity for further enhancing the basis for integrating environmental concerns into the various policies that have an impact on the marine environment.

The Green Paper defines a healthy marine environment as one prerequisite for making optimal use of its goods and services. This can only be achieved if the

relevant policies are founded on a strong environmental pillar as intended by the Marine Strategy Directive. Only on such a basis will we be able to achieve a long-term sustainable use of our marine ecosystems for our benefit and the benefit of future generations.

High seas

Although there is a clear need for steady improvement and the speeding up of our efforts, we have made important progress in the European policies and regulations for the conservation and sustainable use of marine biodiversity. Unfortunately, if we look at the high seas we have made considerably less progress. But the global community is becoming more and more aware of the need for better implementation of existing regulations and for more integrated approaches and frameworks. The decisions of the Johannesburg Summit, of the CBD and other multilateral fora, the resolutions of the United Nations General Assembly, the setting up of the UNGA Open ended Working Group and the agendas of the ICP are sending a clear signal. We have to move away from the sectoral approach and find common ways to protect the marine environment in a comprehensive manner. In the EU we have opted for a two-step approach. In the long term we are heading towards the development of an Implementing Agreement to the UNCLOS. In the short and medium term we know that we can achieve important improvements with the enhanced implementation and better coordination of existing regulations.

In New York we saw the clear need to make our position on the two steps more concrete. On the one hand, there was still wide opposition to the idea of an Implementing Agreement, partly because we were still not able to present more details of our proposal regarding for instance the scope and institutional arrangements for such an agreement. With more details it will be easier to convince our partners and get more support. Australia, New Zealand and Canada, for instance, have expressed a general in-

terest in our approach but have requested more explanations. However, the call for the improved implementation of existing regulations, which is generally supported by all states, remains without consequences if we do not specifically address which regulations should be improved in which way. I hope that we

will be able to put our ideas in more concrete terms during this workshop.

Outlook

The aim of this workshop is to develop concrete recommendations for EU policies and for the global governance proc-

ess. I hope that from Berlin we will give a clear signal to step up our common efforts to protect the world's oceans for our wellbeing and the wellbeing of future generations. With this in mind, I wish us all a very fruitful and successful meeting.

* * *

Selected Key Note Presentations

Halting the loss of biodiversity in the marine environment: European commitments and policies

*by Patrick Murphy**

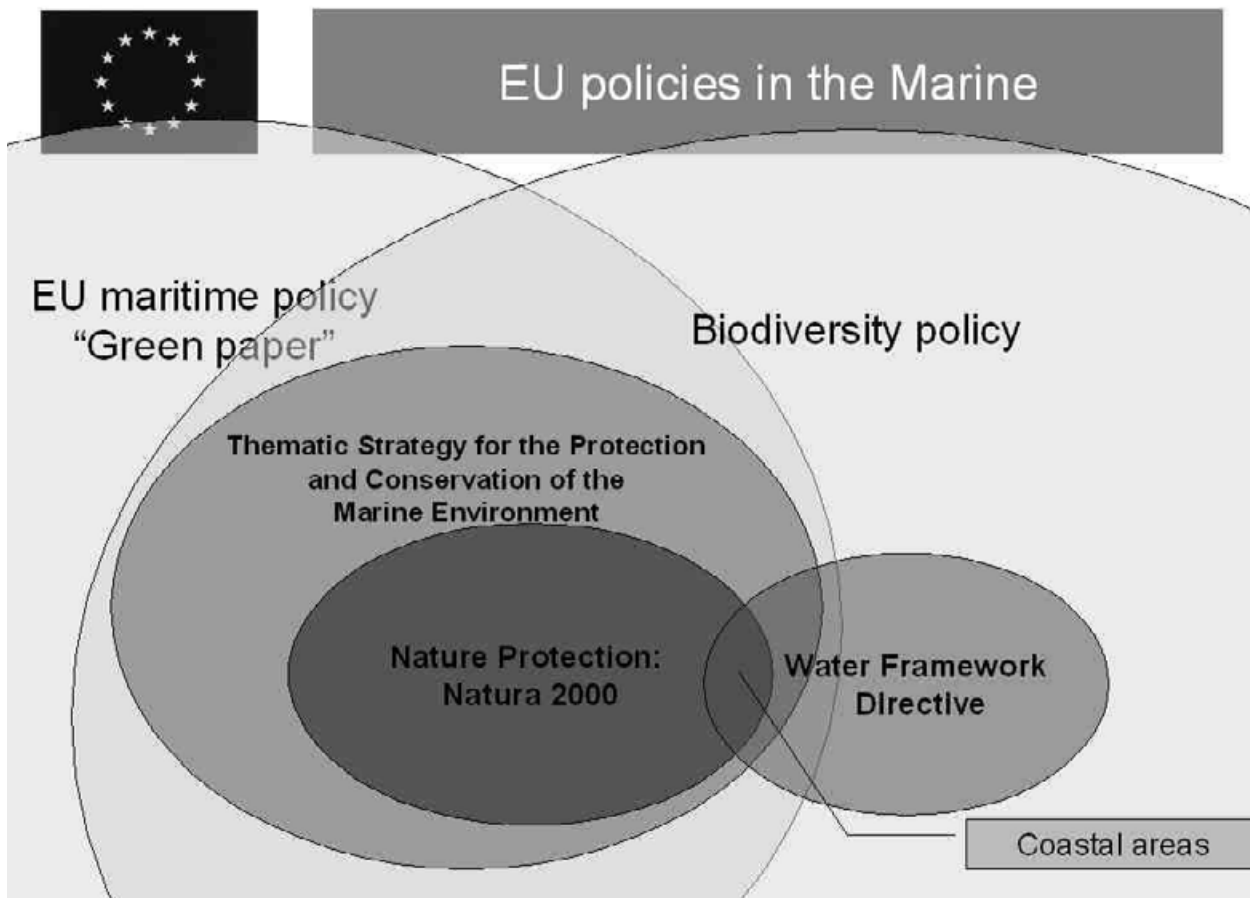


Marine Conservation Policy: International dimension

International context the EU Biodiversity Policy

- World Summit of Sustainable Development: commitment to establish a globally representative system of marine and coastal protected areas by 2012.
- Biodiversity Convention: (CBD) decisions on marine and coastal ecosystems and protected areas, in particular the COP7 decision to establish (by 2012) and maintain a network of marine and coastal protected areas that are effectively managed, ecologically based, consistent with international law and based on scientific information.
- Linkage to COP9 – general lines of EU position re COP 9 being developed and finalised under DE Presidency. Position on Marine issues clarified.
- Policy decisions in Environmental marine regional Conventions (Commitments of the European Community in OSPAR, HELCOM, BARCELONA conventions...)

* Dr. Patrick Murphy is Head of Unit for Nature Protection and Biodiversity (European Commission DG Environment). The presented slides are his key note presentation at the Opening of the Workshop. The opinions expressed in this paper are those of the author, and do not necessarily reflect those of BMU, BfN or IUCN.



Thematic Strategy for the Protection and Conservation of the Marine Environment

The Thematic Strategy for the Protection and Conservation of the Marine Environment

- It contributes to the EC biodiversity policy
- It is the environmental pillar of the future maritime policy
- Adoption of Marine Strategy Directive by end 2007?





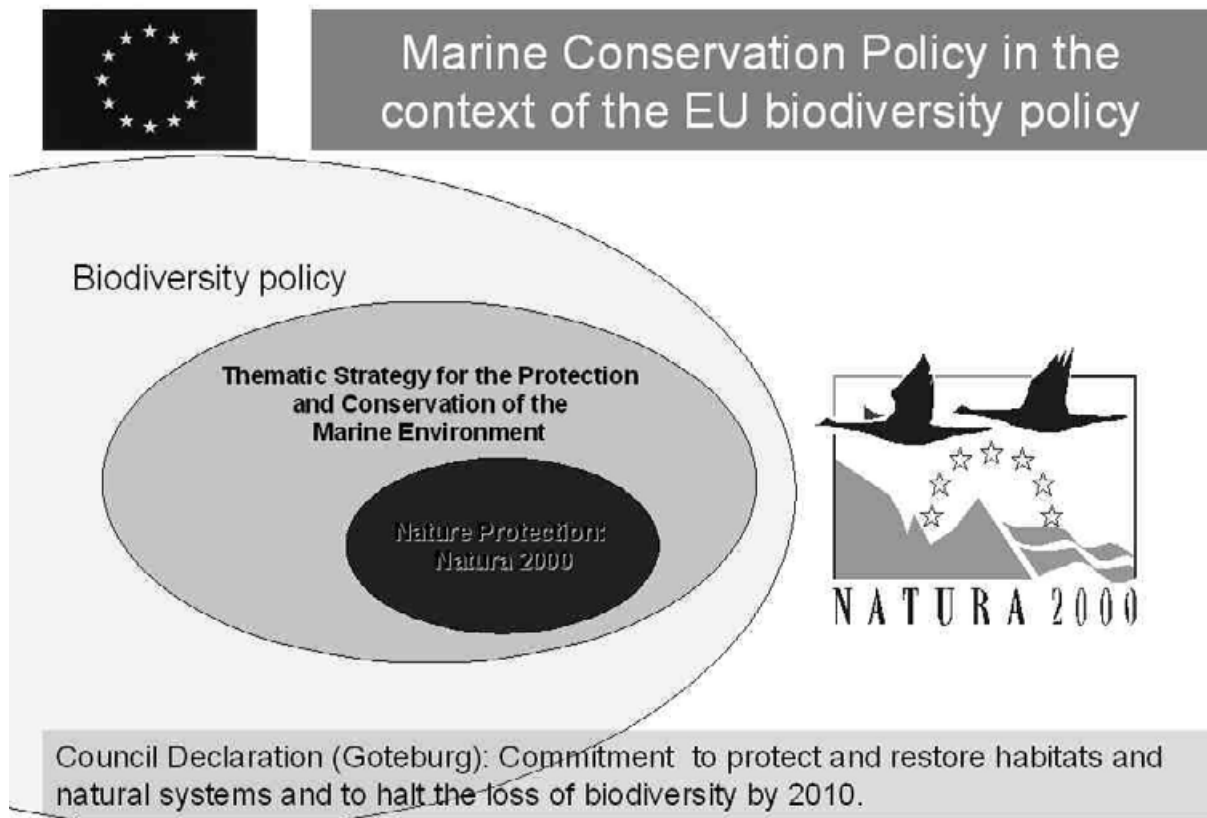
The Marine Strategy Directive: Obligations for EU countries

- **initial assessment** of the current environmental status of the waters concerned and the environmental impact of human activities thereon
- determination of **good environmental status** for the waters concerned
- establishment of **environmental targets**
- establishment and implementation **monitoring** programmes
- development (by 2016) of a programme of **measures** designed to achieve good environmental status and entry into operation of the programme by 2018.



The Marine Strategy: role of Regional Conventions (OSPAR, HELCOM, BARCELONA, BUCAREST CONVENTIONS...)

- Important role the Regional Conventions in the implementation of the Marine Strategy
- Several provisions for which collaboration is needed:
 - Assessment of the status of the marine environment.
 - Determination of the '*good environmental status*' of the marine regions;
 - Establishment of Marine Protected Areas under these Conventions, which can contribute to achieving the overall Directive's objective of '*good environmental status*'. Link to Natura 2000 network.



Constructing the Marine Natura 2000 Network

- Natura 2000 network:
 - a key element of the Marine Strategy for conservation natural values of EU seas and
 - a major response to EC commitments in international forums.
- Future marine Natura 2000 network has to be part of a **coherent European ecological network** (habitat types and species' habitats maintained or restored at a favourable conservation status)
- Natura 2000 network shall include
 - Special Protected Areas (SPA) under 79/409 Birds Directive
 - Special Areas of Conservation (SAC) Under 92/43 Habitats Directive



Constructing the Marine Natura 2000 Network

Next steps include:

- Complete the marine component of Natura 2000 in all maritime areas under jurisdiction of MS (including EEZs and Continental shelf).
Deadlines for designation:
 - By mid 2007 where science exist
 - By mid 2008 where science is to be still completed
 - MS that may demonstrate that it will be impossible to have the necessary science needed for completing the designation process by 2008, will present by mid 2008 a clear implementation programme for completing the network
- Marine biogeographical seminar when MS will propose a substantial package of sites (2008)
 - assessment by marine areas (Mediterranean, Baltic, Atlantic)
- Revision of the reservations included in Community lists



Constructing the Marine Natura 2000 Network

- A first step in protecting the marine environment is to fully implement the existing Natura 2000 provisions.
- After full implementation of existing provisions in all EC maritime areas, potentially further site designations protecting additional more habitat types and species (completing listings).

Charting the course towards healthy seas – NGO expectations for a strong EU Marine Strategy Directive

*by Saskia Richartz**

In October 2005, after almost three years of consultation and preparation, the European Commission adopted its proposal for a Marine Strategy Directive.

The environmental NGOs, BirdLife International, the European Environment Bureau, the European Coastal Union, the Fisheries Secretariat, Greenpeace, the International Fund for Animal Welfare, Oceana, Seas At Risk and WWF, welcomed this step as a necessary measure to ensure the legal protection of Europe's seas, based on common objectives and deadlines. Working in coalition, the aforementioned NGOs also criticised the proposal as falling far short of establishing the holistic framework needed to apply an ecosystem approach to the protection of Europe's seas and the management of marine resources.

The coalition has since worked with the European Parliament and the Member States to ensure that the draft Directive is strengthened, setting the following priorities:

1. The objective must be strengthened.

In light of the dominance of sectoral policies and their impact on the environment, and considering the overwhelming public support for conservation measures, Europe must show confidence and conviction in its environment policies by agreeing to the straightforward commitment of achieving a healthy marine environment;

2. The definition of Good Environmental Status (GES) must be strengthened and criteria set.

GES represents the core of the Directive and must be scientifically sound and politically ambitious. The NGO proposal

for a list of GES criteria can be found on <http://www.greenpeace.eu/downloads/oceans/NGOpaperGES.pdf>;

3. We must address the threats rather than manage the results of our activities.

In line with a practical management scenario, in which we have control over our activities and their impacts on marine ecosystems, but not over the ecosystem itself, the Directive must lead to restrictions on damaging activities rather than simply prescribe a healthy marine environment;

4. The Directive must ensure collective as well as individual responsibilities.

This ultimately requires the development of joint regional or sub-regional actions and strategies rather than national ones;

5. The Directive must implement the ecosystem approach and the precautionary principle.

6. The Directive must complement and consolidate existing policies.

As regards marine protected areas (MPAs), the complementing and consolidation of existing policies is particularly important. The EU Member States have already committed to a raft of policies and targets that relate in one way or another to the implementation of MPAs. For example, governments must:

- **as soon as possible**, implement Natura 2000 at sea;
- by **2008**, address the under-representation of marine ecosystems in MPA networks (CBD Decision VII/28);

- by **2009** identified and complete by [...] **2012** a comprehensive and ecologically representative systems of MPAs (CBD Decision VII/28);
- by **2010**, complete a joint network of well-managed MPAs in the OSPAR and HELCOM regions; and
- by **2012**, complete MPAs, including representative networks and time/area closures for the protection of nursery grounds and periods (WSSD).

In addition, Member States have committed to halting the loss of biodiversity by 2010, and since 2002 are committed to implementing the ecosystem approach to fisheries management, at least 'progressively' (CFP, Basic Regulation).

Yet, despite all the good words, a recent NGO review of the level of implementation of Natura 2000 in the marine environment showed insufficiencies in all Member States, and, with one exception, the level of implementation was poor to non-existent.

The designation of MPAs is one of very few measures for which Environment Ministries are responsible and have the mandate to take action without depending on other departments. The coalition of aforementioned NGOs maintains that this mandate will be strengthened through the integration of MPA provisions into the Marine Strategy Directive, pre-empting later opposition to the designation of MPAs during its implementation.

The NGOs thus welcome the European Parliament's amendments to the Directive, which would require Member States to explain in their regional marine strategies how existing MPA initiatives, such as Natura 2000, contribute to achieving GES.

* Saskia Richartz is EU Marine Policy Director at Greenpeace European Unit. The presented text is a summary of the Key Note Presentation, presented on behalf of the organisations mentioned in the first paragraph of the text. The opinions expressed in this paper are those of the author and organisations alone, and do not necessarily reflect those of BMU, BfN or IUCN.

As Member States are already under the obligation to designate MPAs, the coalition is surprised to see that the Council and seemingly the European Commission are opposed to the Parliament's amendments in this regard. It should be entirely acceptable to integrate existing initiatives under e.g. the Habitats and Birds Directives into the regional strategies.

In fact, ask any Member State whether they would consider it reasonable to submit a marine protection strategy that does NOT mention MPAs. The likely answer is that they could not consider a situation in which they would not mention MPAs in the regional strategies. The

question then is why they do not want to commit to doing it.

Moreover, just like the Habitats, Birds and the Water Framework Directives, the Marine Strategy Directive should include provisions that relate to the mechanisms of achieving GES. Protected areas are not the only, but a very important, conservation tool and therefore have their right place amongst the provisions of the Directive.

This was confirmed in June 2007, when several hundred European scientists published a consensus statement calling for the accelerated implementation of

fully protected marine areas in European waters.

(http://www.york.ac.uk/depts/eeem/gsp/mem/marine_reserves_consensus.pdf)

The aforementioned NGOs therefore maintain that the Marine Strategy Directive should create a link to the fact that areas must be legally and permanently set aside to safeguard unique features and the best examples of typical features, and to allow the restoration of degraded systems. The purpose of such sites would also be to act as undisturbed reference areas.

* * *

Marine Biodiversity and Conservation of the High Seas

*by Carl Gustaf Lundin**

Introduction

Conservation of the high seas requires an understanding of the geography, biological communities and human impacts to determine sustainable management strategies.

High Seas Areas and Geographic Features

Important geographic features of the high seas include seamounts, submarine canyons and deep sea trenches. The complex functions of these areas, and their contribution to biodiversity, should be considered in designing conservation programs.

To better comprehend the geographic features of the high seas, continued ocean exploration is necessary. Further exploration will be critical to developing knowledge of human induced and natural changes that affect marine biodiversity.

Open ocean seamounts have particular physical characteristics that influence ocean productivity. They are also important in managing sea ice, and providing unique habitats for diverse communities of species.

The main threat to seamount habitats is unregulated fishing on the high seas.

Biological Communities

The habitats of the open ocean (i.e., the "Pelagic Realm"), include the ocean corridors and migration patterns that are critical to the marine ecosystem.

Advanced technologies that allow marine tracking using satellite communications have helped identify regions that should be particularly monitored and protected.

The role of open ocean hotspots in marine ecosystems, include their importance in plankton productivity and con-

centration, and as zones for predator species. The interaction of these habitats with other ocean features should be analyzed in developing conservation strategies.

The deep seabeds are another set of important features of the high seas, including their abyssal plains, hydrothermal vents, cold seeps, and gas hydrate communities. There are extensive endemics and biodiversity in these areas with meiofauna and macrofauna, chemosynthetic habitats, chemosynthetic habitats, and gas hydrates biodiversity.

The value and prevalence of cold water corals and reefs include the associated sub-habitats, off-reef continental slopes, and coral rubble.

Sponge reefs and sponge fields are also important elements. The immense size and age that some sponge fields have obtained allow them to provide the habitat, hunting grounds and refuge for commercially important species.

Challenges

There are great challenges to high seas biodiversity. These particular include unsustainable fishing techniques, involving heavy by-catch, bottom trawling, over fishing, and illegal/unregulated fishing.

Climate change also presents a serious challenge to high seas biodiversity. This also combines with reductions in the ocean's effectiveness as a carbon sink to create an intensifying cycle.

Additional challenges to high seas biodiversity involve acidification, noise pollution, and submarine cables and pipelines.

The effects of bio-prospecting, manmade wastes and other hazards are also essential to address.

The interaction among various human impacts and the resulting acceleration of negative effects on ocean ecosystems also requires study.

Elements for Sustainable Management

Although many conventional approaches remain valid, conservation organizations must help develop innovative techniques for managing dynamic ocean systems.

Particular climate change management objectives include the development of more resilient management regimes, maintaining functioning ecosystems, and responding to changes in species and habitats. Dynamic conservation designations should also be considered in designing management programs.

Understanding migration patterns, monitoring needs, and other research leading to sustainable management systems will also lead to better ecosystem monitoring and management techniques.

A rational approach based on environmental assessment and risk minimization to determine improved control and enforcement measures will lead to improved accountability, transparency and participation.

The further implementation of the IUU action plan will serve the sustainable management objectives for the high seas.

In addition, organizations such as the IUCN play a key role in developing sustainable management programs.

Conclusion

With new knowledge, and further exploration, there are concepts for new ocean management rules and tools. New techniques should also serve the objective of effectively implementing existing rules.

* Carl Gustaf Lundin is Head of the IUCN Global Marine Programme. The presented text is a summary of the presentation he gave at the Background and Context session at the Opening of the Workshop. The opinions expressed in this paper are those of the author, and do not necessarily reflect those of BMU or BfN.

European countries must continue assume their central role in building “success stories”, particularly in respect of

external fisheries policy, RFMO reform, OSPAR identification of pilot protection sites, and other relevant marine conser-

vation and ecosystem management programs.

Features & Communities of the Seas



- Seamounts, submarine canyons, deep sea trenches
- The open ocean (e.g., ocean corridors, migration patterns), open ocean hotspots (also temporary: whale falls, fronts..), the mid-water column
- The deep seabed: abyssal plains, hydrothermal vents, cold seeps, gas hydrate communities
- Cold water corals, Sponge reefs and sponge fields
- Deep sea fish

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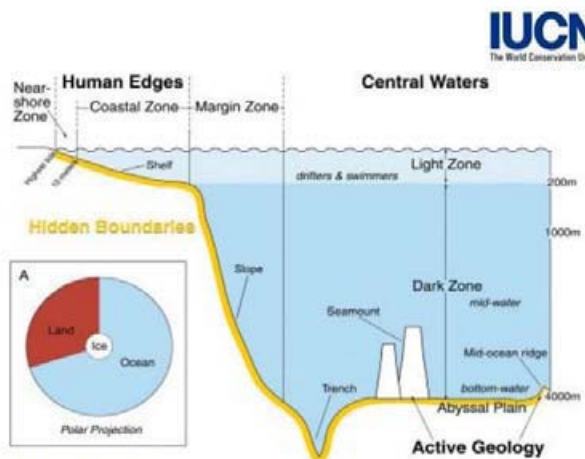
High seas areas are poorly studied

Ocean exploration: constantly creating knowledge!

(~50% of animals collected <3000m are new to science)

-> Improved understanding of high seas features, functions

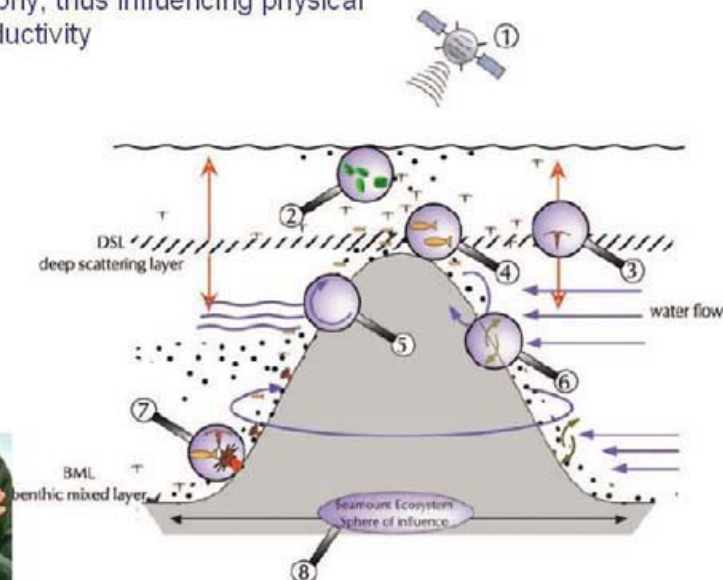
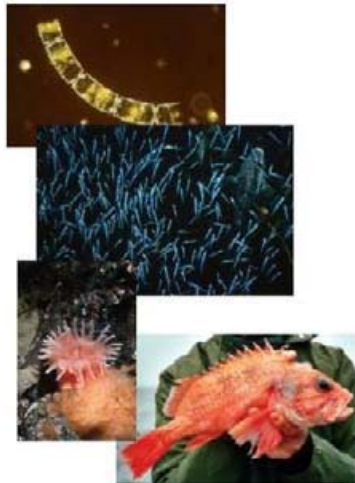
Also of human-induced & natural changes!



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Seamounts

are characterised by strong currents, exposed rocks and a complex topography, thus influencing physical oceanography and productivity



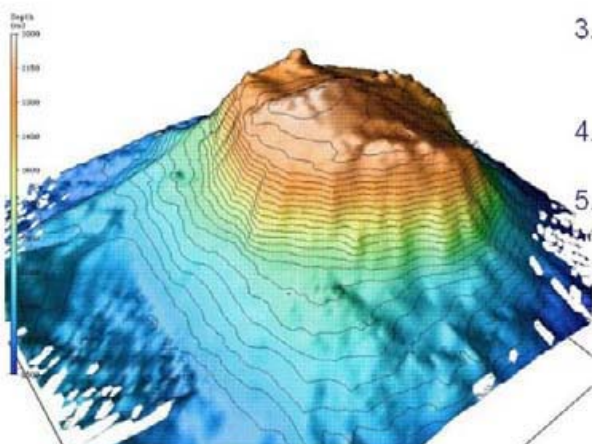
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- 50,000 in Pacific
100,000 in the world?
- ca. 54,000 Large
Seamounts in Int'l Waters



Seamounts

1. Seamounts are unique habitats and many are located on the high seas.
2. Seamounts harbour highly diverse communities of associated species.
3. They are important features, often biological hotspots & enhancing productivity.
4. In some cases a high proportion of these species are found nowhere else.
5. The main threat to these special deep-sea habitats is unregulated fishing on the high seas.



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The Pelagic Realm



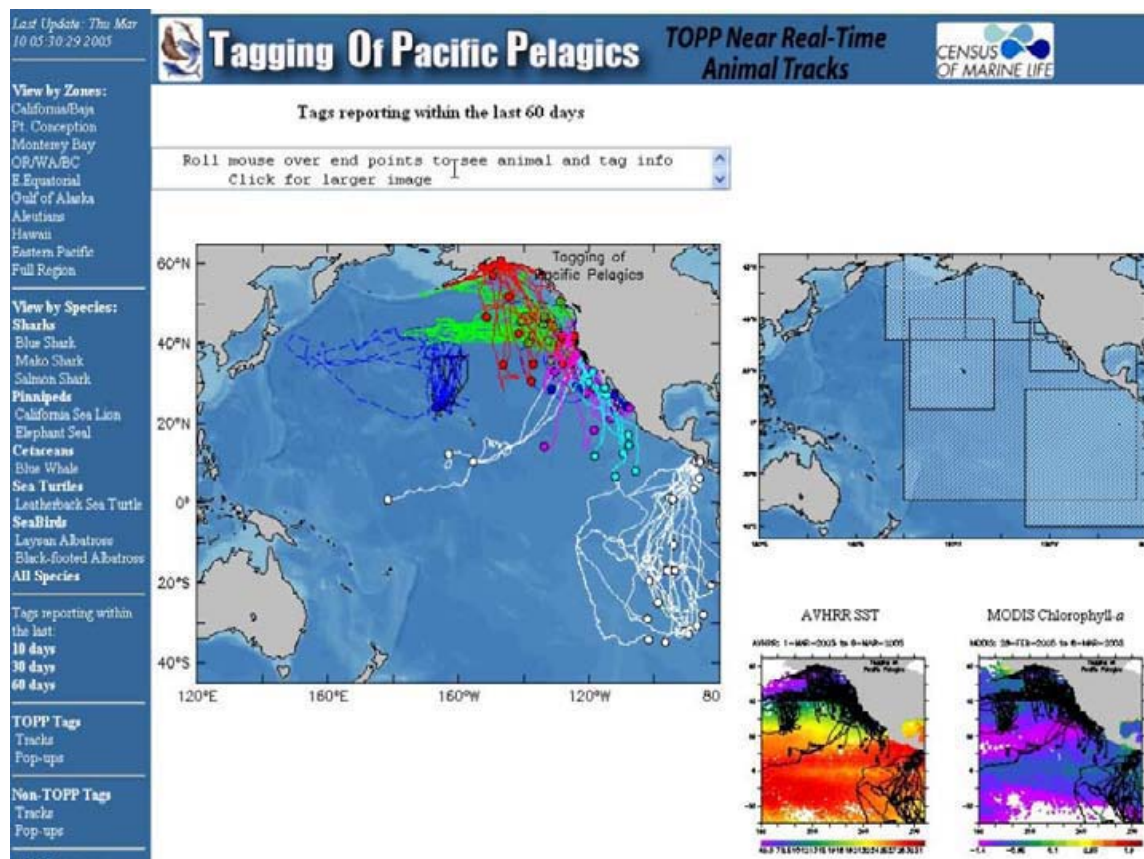
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Migration patterns: Ocean Corridors

- Bluefin tuna crossed Pacific 3x in 600days (ca. 1x around globe)



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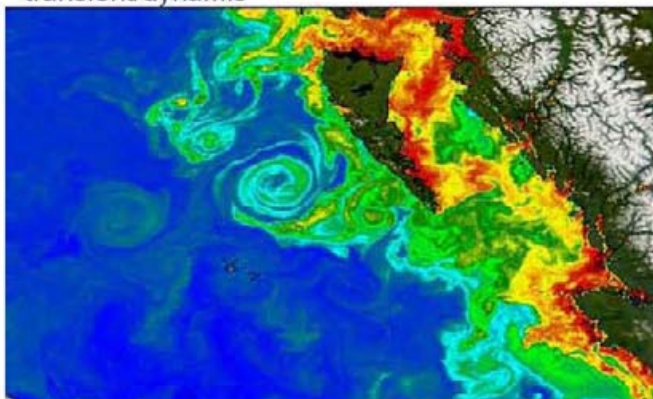


Oceanic hotspots

High Plankton Productivity/Concentration
 Convergence Zones for Predator Species?

Relation to submarine canyons, seamounts, shelf breaks

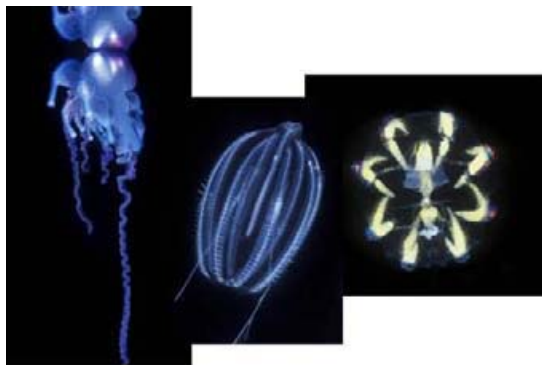
Eddies & Fronts of major current systems; fixed or transient/dynamic



IUCN
 The World Conservation Union



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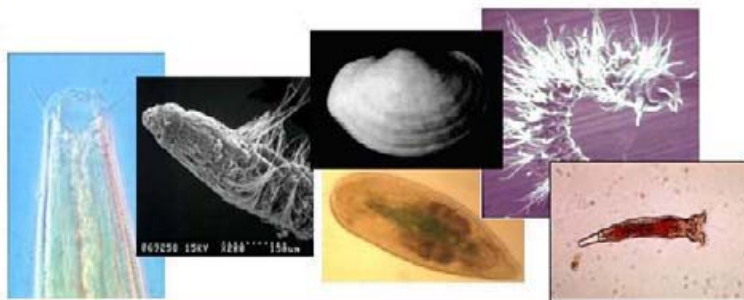
Midwater column: a mystery

Largely unknown;
just starting to be explored

Many delicate features: how
to sample and understand?

Seabed Meiofauna & Macrofauna

50,000 or 10 million
species or more?
400 species live mainly, or
exclusively, on whale
carcasses



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Chemosynthetic habitats



- 450 of 500 hydrothermal vent species are endemic
- 100+ hydrothermal vents known, most along mid-ocean ridges
- 95% of specialised fauna occur only in a single deep sea trench
- 200-300 species have been identified in association to cold seeps to date

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Gas Hydrates Biodiversity



Source: Allison, Gas Hydrate: Future Ocean Resource, United Nations Open-ended consultative Process on Law of the Sea, 2004 (PowerPoint presentation)

- Rich carbon environment
- Bacteria, mussels, clams, ice worms, crabs, etc.

- Ice worms provide oxygen
- Dig burrows inside the hydrates - dissolution?
- Little is known about them



Source: MacDonald et al., Stability and Change in Gulf of Mexico Chemosynthetic Communities, (PowerPoint presentation)

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Cold-Water Reefs



- There are documented cold coral reefs along the coast of 41 countries
- 2/3 of known coral species are from cold waters, but only 10 species build reefs
- Oldest known animal on earth is gold coral (*Gerardia*, 1800y)

Cold-Water Reefs - sub-habitats



Off reef continental slope



Coral rubble



Dead *Lophelia pertusa* framework

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Sponge Reefs & Fields

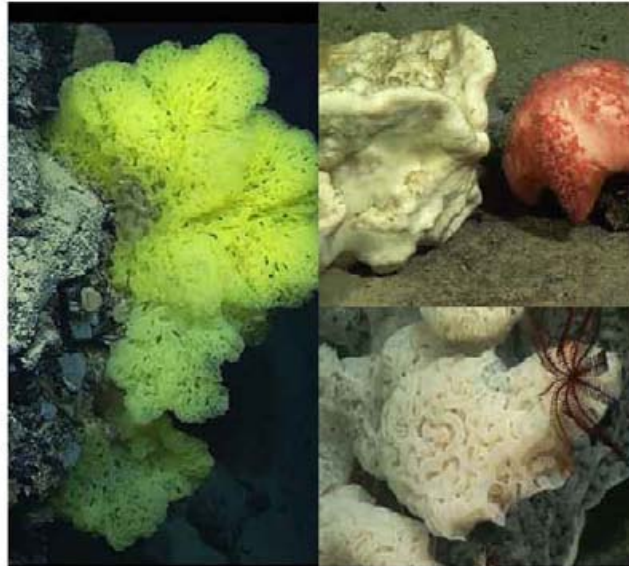


Can grow to immense size and age

Individuals 100+ years old

3d-seabed structures provide habitat, hunting ground & refuge

Also for commercially important species, diversity is doubled in many locations



The World Conservation Union – Global Marine Programme



Challenges To High Seas Biodiversity

- Unsustainable fishing techniques (bycatch, bottom trawling)
- Overfishing
- Illegal, unregulated and unreported fishing
- Climate change
- Noise pollution and shipping
- Submarine cables and pipelines
- Bioprospecting
- Solid and chemical wastes
- Many more....



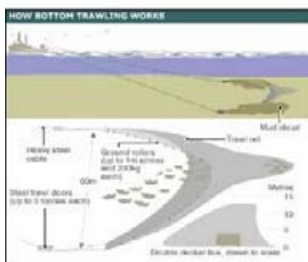
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Unregulated, uncoordinated
and/or poorly managed
activities



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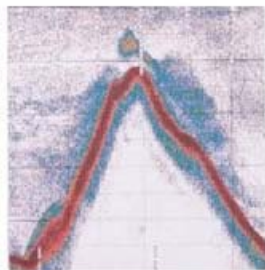
Seafloor off NW Australia after and before trawling



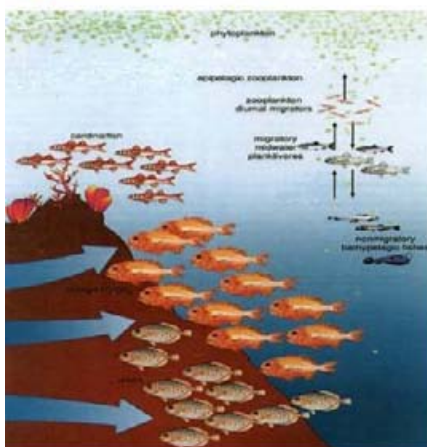
Unsustainable
Practices



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Seamounts as
targets for
fisheries



Shipping and
noise



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Sustainable Management of High Seas: Elements

- Integrated
- Ecosystem-Based
- Science-Based Decision-Making
- Apply Precautionary Principle
- Comprehensive Management Regime
 - Reform and Strengthen Regional Fisheries Bodies
 - Create Ocean Management and Governance Structures beyond Fisheries (see OSPAR Model)
- Environmental Assessment and Risk Minimization
- Area-Based Management, including MPAs
- Improved Control and Enforcement Measures
 - Strengthen and Implement IUU Action Plan
 - Develop Port State Control Agreement
 - Define and Enforce Flag State Duties
- Accountability, transparency, participation



Conclusions

- New Ocean Management Rules and Tools Need to Be Developed
- Effectively Implement Existing Rules
- Europe has a Central Role to Play
- Can Start Close to Home to Build Success Stories
 - e.g. External Fisheries Policy, RFMO Reform, OSPAR Identification of Pilot Protection Sites, Mediterranean High Seas MPAs, Policy-Relevant Research

Natura 2000 – State of implementation and next steps

by Plácido Hernández*

The current available statistics on sites designated by MS as Special Protected Areas under the 79/409 "Birds" Directive and sites proposed by MS as Sites of Community Importance under the 92/43 "Habitats" Directive were presented. These statistics are available on the webpage of the Commission (Natura 2000 barometer:

http://ec.europa.eu/environment/nature/nature_conservation/useful_info/barometer/index_en.htm)

The main conclusions from these statistics are that whilst a significant number of sites are designated in the marine area, nearly all of them relate to coastal areas. More than 1500 sites with a marine component lie in the first 12 miles, with less than 20 sites in offshore waters.

The Marine guidelines document elaborated by the European Commission with the support of a marine expert group from Member States and stakeholders was introduced. This group has been working with the Commission to "develop a common understanding of the provisions of Natura 2000 relating to the marine environment in order to facilitate the designation and future management of these areas". The Marine guidelines document should help the Member States to achieve

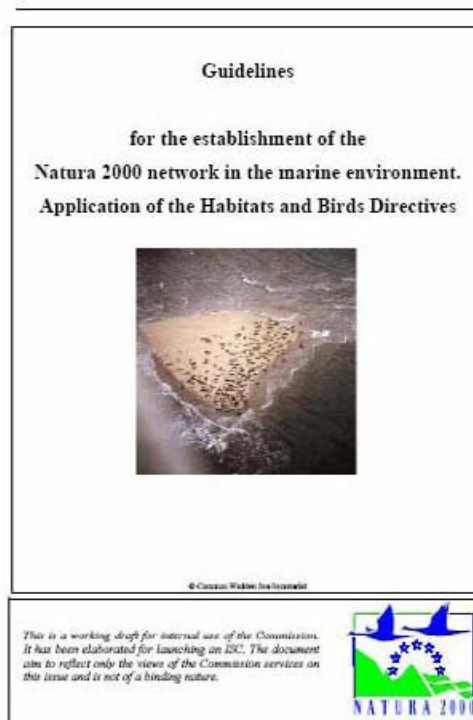
this important task and to provide useful reference material for other stakeholders. It will be of value to Commission services in considering any action in the field. It will also provide the major stakeholders with valuable information and more security for planning and development as the Commission opinion on several key aspects of the implementation of the Birds and Habitats Directives in the marine environment becomes more widely known.

The Marine Guidelines document and its annexes are available on the Commission's webpage:

http://ec.europa.eu/environment/nature/nature_conservation/natura_2000_network/marine_issues/index_en.htm

The need for Member States and the European Community was stressed to contribute to reach their commitment of halting biodiversity loss by 2010 with the full establishment of a well managed network of marine Natura 2000 protected areas. To this end, the next operational tasks to be carried out include:

- To update Community lists of Sites of Community Importance (SCIs) under the Habitats Directive, including existing proposals made by MS to the Commission.
- To complete the designation of Special Protected Areas (SPAs) under the Birds directive towards completing the marine network.
- For Member States to propose a sufficient network of Sites of Community Importance in accordance with 92/43 Habitats Directive requirements by mid-2008 at latest in order to complete the marine Natura 2000 network in the offshore environment and fill remaining gaps in coastal marine areas.



* Plácido Hernández is Policy Co-ordinator – Nature Conservation & Biodiversity at the European Commission, DG Environment. The presented paper is a summary of the presentation he gave at the Opening of the Workshop, in the Background and Context session. The opinions expressed in this paper are those of the author and do not necessarily reflect those of BMU, BfN or IUCN.

Presentations in Working Group 1

Environmentally Sound Fisheries Management in Protected Areas – The EMPAS project

by Christian Pusch*

In February 2006, the International Council for the Exploration of the Seas (ICES) and the German Federal Agency for Nature Conservation (BfN) started the research and development project “Environmentally Sound Fishery Management in Protected Areas (EMPAS)” aimed at developing fisheries management plans for each of ten MPAs designated under the Birds (SPA) and Habitats Directive (pSCI) Natura 2000 sites (MPAs) within the German EEZ of the North Sea and Baltic Sea (see Figure 1). EMPAS is funded by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) and is designed to serve as a pilot project to provide guidance on the management of fishing activities within Marine Protected Areas in the German EEZ.

According to the Biodiversity Strategy of the European Commission all EU Member States must complete their designations of marine Natura 2000 sites by 2008 and a coherent network of Natura

2000 MPAs has to be in place by 2010. EMPAS is seen as an important project from which ICES Member states may gain experience and knowledge, enabling them better to advise on responsible fisheries and to reach the goal of environmentally sound fisheries management within marine Natura 2000 sites.

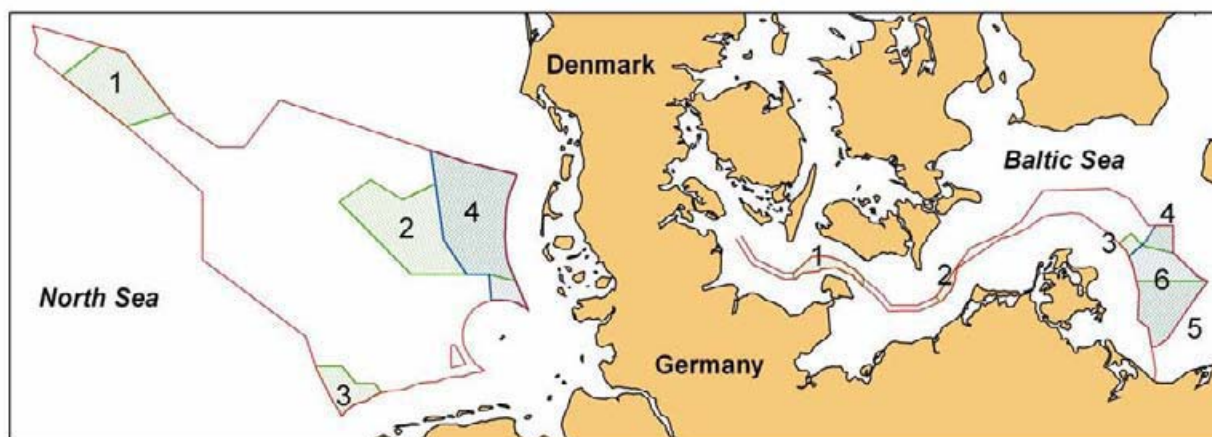
The project background can be summarized as follows:

1. Each EU Member Country is responsible for maintaining or, where appropriate restoring the habitats and species protected under the Habitats and Bird directives. One of the main instruments is the protection of the habitats and species in an ecological coherent network on land and at sea;
2. Fishing activities can have major impacts on habitats and species in the marine areas;
3. No data are available regarding the fine-scale spatial and temporal distribution of fishing effort in the German EEZ;

4. No data are available regarding the impacts of the fishing activities on species and habitats to be protected within Natura 2000 sites.

An environmentally sound fishery management is a common goal of the European Marine Strategy and the EU Common Fishery Policy. In ICES the national fisheries research institutes, as the authorities responsible for providing the catch data needed for fishery assessments, collate fisheries statistics and perform data sampling in cooperation with the fishing industry. The quality of a significant part of the data used in ICES fisheries advisory work relies on cooperation with the national authorities and the fishing industry. The EMPAS project will collect and analyse data and information about fisheries efforts and potential impacts on species and habitats in and around each German Natura 2000 MPA in cooperation with fishers/fisher

Figure 1: The ten nominated Natura 2000 sites in the German EEZ - four in the North Sea and six in the Baltic Sea.
North Sea: 1. – pSCI **Doggerbank**; 2. – pSCI **Sylt Outer Reef**; 3. – pSCI **Borkum Reef Ground**; 4. – SPA **Eastern German Bight**. **Baltic Sea:** 1. – pSCI **Fehmarn Belt**; 2. – pSCI **Kadet Trench**; 3. – pSCI **Western Rønne Bank**; 4. – pSCI **Adler Ground**; 5. – pSCI **Pommeranian Bay with Odra Bank**; 6. – SPA **Pommeranian Bay**. Both SPAs are implemented as national nature reserves and have been designated in the OSPAR/HELCOM MPA networks.
 For more information see: www.habitatmare.de.



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representatives, fishing ministries and research institutes.

The main tasks of the project are:

1. Documentation of the fine-scale spatial and temporal distribution of current and recent past fishing activities in and around the marine Natura 2000 sites in the Germany EEZ of the North and Baltic Sea;
2. Investigation of the effects of fishing activities on habitats and species;
3. Identification of possible conflicts between fisheries and nature conservation objectives/targets;
4. Development of fisheries management plans for each Natura 2000 MPA.

The project will run for three years with an annual workshop at the ICES secretariat. During the first year workshop the existing data and other relevant information were reviewed by the project participants and the project co-ordinator. Gaps in knowledge and requirements for additional information were identified.

The focus of the second year workshop will be the final assessment of fishing activities, as well as the assessment of potential conflicts between fisheries and nature conservation objectives/targets (see below).

The focus of the third year workshop will be: 1) the development and reconciliation of a management concept, and 2) development of proposed fisheries management plans for each Natura 2000 site in the German EEZ.

The first EMPAS workshop

The first workshop in the EMPAS project was held 3-5 April 2006 in Copenhagen at the ICES headquarters. To participate in the first project workshop, scientists from fisheries research institutes responsible for fisheries research, statistics and

data sampling within the German EEZ had to be nominated by their national ICES delegates. In addition key representatives from the fishing industries of Germany, the Netherlands, and Denmark were invited to participate in the workshop and present the industries' interests, data and fisheries information.

The first EMPAS workshop identified the need for detailed information about fishing activities in and around the ten designated Natura 2000 sites in the German EEZ, with fishing fleets and fisheries described for each country individually. Questions addressed included:

1. In which parts of the protected areas do the vessels commonly fish?
2. Which vessel types are deployed (e.g. size), and from which countries?
3. What gear types are used by the vessels?
4. How large is the fishing effort (for each gear type)?
5. When does the fishery take place (e.g. monthly distribution of fishing effort over the year)?
6. Which species and how much is caught by the fleets?
7. How consistent have the fisheries been in these areas in recent years, both in terms of effort and landings? Are there significant trends (increasing or declining)?
8. What are the bycatch rates of protected marine mammals and seabirds, as well as the bycatch rates of other species? Do they vary over season and/or area?

The second EMPAS workshop

The second EMPAS workshop was held 10-12. April 2007 in the ICES Headquarters with the following terms of reference (Chair: Dr. Jake Rice, Canada):

- a) Review and discuss results of analysing international fishing activities, fishing efforts in and around the ten designated Natura 2000 sites in the German EEZ.
- b) Review and discuss the objectives/targets for species and habitats in each of the ten Natura 2000 sites in the German EEZ. Specify possible operational objectives to be included in a fisheries management plan.
- c) From a) and b) identify potential conflicts between fisheries and nature conservation objectives in and around these sites.
- d) Develop monitoring strategies and guidelines to provide information about the key aspects of fisheries operations identified in a), progress towards conservation objectives in b), and potential conflicts in c).

The workshop showed progress in the documentation of the fine-scale distribution of fishing effort in the German EEZ of the North Sea and the Baltic Sea. Regarding the conservation of marine habitats, further analysis in the EMPAS project will be focused on the effects of bottom contacting gears on benthic species and communities. According to protected species listed by the EU-Habitat directive further research will be focused on the by-catch of harbour porpoises and seabirds in static gears. Additional disturbance of resting seabirds by fishing vessel and potential concurrence for food resources between fisheries and piscivore predators (seabirds, marine mammals) will be taken into account.

Workshop reports are available for public download from the EMPAS project webpage: <http://www.ices.dk/projects/empas.asp>.

Identification and Delineation of Natura 2000 sites in the German EEZ

by Jochen C. Krause, Dieter Boedeker, Kathrin Heinicke & Henning von Nordheim*

Summary of the presentation

In 1979, the EU Birds Directive (79/409/EEC) entered into force as a legal adaptation of the Ramsar Convention at European Community level. For the Conservation of wild birds, Member States have to classify their most suitable areas (in number of birds and size of habitat) as Special Protected Areas (SPA). These areas together with the Special Areas of Conservation (SAC), under the Habitat Directive (92/43/EEC), are to constitute a coherent ecological European network, known as "Natura 2000".

A decision of the London High Court in 1999, ruled that both Nature Directives were applicable in coastal waters and in the Exclusive Fishing Zone including the

Continental Shelf of the UK. This judgement set a precedent which Member States have decided to follow in their own EEZs (exclusive economic zones).

In 2006 the European Commission published a Communication committing to halting the loss of biodiversity by 2010 - and beyond, to accelerate efforts to finalise the terrestrial and marine Natura 2000 implementation process (COM (2006) 216 final).

Germany has taken these commitments seriously and nominated in 2004 a comprehensive set of ten marine Natura 2000 sites in the German EEZ of the North Sea and the Baltic Sea to the European Commission. The network covers in total 31.5 % or (10,407 km²) of the German EEZ (fig. 1 and fig. 2) all of

which were adopted to the community lists of sites of Community Importance (SCI) by the Habitats Committee in June 2007. Of these ten sites, eight were nominated according to the Habitats Directive, encompassing app. 2800 km² of sandbanks and 434 km² of reefs, and including important breeding grounds of an estimated 14,000 or more harbour porpoises. Two sites were nominated according to the Birds Directive protecting wintering and moulting grounds of several seabird species, i.e. divers (*Gavia spp.*), terns (*Sterna spp.*) auks and marine ducks (*Clangula sp.*, *Melanitta spp.*) in the North Sea and the Baltic Sea.

Difficulties and obstacles to select appropriate marine Natura 2000 sites cer-

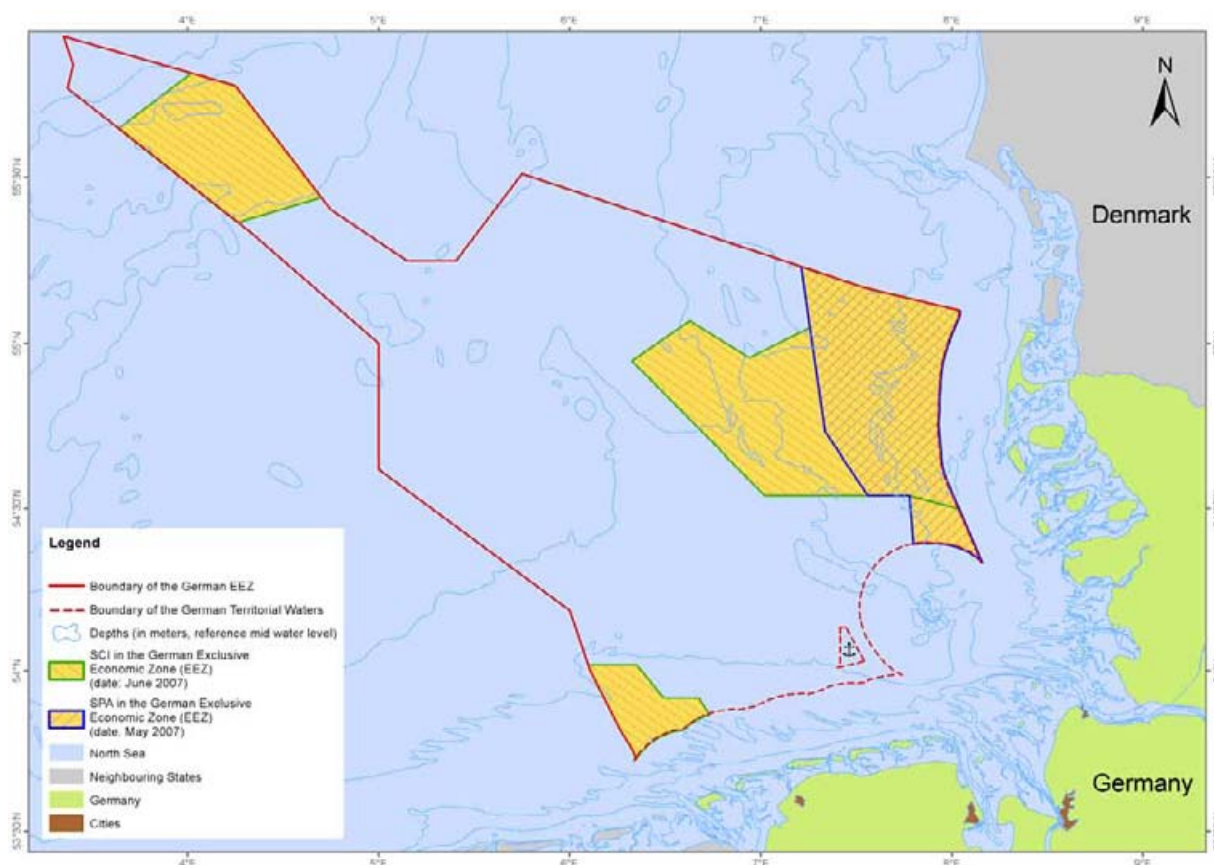


Figure 1:
The Natura 2000 sites in the German Exclusive Economic Zone of the North Sea (Atlantic Biogeographic Region)

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tainly exist; e.g., limited information of sea-bottom habitats and communities, and the costs of the necessary scientific research programs. However, the German Natura 2000 Network shows that it is possible to select and nominate sites in offshore waters which fulfil the required quality objectives. The experiences gained by this process are summarised in von Nordheim et al (2006). Additionally, a CD-ROM "Habitat Mare" and the internet page www.habitatmare.de provide background information in German and English about the scientific selection procedure.

In April 2007 the European Commission published Guidelines for the establishment of the Natura 2000 network in the marine environment (http://ec.europa.eu/environment/nature/nature_conservation/natura_2000_network/marine_issues/index_en.htm). The Guidelines were the result of several meetings of the "Marine Expert Group," an ad hoc working group established in 2003 under the Habitats Committee. The Guidelines introduce

marine issues and Natura 2000, within a broader context, explaining the habitat types and species requiring protection, and providing examples of several scientific and technical approaches for locating and selecting sites, as well as discussing possible management measures of these sites.

Thus, given that the criteria, the principles, and a considerable amount of scientific information on the environment of the North Sea and the Baltic Sea are already available, the selection and design of coherent marine Natura 2000 networks could be achieved in relatively short time. This is the necessary first step in European marine conservation.

However, conservation commitments of the EU Nature Directives contain some significant oversights, such as the missing protection of endangered marine soft bottom habitats and all fully marine fish species. For the Northeast Atlantic and the Baltic Sea, the OSPAR and the Helsinki Conventions have, respectively, been addressing some of these gaps

through the adoption of their lists of threatened and/or declining species and habitats and the commitment of the Ministerial Declaration in 2003 to build a network of well managed marine protected area in the Northeast Atlantic and the Baltic Sea by 2010.

There will be many details about marine ecosystems that we do not understand and presumably will not understand in the near future. However, the precautionary principle urges us to not allow these knowledge gaps to delay implementation of an MPA network. Furthermore, we have to keep in mind that the work does not end here, and that the next step, the establishment of sustainable management plans, could be an even bigger challenge.

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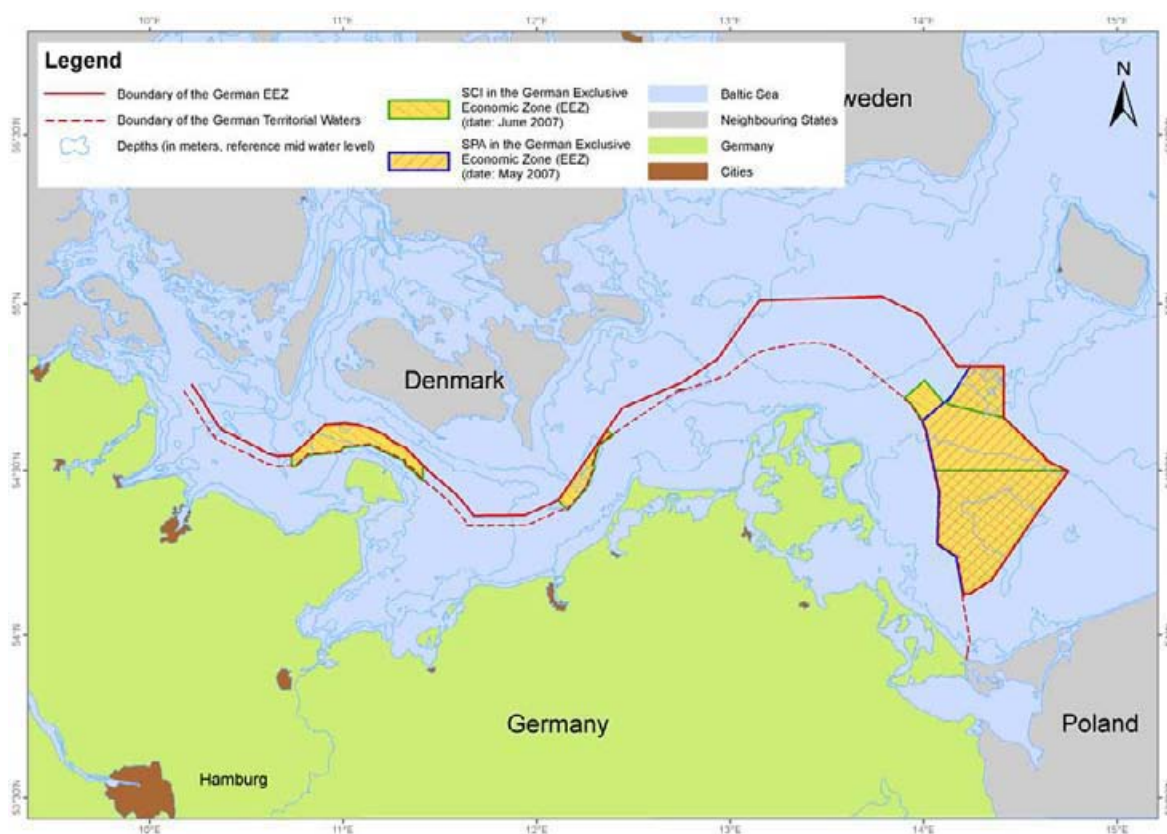


Figure 2:
The Natura 2000 sites in the German Exclusive Economic Zone of the Baltic Sea (Continental Biogeographic Region)

Presentations in Working Group 2

Protection of high seas biodiversity: Fisheries, MPAs, and suggested next steps

by Jeff Ardron^{*}

Introduction: fisheries and the need for high seas protection

Contrary to what we all might have thought, the high seas¹ are not pristine. Human activities have been affecting high seas species, habitats and ecosystems for many years. The first major human impacts probably date back to nineteenth century whaling. After nearshore cetacean populations had been extirpated, whaling extended further and further offshore to become a global phenomenon with deep ecological repercussions, as hundreds of thousands of these top predators were removed from the world's marine ecosystems (Estes et al 2006). Near the end of the twentieth century, the severe decline of species that live parts of their lives offshore and in the high seas (*straddling stocks*) became widely known through the tragic tales associated with Bluefin tuna (Safina 1993) and Atlantic cod (Kurlansky 1997; Myers et al 1997). Into the early twenty-first century, the crashes of often exclusively high seas fisheries began to be reported, such as with seamount fisheries (Watson & Morato 2004). As a backdrop to all of this is the continuing deterioration of most global fisheries, which has become the subject of several well-researched books aimed at engaging the public's attention (e.g. Kurlansky 1997; Pauly & Maclean 2002; Ellis 2003, Clover 2004; Roberts 2007). Additionally, there is increasing media coverage being given to reputable scientific publications that have tracked alarming composite global fisheries trends (e.g. Myers &

Worm 2003; Worm et al 2006). Thus, while fisheries experts may still debate analysis details (e.g. Science commentary 2007), there is growing public awareness that high seas biodiversity is in need of protection, particularly with regard to fisheries.²

Fisheries management in the high seas

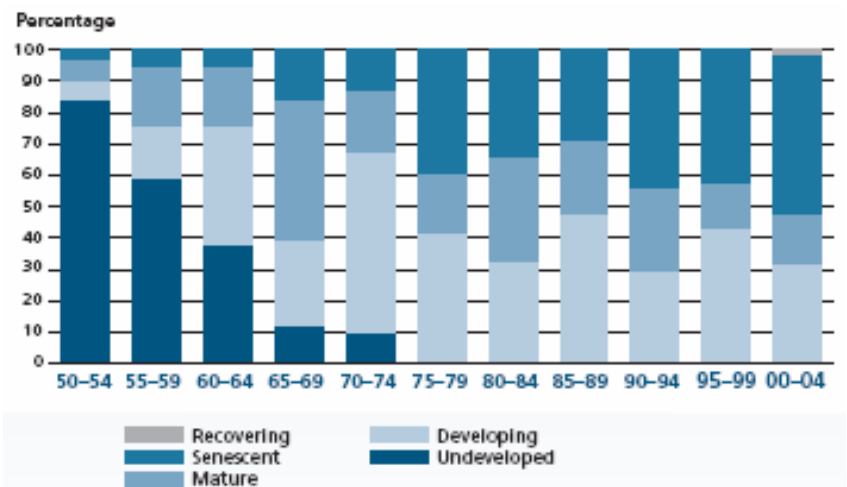
As nearshore stocks yield fewer fish, the percentage of fish caught on the high seas and deep seas continues to rise, such that deep seas fisheries³ are al-

tionary management considerations (Koslow 2007).⁴

From 21–23 November 2006, the UN Food and Agriculture Organization (FAO) held an experts' workshop on deep-sea fisheries in the high seas. The conclusions from that workshop were extensive, and a few key points are highlighted below:

"...many of the problems associated with the conservation and management of deep-sea fisheries are common to the management of coastal fisheries. Nevertheless [there are] four main characteris-

Figure 1: Percentage of oceanic deep-water fisheries resources in various phases of development, 1959-2004. Source: FAO 2006.



ready becoming over-fished ("senescent" in FAO language: Figure 1). At the same time, it is becoming known that many deep seas species grow more slowly and mature later than their continental shelf cousins, and thus require more precau-

tics that make the management of deep-sea fisheries on the high seas particularly problematic: the vulnerability of low productivity stocks, the vulnerability of the habitats, gaps in international legal regimes for the management of high-seas fisheries and insufficient coverage by Monitoring, Control and Surveillance systems." (FAO 2007, §10, underlining added)

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¹ In this paper, *high seas* shall mean all marine areas beyond national jurisdiction, including the sea bottom and the water column.

² There are of course other threats to high seas biodiversity, but fisheries are currently the biggest factor.

³ FAO reporting uses 200 m depth to delineate "deep seas" fisheries. However this depth includes also significant catches from continental shelf species. Thus, while FAO statistics show a general trend towards deeper fishing, the role of high seas stocks is still probably less than these statistics suggest.

⁴ It has even been suggested that many high seas fisheries might be intrinsically unsustainable, given the size of the vessels and the fuel necessary to travel these distances necessitates catches that are too large to be sustained by these slower growing species (Roberts 2007).

"The Expert Consultation recognised that even short-term deep-sea fishing can result in significant impacts on the target species, bycatch and habitats. This further highlights the need for urgent management action. In particular, experience in management of low productivity deep-sea fisheries has demonstrated that effective regulation is extremely difficult and traditional approaches to assessment and management may fail to prevent resource depletion and habitat destruction." (ibid, §11, underlining added)

Spatial and temporal management tools such as MPAs [...] are particularly useful in data-poor situations such as encountered in the deep seas... (ibid, §110e, underlining added)

To summarise, in the high seas conventional management options are generally more difficult to enforce, and marine protected areas (HS MPAs) could be particularly efficacious.

Selection of high seas marine protected areas

The principles for the selection of HS MPAs can in general be expected to follow the principles already well established for national waters. The OSPAR Convention's Maritime Area contains up to 40% high seas,⁵ and employs the following seven ecological criteria in the identification and initial prioritisation of potential MPAs, in both national waters and the high seas of the Northeast Atlantic:

1. Threatened and/or declining features
2. Important species and habitats/biotopes
3. Ecological significance
4. High natural biological diversity
5. Representativity
6. Sensitivity
7. Naturalness

(OSPAR 2003, Appendix 1)

⁵ This is the estimated area of the water column beyond national jurisdiction. Due to ongoing national claims of extended continental shelves, it is unclear how much of the seafloor will be beyond national jurisdiction (i.e. the "Area").

Additionally, after these primary ecological criteria have been applied, the OSPAR parties have agreed that the following secondary practical considerations can be used continue the prioritisation process, leading to the selection of the most suitable sites from amongst those that were initially identified:

1. Size
2. Potential for restoration
3. Degree of acceptance
4. Potential for success of management measures
5. Potential damage to the area by human activities
6. Scientific value

(ibid, Appendix 2)

Norse et al (2005) have pointed out that HS MPAs can initially be expected to protect two general classes of high seas features: fixed benthic formations such as seamounts, reefs, and hydrothermal vents; and variable pelagic formations such as convergences, upwellings and gyres. Mandatory satellite tracking of fishing vessels would make the protection of both types of features relatively straight-forward to monitor, and is already occurring with regard the closures of five seamounts and four cold water coral reefs in the Northeast Atlantic. The spatial protection of mobile, yet persistent, pelagic features that are important fish habitat has been generally thought to pose a greater challenge (Norse 2006) but is one that researchers are already beginning to address and demonstrate as being feasible, at least in some cases (e.g. Alpine & Hobday 2007).

Existing arrangements to protect high seas biodiversity

Formally designated HS MPAs are very few. It has been claimed that the Pelagos Sanctuary for Mediterranean Marine Mammals (formerly the International Ligurian Sea Cetacean Sanctuary) was the first; ratified through a formal agreement with France, Italy, and the Principality of Monaco in 1999, it entered into force in 2002 (IWC Conservation Committee

2007). Other kinds of spatially bounded regulations and arrangements have also been used to protect high seas biodiversity. These include some fisheries closures and restrictions enacted through regional fisheries management organisations (RFMOs), calls for precautionary closures by intergovernmental forums, and arrangements under the Antarctic Treaty. The Agreement Concerning the Shipwrecked Vessel RMS Titanic, while not intended to protect biodiversity, is an example of how individual states can choose to cooperatively protect a feature in the high seas.⁶

Five Next steps

For high seas biodiversity to be protected, there are some key steps that should be taken in the next 2-3 years. Five are listed below:

1. **Identify "vulnerable marine ecosystems"** in the high seas and determine whether bottom fishing activities would cause significant adverse impacts on these ecosystems. Further, if it is assessed that these activities would have significant adverse impacts, they should be managed to prevent such impacts, or not authorized to proceed. This wording is based on the UN General Assembly resolution 61/105, §§83 a-b (2006). It calls for this assessment to be completed by 2008 for those areas with RFMOs (regional fisheries management organisations) and by 2007 (§85) for those areas of the high seas that do not have RFMOs. This is clearly an ambitious undertaking and the non-RFMO areas in particular would benefit from international cooperation in which to take this work forward, perhaps in the form of an international experts' working group.
2. **Develop incentives / deterrents re high seas codes of conduct.** Some scientific bodies, such as Inter-ridge and the German Marine Consor-

⁶ A full summary of existing high seas spatial restrictions is the subject of another paper currently being drafted by the author, and is available upon request.

tium, have already developed codes of conduct for scientific research, which include the high seas. These examples should be followed and expanded. (E.g., OSPAR is currently drafting a scientific code of conduct for the deep and high seas of the Northeast Atlantic.) Such codes of conduct should be linked to funding requirements and permissions regarding high seas activities. Although an FAO code of conduct for responsible fisheries has existed since 1995, it has not been linked to fishing privileges or subsidies, and is largely ignored. Clearly, this needs to be addressed.

3. **Begin practising multi-sector decision-making – especially with fisheries and environment.**

Moving towards a (spatial) ecosystem-based approach in the high seas will take time and effort. The first step will be to better link single sector (or single species) management institutions, at the national, European, and international levels, such that spatial planning becomes based on multi-sector, multi-species considerations. However, multiple sector / species management is still not the same as ecosystem management. An ecosystem approach will ultimately require the development of overarching analyses (and likely institutions) that look at cumulative impacts – probable gains and losses – from prospective management actions. Nonetheless, building multi-sector communication and cooperative decision-making is the necessary first step. Bridging the traditional gap between fisheries management and environmental protection agencies would be a good place to begin.

4. **Work towards a common vision amongst Europe's existing high seas-related institutions.**

In international forums Europe has often found itself hampered in discussions and negotiations by conflicting internal positions. Europe's diffuse governance structures demand that

more work is done at home, if it wishes to be effective in the international arena. The dividend to this added "homework," however, should be more clearly reasoned and balanced high seas proposals. Europe's various bodies that are in some way connected to the high seas need to work more closely together both amongst themselves, and across sectors (see above), towards developing a common vision. This will require several intermediate steps along the way... Relevant European Regional Seas Organisations include the OSPAR and the Barcelona Conventions; RFMOs include the North East Atlantic Fisheries Commission and the General Fisheries Commission for the Mediterranean; European Commission Directorate Generals include DG Fisheries and Maritime Affairs, DG Environment, and DG External relations.

5. **De-link benefit-sharing from high seas protection discussions.**

Benefit-sharing of high seas resources, particularly deep sea genetic resources, is often politically linked to discussions of high seas conservation. However, this is really a separate topic that deserves its own discussion. Those working towards high seas protection of biodiversity already recognise the value of preserving genetic resources. While work is required on both fronts, linking the two together threatens to stall both. It should be pointed out that if high seas biodiversity is not adequately protected, then the benefits of these resources will fall to those who got there first. Thus, to be successful in the longer term, high seas benefit-sharing arrangements require the protection of high seas biodiversity; however, the opposite cannot be said to be true. In this light, instead of using blocking tactics in high seas conservation forums, those in favour of furthering benefit-sharing arrangements should be encouraged to see that it is mutually beneficial to assist processes protecting these re-

sources. Otherwise, all sides will lose out.

Three closing thoughts

- **The need to know vs. the need to act:**

In almost all decision-making, one must balance the need to know with the need to act. Put another way, this is accounting for scientific uncertainty, whilst also acknowledging the Precautionary Principle (that stipulates a lack of full scientific certainty should not postpone measures to avoid probable environmental threats). It is strongly suggested that enough is known to initiate high sea conservation actions. Indeed, more is known about high seas features than is commonly acknowledged. That said, there remains a pressing need to pull this disparate information together through global data integration.

- **Technology:**

High seas fishers have invested in the best available technology to locate and catch fish, such as satellite imaging, sea surface temperature, weather faxes, and floating GPS beacons. This same technology can also be used to identify areas that should be protected, and to communicate this to the fishers themselves.

- **Stalling:**

Stalling only benefits those who are breaking the rules, flying flags of convenience, and are otherwise unaccountable (i.e. illegal, unregulated, and unreported: IUU fishing). Allowing these "roving bandits" (Berkes et al 2006) to continue their practices is clearly harming high seas biodiversity, while in effect punishing those states and participants in high seas activities who do follow the rules, and believe in behaving responsibly and sustainably.

Acknowledgements

The author would like to thank Graeme Kelleher (recently retired, IUCN-WCPA High Seas Task Force Chair) for his years of service dedicated to conserving the marine environment.

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Roadmap to Recovery: A global network of marine reserves on the high seas *by Iris Menn, C. M. Roberts, L. Mason, J. P. Hawkins**

1. Introduction

Our Earth is an ocean planet. The sea covers nearly three quarters of its surface. Long ago, before tribes wrestled control of patches of land from one another, and before tribes gave way to nations, people were free to roam the world, taking what they needed where they found it. The land was a commons for use by all. Today, the land has long since been privatised and fenced, and few places remain where such freedom applies. But on the oceans – beyond the 200 nautical mile limits of national waters – the seas are still a global commons. The high seas, as these regions are known, cover 64% of the area of the oceans, and nearly half of the planet's surface. On the high seas, our freedom to exploit still takes precedence over our duty to protect.

Recent research shows that industrial fishing has reduced populations of large, predatory fish, like tunas and billfish, by ninety percent or more in the last fifty years (Myers and Worm 2003). Some particularly vulnerable species, like sharks, have been reduced by factors of a hundred, or even a thousand (Baum and Myers 2004).

The collapse of life in the high seas has led to calls for urgent action to reverse the decline, including the establishment of a global network of high seas marine protected areas (World Parks Congress Resolution 23, Gjerde 2003, Balmford et al. 2004). In this report we present plans for such a network. Our objective is to identify candidate sites for a representative network of marine reserves that would afford protection to the full spectrum of life on the high seas. The network of marine reserves we propose aims to protect places that are biologi-

cally rich, supporting outstanding concentrations of animals and plants. It also seeks to protect places that are particularly threatened or vulnerable to present or possible future human impacts, like fishing or seabed mining. Our overarching aim is for a network that is representative of the full variety of life in the sea.

2. Marine reserves – A powerful tool for the conservation of ocean wildlife

Marine reserves are places that are protected from all fishing and other extractive or harmful human uses, such as mining and drilling for oil (Roberts and Hawkins 2000). They are also protected from harm by other causes, so far as it is possible, such as pollution. Recreational boating, passage of shipping etc. are permitted up to levels that do not harm the environment. Marine reserve status does not interfere with the right of innocent passage embodied in the UN Law of the Sea. However, reserves may require additional restrictions on shipping where such areas are also designated as Particularly Sensitive Sea Areas.

Marine reserves are the most powerful tool available for the conservation of ocean wildlife and may also benefit fisheries by promoting recovery and reproduction of exploited species. The idea of marine reserves is not driven simply by the need to protect threatened species or habitats. It is based on an ecosystem approach with the overall aim to protect and restore the whole ecosystem.

3. Principles of marine reserve networking

A network (1) should be representative of the full range of biodiversity, (2) should replicate habitats in different marine reserves, (3) should be designed so

that populations in different marine reserves can interact and be mutually supporting, (4) should be sufficiently large to ensure long-term persistence of species, habitats, ecological processes and services, and (5) should be based on the best available scientific, local and traditional information (Roberts, Gell and Hawkins 2003).

The World Parks Congress in 2003 recommended that at least 20-30% of all marine habitats should be included in networks of marine reserves (World Parks Congress Recommendation 22, 2003). There are good scientific arguments for taking an even more precautionary approach, since higher levels of protection can be required to maintain the integrity of marine ecosystem processes (Gell & Roberts 2003).

In this report, we have adopted the goal of protecting 40% of all habitats and biogeographic zones on the high seas. We also set a series of subsidiary targets for inclusion of places identified as important for different species groups.

4. Identifying candidate sites for protection

To identify candidate sites for a global network of high seas marine reserves, we brought together many different kinds of biological, physical and oceanographic data. Data on oceanographic features like water temperature gradients and upwelling areas, together with fishery and tracking data on oceanic megafauna, enabled us to identify places that are hotspots of activity on the high seas for large-bodied and vulnerable species. To ensure that our network is representative, we used data on the distribution of different biogeographic areas, depth zones, seabed sediment types and

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The opinions expressed in this paper are those of the authors, and do not necessarily reflect those of BMU, BfN or IUCN.

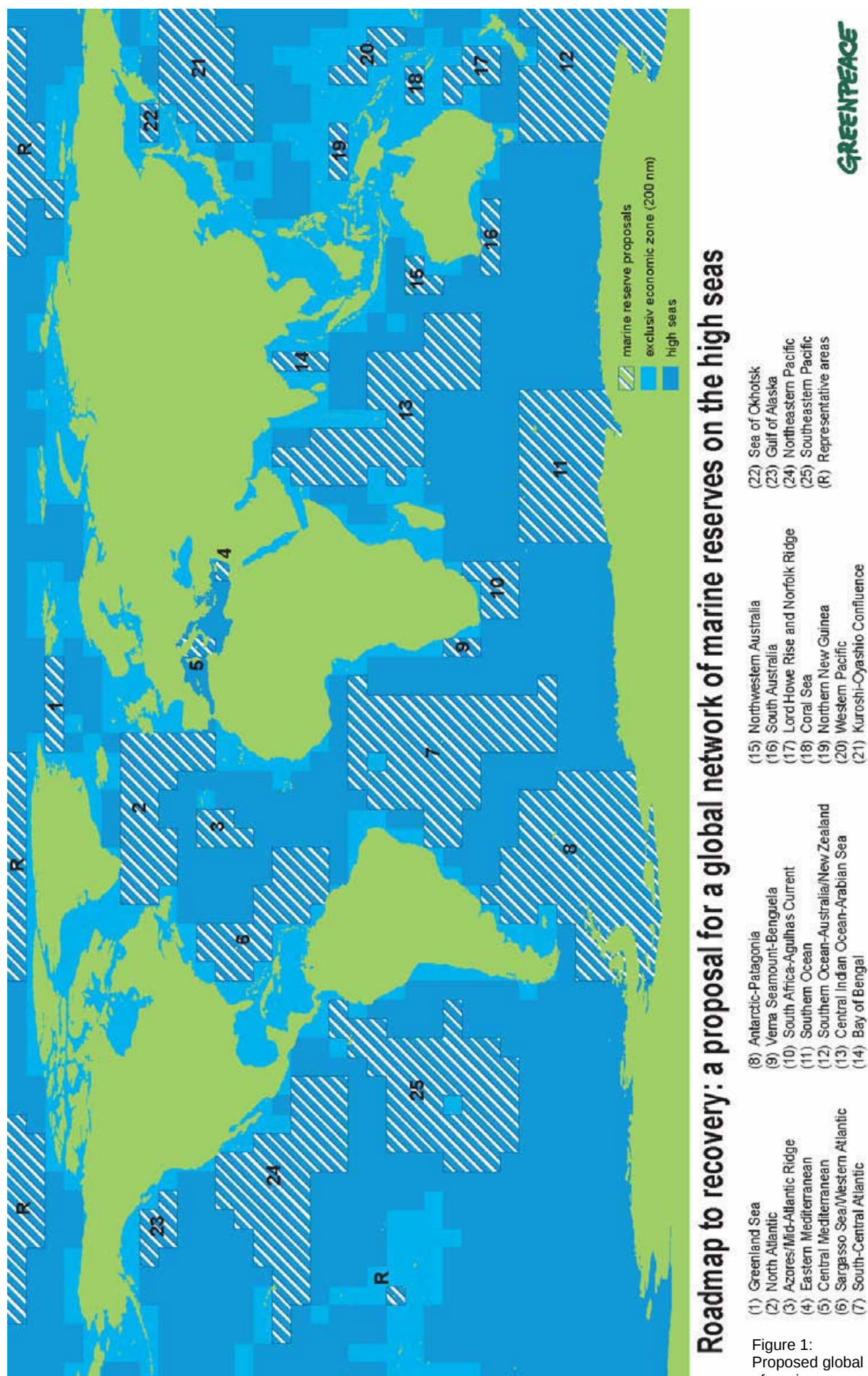


Figure 1:
Proposed global network
of marine reserves

ocean trenches to represent the variety of habitats and their variation across the globe. We paid particular attention to highly sensitive deepwater habitats, using maps of seamount distribution and bathymetry to identify places vulnerable to harm by bottom fishing. We also used bathymetric data to calculate seabed complexity, which helps in identifying biologically rich places in the deep sea. Full details of data layers and the reasons for the grid are given in Roberts, Mason and Hawkins (2006).

In addition to this data gathering approach we consulted with experts in marine science and management, requesting them to nominate sites they believe should be afforded protection. We also requested they provided justification for their choice and send us supporting documentation, if any was available.

5. Procedure used for computer-assisted design of a network of marine reserves

We used the computer program *Marxan* to help develop network designs. *Marxan* is the most widely used computer program for designing networks of marine reserves

(www.ecology.uq.edu.au/marxan.html)

and has been instrumental in rezoning the Great Barrier Reef Marine Park in Australia and the California Channel Islands National Marine Sanctuary in the United States (Airame et al. 2003).

Marxan works by selecting sites for protection to create networks that meet user-defined conservation targets.

The aims of our network design process was to select sites that will protect the richest and most vulnerable concentrations of high seas marine life, represent the full spectrum of high seas biodiversity, represent all habitat types in different marine reserves, and include forty percent of the high seas in marine reserves. Full details of targets set for the design see Roberts, Mason and Hawkins (2006).

6. Design of a network of high seas marine reserves

Figure 1 shows the final design of the candidate network of marine reserves. It covers 40.8% of the global oceans and includes twenty-nine separate candidate reserves. These cover every ocean and include representatives of all twelve ocean biogeographic zones. The network met all of the targets we set and is representative of biodiversity on the high seas. All the marine reserves identified incorporate places that are biologically important based on available data. However, their boundaries may be refined as more data become available.

7. Implementing the network

It is our view that this network of marine reserves is essential to safeguard life on the high seas for the sake of our own and future generations. Implementing the network represents a challenge to the will and cooperative spirit of the world's nations. But time is short as the scale and severity of harm are growing day by day.

The world's governments have already committed to admirable targets regarding biodiversity and oceans protection, but the current rate of progress is simply not going to deliver what they agreed (MPA News, 2005). Besides that there is currently no mechanism under the existing international framework provided by the United Nations Convention on the Law of the Sea (UNCLOS) and the Convention on Biological Diversity (CBD) for implementing marine reserves on the high seas.

It is Greenpeace's view that in order to implement the CBD commitment and provide the necessary mandate to establish and manage marine reserves on the high seas, a new implementing agreement under UNCLOS is required. Such an implementing agreement would not require any amendment to the text of the Convention and would be consistent with article 22 (2) of the CBD which already obliges parties to implement the convention "with respect to the marine environ-

ment consistently with the rights and obligations of States under the Law of the Sea". The agreement would provide formal recognition of the need to protect biodiversity on the high seas, and a mandate to protect high seas areas for conservation purposes. Such an implementing agreement could be modelled on the UN Fish Stocks Agreement – which was itself negotiated in order to implement some of the Articles of UNCLOS, and could be used to address a number of gaps in the current governance of high seas biodiversity in addition to those relating to the establishment of high seas marine reserves.

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Presentation at Side Event

The Marine Strategy Directive should consider the EU overseas dimension – Position paper

by Erik van Zadelhoff and Jean-Philippe Palasi*

The European Union overseas dimension is composed of 27 different entities on all oceans. Seven are **Outermost Regions (ORs)**, which are an integral part of the European Union, and 20 are **Overseas Countries and Territories (OCTs)** that benefit from a system of close association with the EU (2001 Council 'Overseas Association Decision'). The Member States involved are France, the United Kingdom, Spain, Portugal, Denmark and The Netherlands. The map shows the geographical distribution of the 27 ORs and OCTs.

The European ORs and OCTs are home to biodiversity of world-wide importance, vastly superior to that of continental Europe as a whole. The number of endemic plant and animal species in New Caledonia alone, is comparable to that of the whole of the mainland of Europe. Other ORs and OCTs also hold a vast number species that can be found nowhere else.

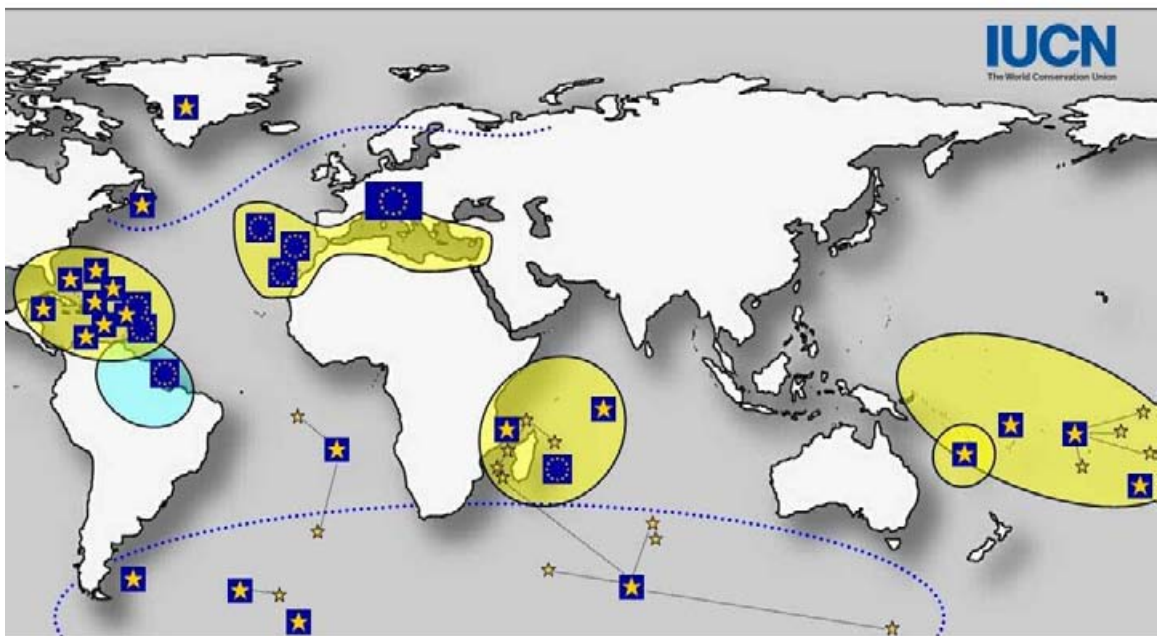
Due to the scattered character of the ORs and OCTs and their presence in the tropical parts of the world's oceans, and sub-polar regions, the biodiversity of the marine environment of the ORs and OCTs is extremely rich. A significant part

of the world's coral reefs can be found in their huge territorial waters. The table below shows, that the ORs and OCTs of France rank fourth in the world in terms of the area of coral reefs and those of the UK rank 5th. Combined, the ORs and OCTs hold the third place in the world.

The rich environment of the ORs and OCTs is under threat. The combined

European policy in this field. This was done at local level, national level in the 6 concerned member states, and towards European institutions.

The response of the authorities has been quite positive. The need to take concrete steps to improve this situation was recognised by both NGOs and authorities at the IUCN World Conservation Congress (WCC) in Bangkok (November 2004).



Azores • Canary Islands • French Guiana • Guadeloupe • Madeira • Martinique • Reunion Island • Anguilla • Aruba • British Antarctic Territory (BAT) • British Indian Ocean Territory (BIOT) • British Virgin Islands • Cayman Islands • Falkland Islands (Islas Malvinas) • French Polynesia • French Southern and Antarctic Lands (TAAF) • Greenland • Mayotte • Montserrat • Netherlands Antilles • New Caledonia • Pitcairn • Saint Helena, Tristan da Cunha, Ascension Island • Saint-Pierre-et-Miquelon • South Georgia and the South Sandwich Islands • Turks and Caicos Islands • Wallis & Futuna

effects of climate change and biodiversity loss are expected to have a growing impact on island people, cultures and economies. Over the past decade, NGOs have been trying to raise awareness of the importance of the biodiversity of these ORs and OCTs and to stress the need for effective and coordinated

The WCC adopted a resolution to strengthen European Policy on Biodiversity in the Outermost Regions and Overseas Countries and Territories (Resolution 3.005).

The participants of the conference 'Biodiversity in Development cooperation' in Paris 2006 (among which many from the

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The opinions expressed in this paper are those of the authors, and do not necessarily reflect those of BMU or BfN.

	Country and geographical locations	% of world reefs
1.	Republic of Indonesia	17.95%
2.	Australia	17.22%
3.	Republic of the Philippines	8.81%
4.	France including: Clipperton, Mayotte, Réunion, Guadeloupe, Martinique, New Caledonia, French Polynesia, Wallis and Futuna Islands	5.28%
5.	United Kingdom including: British Indian Ocean Territory, Anguilla, Bermuda, Cayman Islands, Pitcairn, Turks and Caicos Islands, British Virgin Islands	3.91%
6.	Netherlands including: Netherlands Antilles and Aruba	0.17%
	ORs and OCTs total	9.36%

Source: Sea Around Us website

ORs and OCTs) concluded that the Recognition of biodiversity in Overseas Countries and Territories is one of the main challenges in this field. Challenge 4 of the Message from Paris states:

"The EU should develop a coherent framework for environment in OCTs to promote sustainable management of their important biodiversity areas, and also encourage joint efforts with Outermost Regions including adequate funding mechanisms". The Message from Paris was adopted by the European council in december 2006.

The environment was also high on the agenda of the OCT-2006 ministerial conference (Nuuk , Greenland). In the politi-

cal resolution from Nuuk, OCT authorities ask the EU:

- A new dynamic partnership OCTs-EU
- Greater participation of the OCTs in the definition of EU strategies
- A strategy for the environment in the OCTs by 2011
- Implementation through a tri-lateral action plan
- Particular account of climate change impact
- Set out an EU-OCT vision for the oceans and the sea

Given the huge importance of the Marine environment in the ORs and OCTs and

the interest of OCT and OR authorities for these issues, the new Maritime Strategy Directive could be of great importance for the EU overseas dimension. For the OCTs, it sets an example for their own strategy and potential reinforced cooperation with the EU. In the French ORs, it could be directly implemented. For the moment the only reference in the Council text is that OCTs and French ORs are excluded from the Marine Strategy Directive. A more open and ambitious approach is needed.



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Closing Statement

by *Emanuel Gonçalves**

Welcome

Mr. Chairman, Distinguished colleagues,
Ladies and Gentlemen,

Portugal wishes to express its deep appreciation to the German Government and to the IUCN for promoting and hosting this workshop and for their extremely friendly welcome to all of us. We would also like to take this opportunity to highlight the great value of expert workshops, as they have proved to be excellent opportunities for exchanging views, sharing best practices and proposing recommendations. These recommendations have often lead the way to improvements, namely in marine environment policy, at the EU level and international fora.

On the 22nd of May of 2006, by the occasion of the International Day for Biodiversity, Portugal signed the Countdown 2010 Declaration in which it committed itself to work actively to achieve the 2010 target with concrete actions that contribute, among others, to the implementation of Natura 2000 network in the marine environment and to the improvement of Oceans governance at a global level.

Ecological networks of protected areas are widely recognized as an important tool to achieve both conservation and sustainable use of biodiversity in land. Criteria to designate terrestrial protected areas, the implementation of management plans and monitoring tools are nowadays well established and consolidated.

Natura 2000 is a good example of this. However only recently we started to evaluate how to fulfil a remaining gap: its implementation on the marine areas under the jurisdiction of EU member states. This process, which is now in progress, will contribute significantly to the achievement of the wider objective of

establishing representative networks of marine protected areas by the year 2012.

Portugal is particularly conscious of the importance, challenges, and opportunities involved, but also of the complexity and difficulty of this task, as we have the largest marine area in the European context.

As we said, this is a complex process, mainly due to the wide range of human activities that must be taken into consideration in the management of marine biodiversity, legal issues, insufficiency of technical and scientific information, and the difficulty in coordinating the different bodies with competencies in the marine environment.

The future EU maritime policy envisioned in the Green Paper and the Marine Strategy Directive will be important steps, not only to support the implementation of Natura 2000 in the Ocean, but also to promote "the holistic approach" on the conservation and sustainable use of marine biodiversity.

During the upcoming Portuguese presidency we will commit to endorse the main results of this workshop and to continue to work together with our colleagues from Germany, Slovenia, other member states and the Commission towards the process of improving ocean governance namely through the designation of a representative network of marine protected areas.

In this context, we would like to stress some key topics that we consider to be relevant in guiding current and future actions:

Firstly, the need for integration of biodiversity issues in relevant human activities such as fisheries and other extractive uses, maritime transports, energy, climate change mitigation measures, and

land based influences. An effective environmental policy for the protection of the marine environment, inter alia through from the implementation of the EU marine strategy, is the key issue for the sustainability of all maritime activities.

Secondly, the coordinated implementation of policies and legislation such as the Birds and Habitats Directives, the Natura 2000, the Water Framework Directive, the Marine Strategy Directive, the Integrated Coastal Zone Management, the Common Fisheries Policy, the IMO and the Regional Seas Conventions must be met. In this perspective marine spatial planning must be implemented, meaning that the ocean, its biodiversity, the human activities and the goods and services provided by marine ecosystems are integrated in a sustainable development framework.

Marine protected areas are a tool to achieve these goals and we should learn from ongoing processes and coordinate them with Natura 2000. OSPAR is an example of a regional process of relevance for the Natura 2000 process. The first offshore sites on the Portuguese EEZ to be proposed for inclusion in the Natura 2000 are the OSPAR protected areas Lucky Strike and Menez Gwen hydrothermal vents.

Thirdly the opportunities given by the Financial Perspectives 2007-2013 should be use to further advance and complete the identification, designation and definition of management schemes of marine Sites of Community Importance and Special Protected Areas. LIFE plus (for which recently an agreement was reached between the European Parliament and the Council) will directly co-finance biodiversity projects being a central instrument to fill scientific gaps, and to further the identification and designation phases of the process.

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The Common Fisheries Policy should also contribute to the management of marine Sites of Community Importance and Special Protected Areas and species and habitats of community interest. It is urgent however to clarify the relationship between fisheries policy and biodiversity policy in the EU, and to promote the mainstreaming of biodiversity in the EU fisheries policy.

Finally, as a contribution to the wider objective of establishing representative networks of marine protected areas by the year 2012, the proposed UNCLOS Implementing Agreement on marine biodiversity conservation in areas beyond national jurisdiction could be a central instrument not only for the designation of high seas MPAs but also for the overall governance of Ocean.

Portugal is committed to contribute to the above mentioned goals and will be involved in the following events:

- A Conference on Maritime Policy and Globalization in the Azores in July (9-10) which is a joint initiative of the CRPM and the Azores Regional Government;
- A workshop on Maritime Governance in the EU context in Lisboa also in July (19-20 July) organized with the Commission Task Force for Maritime Affairs;
- A CBD Expert Workshop on Ecological Criteria and Biogeographic Classification Systems for Marine Protected Areas in Areas Beyond National Jurisdiction, in the Azores in October (2-4) which will inform SBSTTA 13 and UNGA;

- A high level ministerial conference, also in October in Lisbon, where the results of the Green Paper consultation process will be presented by the Commission and the following steps will be agreed upon.
- Finally in November (12-13) a conference on "Business and Biodiversity" will take place in Lisbon.

To conclude, the commitment we imposed to ourselves during the Portuguese presidency is to work hard on these matters at the EU level and in international fora, with the firm conviction that only with joint forces and a spirit of cooperation in every task aiming towards the improvement of marine governance and conservation it will be possible to achieve our common objectives.

Thank you, Mr. Chairman.

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**BACKGROUND PAPERS
FOR DISCUSSIONS
AT THE WORKSHOP**

List of Acronyms

used in the Workshop Background Papers

ABNJ	Areas Beyond National Jurisdiction
BALANCE	Baltic Sea Management – Nature Conservation and Sustainable Development of the Ecosystem through Spatial Planning
BarCon	Barcelona Convention for the Mediterranean Regional Seas Program
BfN	German Federal Agency for Nature Conservation
CBD	Convention on Biological Diversity
CFP	Common Fisheries Policy
COR	Committee of the Regions
CPA	Political Agreement of the European Commission (December 2006)
DG	Directorate General
DOALOS	United Nation's Division for Ocean Affairs and Law of the Sea
EC	European Community
EEC	European Economic Community
EEZ	Exclusive Economic Zone
EFF	European Fisheries Fund
ERDF	European Regional Development Fund
EU	European Union
FAO	UN Food and Agriculture Organization
GFCM	General Fisheries Commission for the Mediterranean
GIS	Geographic Information System
HELCOM	Helsinki Commission
HERMES	Hotspot Ecosystem Research on the Margins of European Seas
HSMFA	High Seas Marine Protected Areas
ICES	International Council for the Exploration of the Seas
ILO	International Labour Organisation
IMO	International Maritime Organization
INSPIRE	Directive on Infrastructure for Spatial Information in Europe
IOC	Intergovernmental Oceanographic Commission
ISA	International Seabed Authority
IUCN	World Conservation Union
IUU	Illegal, Unregulated and Unreported
MESH	Mapping European Seabed Habitats
MINOS	Marine mammals and Birds in the North and Baltic Seas
MPAs	Marine Protected Areas
MSD	Marine Strategy Directive
NAFO	Northwest Atlantic Fisheries Organization
NEAFC	Northeast Atlantic Fisheries Management Commission
NGOs	Non-governmental organizations
OSPAR	Convention for Protection of the Marine Environment in the Northeast Atlantic
RFMO	Regional Fisheries Management Organization
RMO	Regional Management Organizations
ROMO	Regional Oceans Management Organizations
SAC	Special Areas of Conservation
SCAR	Scientific Committee on Antarctic Research
SCI	Sites of Community Importance
SEAFO	Southeast Atlantic Fisheries Organization
SPA	Special Protection Areas
SPREP	Noumea Agreement for the South Pacific Regional Environmental Program

UNCLOS	United Nations Convention on the Law of the Sea
UNEP	United Nations Environment Programme
UNESCO	UN Educational, Scientific and Cultural Organization
UNFSA	United Nations Fish Stocks Agreement
UNGA	United Nations General Assembly
UNICPOLOS	United Nations Open-ended Informal Consultative Process on Oceans and Law of the Sea
WCMC	World Conservation Monitoring Centre
WCPFC	Western Central Pacific Fisheries Commission
WGBU	German Advisory Council on Climate Change
WSSD	World Summit on Sustainable Development

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Executive Summary^{*}

of the Background Papers

Natura 2000

Council Directive 79/409/EEC on the Conservation of Wild Birds (the Birds Directive) and Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive) are the main legal instruments for the protection of nature and biodiversity within the EU. Both include requirements to establish protected areas on land and at sea which will make up the 'Natura 2000' network.

The Habitats Directive and Birds Directive set out legal requirements for the implementation of *Natura 2000* however other targets agreed by the EU also support and will help deliver *Natura 2000* in the marine environment. They include the agreements made at the Gothenburg Summit in 2001 and by the Environment Council of the European Commission in 2002. These targets and timetables sit alongside international commitments such as those agreed in the Convention on Biological Diversity which will also help establish and manage the *Natura 2000* network.

In comparison with the activities for terrestrial sites, identification and nomination of marine sites is considerably behind schedule however, there has been progress towards the implementation of *Natura 2000* in the marine environment over the last decade. The Habitats Directive has been transposed into national law, existing data on seabed morphology, habitats and the distribution of marine species have been collated and scientific studies carried out to analyse and assess these data to underpin the identification and delimitation of sites. Management schemes are being developed by government agencies, competent authorities and other interested parties, and stakeholders are being drawn in to play an active part in the process. Cases

brought to the European Court of Justice are also providing further clarification on implementation of the Directive.

Key tasks and opportunities in relation to scientific knowledge, developing a legal framework, stakeholder involvement, financing and management, especially in relation to fisheries are highlighted in Section 3 of this paper and Section 4 presents two case studies. The first illustrates the steps undertaken to nominate a comprehensive set of *Natura 2000* sites in the offshore environment and the second describes how fisheries management issues have been tackled in a marine *Natura 2000* site.

For the immediate future the review carried out in this paper suggest the following priority tasks in terms of designation, regulation and management in the marine area of each member state.

Natura 2000 – Designation

- Complete identification and nomination of marine sites where the greatest gap at present is the offshore (EEZ) area
- Carry out first assessments of ecological coherence of the marine *Natura 2000* network and nominate any further sites required to achieve this.
- Continue to link the designation process with other initiatives/measures (e.g. OSPAR/HELCOM) especially in relation to building a network and complementarity, and to avoid duplication of effort

Natura 2000 – Regulation

- Achieve clarity over the legal precedence for the management of all potential deteriorations and disturbances in *Natura 2000* sites

- Establish which regulatory measures can be used for the pro-active management of fisheries for nature conservation purposes (i.e. on the basis of threat rather than actual damage)

Natura 2000 – Management

- Increase efforts and focus on delivery on the ground i.e. effective management to achieve conservation objectives
- Continue research to provide a sound scientific underpinning to the management of *Natura 2000* sites
- Ensure stakeholder involvement for effective delivery of the objectives of *Natura 2000* sites
- Establish sustainable financing for the *Natura 2000* network
- Continued pooling of experience and good practice examples/guidance especially in relation to the management of fishing activity in *Natura 2000* sites.

Priority tasks are changing as *Natura 2000* becomes established in the marine environment however there remains a need to accelerate the nomination process for offshore waters. The case study from Germany illustrates that this can be achieved within the given time frame and the forthcoming handbook from the European Commission provides further practical guidance to ensure this task is achieved. The ultimate driver, as revealed by monitoring and future assessments, will be what has been achieved in terms of the conservation of marine biodiversity i.e. maintaining and restoring sites to favourable conservation status. The success of marine *Natura 2000* sites will, in turn, be key to delivering a range of marine conservation targets set by national governments and by the international community.

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^{*} The Executive Summary shows the content of the Background Papers at one glance. Each part was written by the author of the respective Background Paper.

Marine Strategy Directive and Maritime Green Paper

Together with the implementation of the Birds and Habitats Directives, the European Union is undergoing significant policy development in the field of the marine environment. It has published a Thematic Strategy, a proposed Marine Strategy Directive and is developing a wider maritime policy, currently at Green Paper stage. The proposed Marine Strategy Directive (MSD) would take an ecosystem based approach to the management of human activities and the sustainable use of marine goods and services, by developing a series of targets and measures to ensure the 'good environmental status' of the EU's marine areas. An EU marine strategy Directive would be a step forward at the EU level towards a better protection of the marine environment.

However there are a number of concerns related to these policy developments. The balance between the responsibilities of Member States and the European Union needs to be clarified as does the relationship between economic development and environmental protection. Much of the strength of the Directive will hinge on the definition of good environmental status, which requires more detailed description and clarification. Additionally, the actual MSD proposal does not strengthen the conservation principles achieved in existing European Regional Sea Conventions, and does not support MPAs as an important conservation tool or propose any measures related to fisheries management, which deferred as an issue of competency, as any measures regulating fisheries management can only be taken in the context of the CFP regulation.

The maritime Green Paper launched in 2006 a consultation to inform the Commission's vision of a 'holistic' future integrated Maritime Policy and is supportive of the marine Thematic Strategy and proposed Directive. In particular, it makes clear that a future Maritime Policy relies upon the MSD to implement an ecosystem based approach to maritime

activities. However at the same time it focuses strongly on the development of jobs and economic growth in the marine sector as part of the Lisbon Agenda. In essence the MSD is identified as the 'environmental' pillar with the Green Paper looking at the economic pillar. However, the lack of mention of fisheries management within the MSD and its inclusion in the Green Paper makes it difficult to see how the MSD could act effectively towards ecosystem management. The opportunity to discuss the management of sustainable fisheries in the context of the Green Paper should be utilised, to ensure that the link to biodiversity and ecosystem services becomes one of the major drivers of transforming the CFP.

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High Seas Biodiversity Conservation

Marine biodiversity in areas beyond national jurisdiction (ABNJ) is under increasing threat with no comprehensive legal or administrative structure yet in place to address the issues. Cognisant of this problem, the European Union (EU) is committed to pursuing an Implementation Agreement to the 1982 United Nations Convention on the Law of the Sea (UNCLOS). While working towards a new UNCLOS Implementation Agreement, however, the European Community (EC) and the Member States will need to continue taking actions towards achieving the targets of the World Summit on Sustainable Development – to stem the loss of marine biodiversity by 2010 and to establish representative marine protected area (MPA) networks by 2012. Additionally, the recent 2006 UNGA Resolution 61/105 calls upon nations to address destructive fishing practices in ABNJ by latest 2008. Opportunities for such action are detailed in this report.

Threats to biodiversity in ABNJ stem from a variety of sources, including declining coastal resources, accelerated demands for trade, fish and energy, and improved technologies for exploration

and exploitation of the living and non-living resources of the deep sea. Fishing and shipping on the high seas remain the primary human activities, the intensities of which have increased substantially in recent years. Additionally, mankind's footprint continues to expand, commonly reaching to depths of 1000 meters or more, such that vulnerable seamount populations, fragile deep sea corals and hydrothermal vents can now be readily accessed. The cumulative effect is undermining ecosystem resilience, biodiversity and food security.

New and emerging activities in ABNJ such as bioprospecting and ocean iron fertilization are not yet subject to adequate environmental regulation. In the 25 years since UNCLOS was negotiated, these and other unanticipated threats have multiplied, highlighting the need for rapid and comprehensive action. Moreover, climate change and its associated effects are adding significant new stresses such that marine biodiversity and productivity will become increasingly susceptible to broad scale regime shifts and/or collapse in the coming years.

It is now clear that in exercising their high seas freedoms under UNCLOS, many states have been slow to implement their reciprocal duties to protect and preserve the marine environment and to conserve and sustainably use high seas living resources. Challenges to be overcome include poor implementation of international legal obligations as well as regulatory and governance gaps in the legal regime under UNCLOS and related instruments.

Regulatory gaps create a patchwork of unequal and often inconsistent management of human activities. For many activities there is an absence of rules to assess and minimize environmental impacts.

Governance gaps also hinder efforts towards integrated management. Required is a common global mandate for biodiversity conservation in ABNJ. To achieve this, it will be necessary to harmonize mandates and improve transpar-

ency, public participation and accountability in decision-making processes.

In early 2008, the United Nations Ad Hoc Open-Ended Informal Working Group on the conservation and sustainable use of biodiversity beyond national jurisdiction will meet to discuss ways to improve management. An Implementation Agreement to UNCLOS as supported by the EU could address many weaknesses and gaps. However, at present not all nations are committed to such an agreement. Thus it may be some while before states agree to negotiate such an instrument, and even longer for it to be negotiated and enter into force.

In the interim, there are important steps that can be initiated to protect the most vulnerable areas and species and to maintain essential ecological support services. Through a combination of internal EC and/or Member State action, informal collaborative initiatives and improved use of existing institutions and agreements, the EU can make substantial progress towards achieving the 2010 and 2012 targets. Key recommendations are summarized below.

With respect to EC internal action, the EC and/or the Member States, as appropriate, should:

1. Enhance participation and transparency in the formulation of external fisheries policies to ensure consistency with the 2010 and 2012 targets.
2. Review performance of Member States under Common Fisheries Policy requirements relating to fishing by Member State vessels and nationals on the high seas.
3. Reduce perverse incentives and subsidies that promote overcapacity, inefficiency and destructive fishing practices.
4. Link EC subsidies under the Common Fisheries Policy with full compliance with EU environmental and EC fisheries policy.
5. Commence legal action for UNCLOS violations against irresponsible flag states in the International Tribunal for

the Law of the Sea or the International Court of Justice.

And, at the regional level, through regional fisheries management organizations (RFMOs) and regional oceans management organizations (ROMOs), the EC and/or the Member States, as appropriate, should:

1. Protect vulnerable deep sea ecosystems by rapidly implementing UNGA Res. 61/105 paragraphs 80-90 on destructive fishing practices.
2. Promote effective reform of RFMOs to fully incorporate the ecosystem approach and the precautionary approach, improve the use of science in decision-making and promote the adoption of MPAs and other measures to protect vulnerable species and habitats in ABNJ.
3. Enhance cooperation and coordination between RFMOs and ROMOs on issues of common concern such as the impacts of fishing on vulnerable marine ecosystems, habitats and species and the collaborative management of MPAs in ABNJ.
4. Support regional MPA network and bioregionalization initiatives such as those under development in the Southern Ocean in cooperation with relevant global and regional bodies, governments and stakeholders.

Informal collaborative initiatives involving a broad range of partners should be established to:

1. Form a coalition of like-minded states to support short term action and broader high seas governance reform.
2. Explore options to improve management and governance in ABNJ in informal settings to allow for more creative discussions.
3. Advance the scientific basis for identifying candidate MPAs and components of ecologically coherent MPA networks.
4. Commission economic studies on the benefits of biodiversity and MPAs in ABNJ and the costs of no-action.

5. Support scientific research on biodiversity in ABNJ, including marine genetic resources, in partnership with scientists from developing countries.
6. Establish pilot MPAs to gain practical management experience by agreeing to jointly identify and protect selected areas by refraining from certain actions in the area.
7. Develop codes of conduct amongst professional and industry groups for care inside and outside of MPAs.
8. Develop incentives for complying and disincentives for not complying with MPA management rules and codes of conduct.

International fora also offer important opportunities to promote progressive action. Upcoming opportunities at the United Nations include the United Nations General Assembly resolution debates (September-November 2007 and 2008), the UN Informal Working Group on Biodiversity in ABNJ (February 2008) and the UN Informal Consultative Process on Oceans and Law of the Sea (June 2007 and 2008). The EC and the Member States should:

1. Promote a UNGA Declaration on Policy Principles for biodiversity conservation and sustainable use in ABNJ to guide and prompt consistent state and institutional behaviour.
2. Encourage commitments to support jointly managed pilot MPAs as well as broader governance reforms.
3. Progress discussions on the issue of marine genetic resources in ABNJ with respect to managing environmental impacts and sharing the benefits.

The biannual meetings of the parties to the Convention on International Trade in Endangered Species (CITES, June, 2007), the Convention on Biological Diversity (CBD, May, 2008) and the triennial meetings of the Convention on Migratory Species (CMS, late 2008) provide opportunities to:

1. Discuss the role of CITES in monitoring global trade in vulnerable species

such as sharks to promote sustainable trade of marine species in cooperation with fisheries management institutions.

2. Adopt and apply consolidated sets of MPA criteria and guidelines to identify candidate sites and define representative MPA networks in ABNJ through the CBD in coordination with other relevant organizations.
3. Develop agreements and memoranda of understanding under the CMS with key range states and stakeholders to identify and protect vital habitats for marine migratory species including through MPAs.
4. Create new CMS agreements and partnerships for migratory species such as sharks that are impacted by high seas fisheries.

To address sectoral issues of fishing, shipping, waste dumping at sea and seabed mining, the EC and the Member States, as appropriate, should act within UN agencies such as the UN Food and Agriculture Organization (FAO), the International Maritime Organization (IMO) and the International Seabed Authority (ISA) to:

1. Promote FAO technical guidelines on MPAs and on deep sea fisheries that reflect a broad range of ecological expertise from relevant organizations and scientists.
2. Extend the UN Fish Stocks Agreement to cover discrete high seas fish stocks or negotiate a new agreement to achieve this objective.
3. Designate Special Areas, Particularly Sensitive Sea Areas and Ballast Water exclusion zones by the IMO for specific high seas areas in need of a higher level of protection.
4. Upgrade existing IMO pollution standards to reflect the best available technologies and practices and to ensure consistent levels of protection for the entire marine environment.
5. Develop IMO guidelines for the sequestration of CO₂ in sub-seabed

geological formations that reflect highly precautionary standards.

6. Regulate commercial ocean iron fertilization activities in ABNJ in line with the aims, duties and provisions of the London Protocol.
7. Designate preservation reference areas through the ISA as a contribution to the benthic component of a global system of MPAs.

* * *

Possible options for an Implementation Agreement for protection of marine biodiversity in areas beyond national jurisdiction

Marine areas beyond national jurisdiction (ABNJ) are under increasing risk from over-exploitation. There is a need for improved implementation of, and better coordination between, current instruments. Additionally, there are gaps and shortcomings in the current legal framework and in the institutional governance structures, especially in relation to the consideration and assessment of measures to conserve marine biological diversity to fully reflect the evolving understanding of ecosystem-based approaches.

The European Union (EU) has proposed that an Implementation Agreement to the 1992 United Nations Convention on the Law of the Sea (UNCLOS) be developed to provide for the conservation and management of marine biological diversity in ABNJ. An Implementation Agreement could provide a useful mechanism to augment the provisions of UNCLOS in relation to ABNJ and to coordinate an ecosystem-based approach for conservation and sustainable use of resources in these areas.

The development of an Implementation Agreement could take many years, and in the interim urgent conservation priorities need to be addressed. Development of an Implementation Agreement should not impinge on current progress in sectoral bodies and organisations, or on efforts to improve implementation of ex-

isting instruments. However the progress (or lack of it) in these other bodies may affect which issues are included in an Implementation Agreement and which are dealt with in other forums. If an Implementation Agreement attempts to consider the full range of issues and activities affecting ABNJ, it may take a long time to conclude. The instrument may be more effective if it provides a mechanism to improve coordination and collaboration across the various bodies involved in ABNJ and focuses on a limited number of specific issues that fall outside the mandates of existing organisations or could be further developed under UNCLOS.

Some key issues to be discussed in the context of an Implementation Agreement include:

1. A regular assessment process(es), based on the best available science, to improve knowledge of ABNJ and of key ecosystem goods and services and to draw attention to the causes and implications of changing conditions and trends;
2. Provision for area-based measures that offer a higher level of protection for vital habitat and key ecological functions and processes;
3. Mechanisms to enhance international cooperation and exchange of information regarding proposed major marine scientific research programmes and their objectives, and to transfer the resulting knowledge (building on existing UNCLOS provisions);
4. Specific means to ensure prior environmental impact assessment (EIA), including cumulative impacts across different sectors, and ongoing monitoring when planned activities may cause significant and harmful changes to the marine environment, and to promote the international exchange of these monitoring and environmental impact assessment reports (building on UNCLOS 204-06);
5. Commitment and research to further develop and apply ecosystem-based

- approaches to ocean conservation and management;
6. Provision for a notification and reporting process for new and emerging uses of ABNJ, including experimental activities;
 7. Mechanisms to strengthen compliance with and enforcement of measures governing ABNJ, including knowledge-sharing and coordination among States and through relevant international and regional bodies;

8. Provision for sustainable and equitable use of marine genetic resources (MGR) in ABNJ;
9. Agreement on measures to ensure transparency, consultation, and accountability for all major stakeholders in ocean use and conservation.

Strategic decisions are required to determine which components of these issues could be addressed in an Implementation Agreement and which could be advanced through other mechanisms. Following on from this the most appro-

priate institutional arrangements could then reflect the scope of an Implementation Agreement. Some provisions may be able to be delivered by existing organisations and others may require establishment of a new coordinating body(ies) or technical advisory body. Consideration of what an Implementation Agreement might accomplish helps provides a means for the international community to discuss what initiatives and reforms could improve marine governance in ABNJ.

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Natura 2000 – designation and management in marine areas by Sue Gubbay*

1 Introduction

Council Directive 79/409/EEC on the Conservation of Wild Birds (the Birds Directive) and Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive) are the main legal instruments for the protection of nature and biodiversity within the EU. The Birds Directive creates a comprehensive scheme of protection for all wild bird species naturally occurring in the Union. The Habitats Directive establishes a common framework for the conservation of animal and plant species as well as natural and semi-natural habitats that have been identified as being of Community interest¹. Both include requirements to establish protected areas.

The Birds Directive requires the designation of Special Protection Areas (SPAs) for species listed in Annex I of the Directive as well as for any regularly occurring migratory species. The Habitats Directive requires the designation of Special Areas of Conservation (SACs) for habitats and species listed in Annexes I and II to the Directive. Taken together, these locations form the 'Natura 2000' network of protected areas which is intended to contribute towards the maintenance of biodiversity across the European Union.

The Habitats Directive and Birds Directive set out legal requirements for the implementation of *Natura 2000* however other targets agreed by the EU also support and will help deliver *Natura 2000* in

the marine environment. The most relevant of these are the agreements made at the Gothenburg Summit in 2001 to halt the decline of biodiversity by 2010, and by the Environment Council of the European Commission in 2002 to establish representative networks of MPAs by 2012 including the completion of the marine sites of the *Natura 2000* network by 2008². The EU Biodiversity Communication and associated Action Plan published in 2006 has identified biodiversity conservation, including safeguarding the EU's most important habitats and species as well as conserving and restoring biodiversity and ecosystem services in the wider marine environment, as one of four key policy areas.³ The EU Maritime Green Paper⁴ and the proposed Marine Strategy Directive⁵ which has a key aim of achieving good status of the EU's marine environment by 2021, also promote the establishment of MPAs including those which will contribute to *Natura 2000*.

These targets and timetables sit alongside a number of commitments made by other bodies which will also help establish and manage the *Natura 2000* network. Under the 1992 Convention on

Biological Diversity (CBD), Contracting Parties agreed to establish a global network of MPAs by 2012. Technical advice on how to achieve this is being provided by subsidiary bodies and a marine expert group. The latter have provided guidance on how marine and coastal protected areas should contribute to a national framework for sustainable use of marine and coastal biodiversity⁶.

The 1992 Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention) came into force in 1998. Annex V of the Convention (on the Protection and Conservation of the Ecosystems and Biological Diversity of the Maritime Area) gives the OSPAR Commission a duty to develop means, consistent with international law, for instituting protective, conservation, restorative or precautionary measures related to specific areas or sites or related to particular species of habitats. A number of workshops have been held under the auspices of the OSPAR to develop guidelines for the identification, selection and management of MPAs.

The Helsinki Commission (HELCOM) has also been promoting the establishment of MPAs since the early 1990s as 'Baltic Sea Protected Areas' (BSPAs, Rec.15/5, 1994). The coastal and marine protected areas are being established "to protect representative ecosystems of the Baltic as well as to guarantee sustainable use of natural resources"⁷. A joint statement made by HELCOM and OSPAR in 2003 (the Bremen Declaration) sets out a commitment and programme of work by both bodies to establish "an ecologically coherent network of well managed marine protected areas" by 2010.

* Sue Gubbay is an independent expert in *Natura 2000* issues. The opinions expressed in this paper are those of the author alone, and do not necessarily reflect those of BMU, BfN or IUCN.

¹ O'Briain & Rizo-Martin (2002) The state of implementation of nature directives with particular reference to the marine environment – introduction and overview of the situation. In: Boedeker & von Nordheim (Eds) Application of *Natura 2000* in the marine Environment. BfN – Skripten 56.

² Message from Malahide. Halting the decline of biodiversity – priority objectives and targets for 2010. Stakeholder Conference. 25-27 May 2004. <http://biodiversity.chm.eea.europa.eu/convention/F1117799202/F1122843896/1112853936/download>

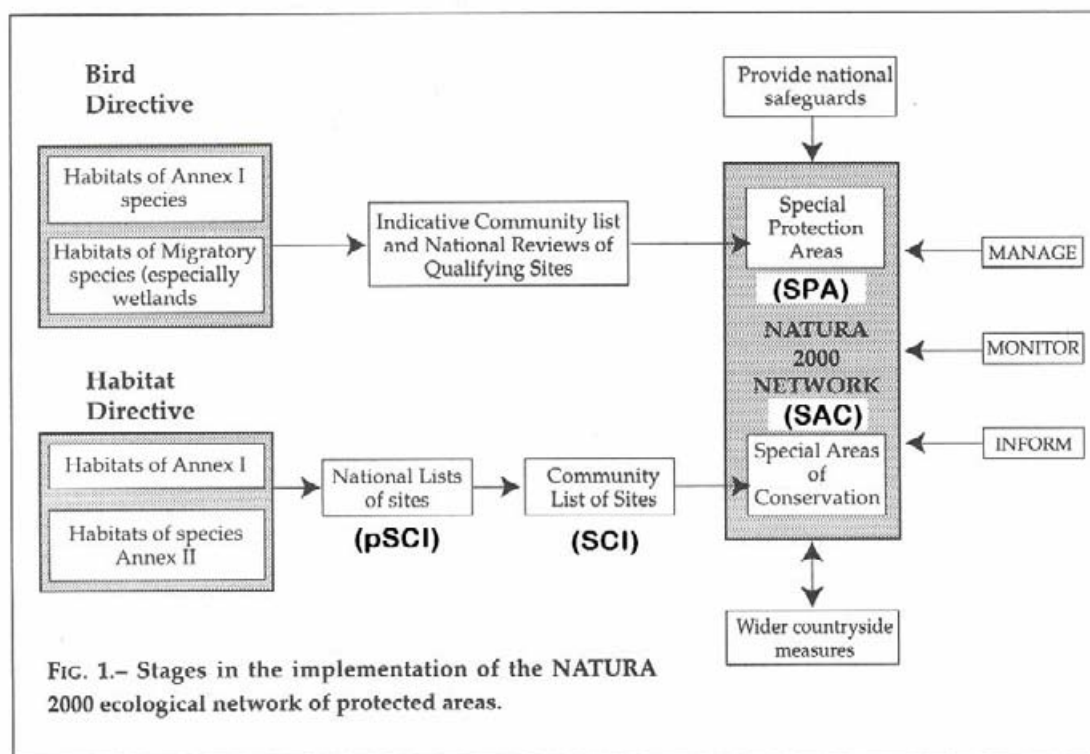
³ EC (2006) Halting the loss of biodiversity by 2010 — and beyond: Sustaining ecosystem services for human well-being; Annex 1. Brussels, 22.5.2006, COM(2006) 216 final. http://ec.europa.eu/environment/nature/biodiver-sity/current_biodiversity_policy/biodiversity_com_2006/index_en.htm

⁴ CEC (2006) Towards a future Maritime Policy for the Union: A European vision for the oceans and seas. COM(2006)275

⁵ CEC (2005) Proposal for a Directive of the European Parliament and of the Council establishing a Framework for Community Action in the field of Marine Environmental Policy (Marine Strategy Directive). COM (2005) 505.

⁶ UNEP/CBD, 2003

⁷ http://www.helcom.fi/Recommendations/en_GB/rec15_5/



The 1976 Convention for the Protection of the Mediterranean Sea against Pollution (Barcelona Convention) and 1992 Convention on the Protection of the Black Sea against Pollution (Bucharest Convention) which provide for international cooperation for a co-ordinated and comprehensive approach to the protection and enhancement of the marine environment of these sea areas are examples of other international agreements which will contribute to the success of *Natura 2000*.

The *Natura 2000* network extends over both the terrestrial and marine territories of Member States⁸. In the case of the marine environment this includes the waters and seabed of the Exclusive Economic Zone (EEZ) of Member States or, if an EEZ has not been declared as in the UK, to the Continental Shelf and/or out to a limit of 200nm.

The paper is concerned with *Natura 2000* sites in marine areas under the jurisdiction of Member States. It provides

1. a summary of existing commitments in relation to the implementation of *Natura 2000* in marine areas,
2. an assessment of the main tasks and opportunities for further implementation of *Natura 2000* in marine areas,
3. a listing of possible solutions for further implementation steps in light of characteristics of "best practice" for the designation and management of marine *Natura 2000* areas (demonstrated by two best practice examples),
4. a summary of emerging definitions and key elements of ecological coherence for Marine Protected Areas.
5. Recommendations for further designation, regulation and management of marine *Natura 2000* areas.

2 PROGRESS WITH THE IMPLEMENTATION OF NATURA 2000 IN THE MARINE ENVIRONMENT

2.1 Steps towards the implementation of *Natura 2000*

The key stages in building up the *Natura 2000* network of protected areas are the identification, delineation, and nomination of potential sites by Member States (national lists), submission of these sites (candidate Sites of Community Importance) for review by the European Commission and Member States at a series of biogeographic meetings and, once approved at these meetings (after which they become known as Sites of Community Importance), formal designation at national level by Member States as SPAs and SACs. This process is set out in Annex III of the Habitats Directive and is illustrated in Figure 1.

⁸ R. v. Secretary of State for Trade and Industry, *ex parte* Greenpeace (No.2) [2000] 2 CMLR 94; Case C-6/04, Commission of the European Communities v United Kingdom of Great Britain and Northern Ireland. Opinion of Advocate General Kokott delivered on 9 June 2005. Case C-131/05, Commission of the European Communities v United Kingdom of Great Britain and Northern Ireland.

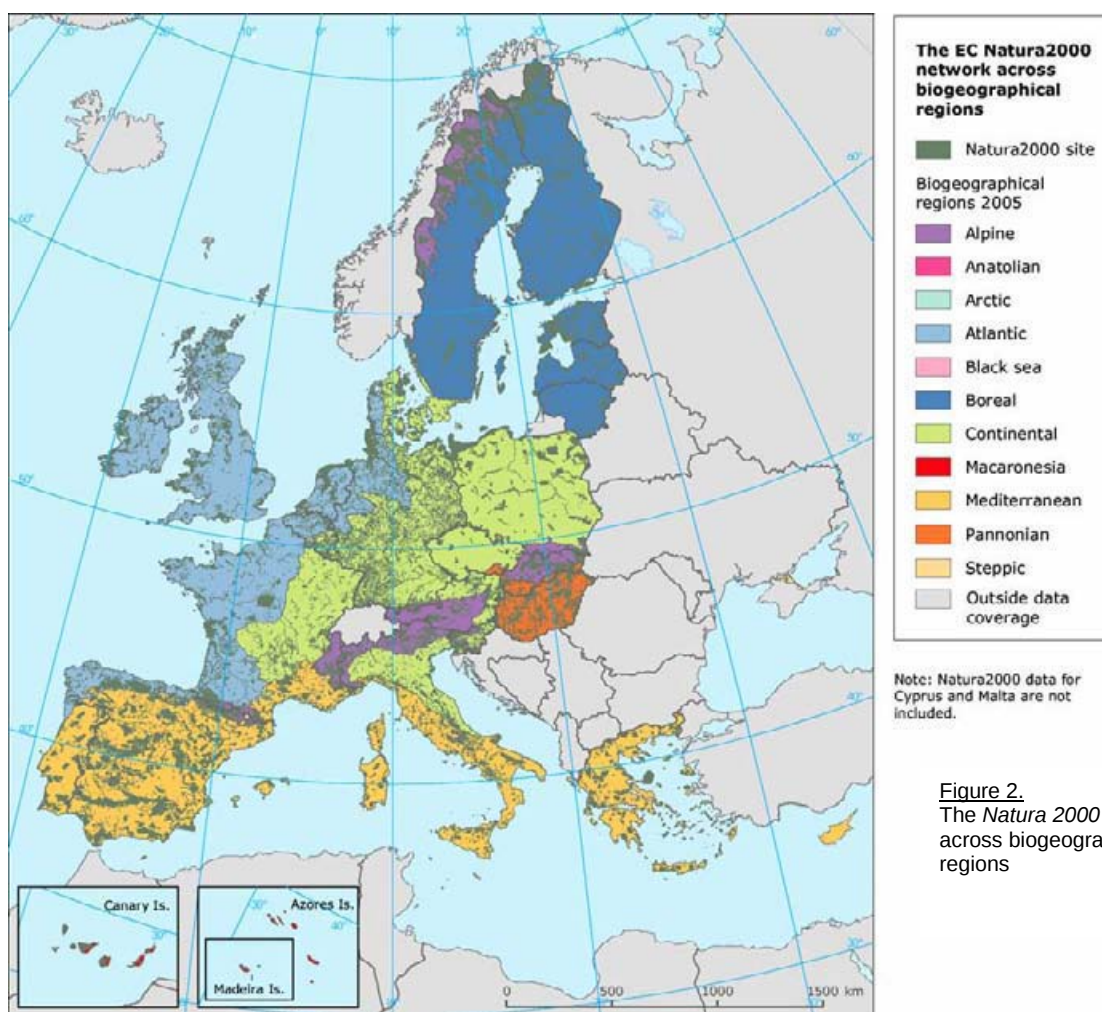


Figure 2.
The *Natura 2000* network across biogeographical regions

SCI lists have been adopted by the Commission for EU-15 for six biogeographic regions and in October 2006 the Commission set out a rolling plan for progressive updating of these lists. During this process Member States will also need to consider proposing sites for a number of new species and habitat types which have been added to annexes of the Habitats Directive⁹. An interpretation manual¹⁰ and forthcoming guidelines¹¹ from the European Commission provide more details.

Once designated, Member States are required to establish the necessary conservation measures to maintain in favourable condition those habitats and

species occurring in *Natura 2000* sites (Article 6.1). Measures must also be taken to avoid deterioration of habitats and significant disturbance of species (Article 6.2). These measures can include management plans, legislation and administrative arrangements.

Plans or projects likely to have a significant effect on management of site will need to be subject to appropriate assessment and only proceed if they will not adversely affect the integrity of the site (Article 6.3). They may however proceed for "imperative reasons of overriding public interest, including those of a social or economic nature" (Article 6.4). If that is the case and no alternatives are available, compensatory measures are required and need to be reported to the European Commission to ensure that the overall coherence of *Natura 2000* is protected. The most recent guidance from

the Commission on this was published in January 2007¹².

The European Commission requires regular reports on the implementation of measures taken under the Habitats Directive including an evaluation of their impact on the conservation status of the habitats and species listed in Annexes I & II of the Directive. The first report focused on legal transposition and implementation of the Directive and covered the period 1994-2000¹³. The second

⁹ EC (2006) Updating of the Community lists of Sites of Community Importance (SCI) under the Habitats Directive – proposed procedures. Working paper. B.2./FK D(2006)

¹⁰ EC (2003) Interpretation Manual of European Union Habitats. EUR 25

¹¹ EC (*in press*) Guidelines for the establishment of the *Natura 2000* network in the marine environment. Application of the Habitats and Birds Directives,

¹² EC (2007) Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC. Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the Commission. Alternative http://ec.europa.eu/environment/nature/nature_conservation/eu_nature_legislation/specific_articles/art6/pdf/guidance.pdf

¹³ Composite report from the Commission on the implementation of the Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora. http://ec.europa.eu/environment/nature/nature_conservation/monitor_indic_reporting/monitoring_and_reporting/habitats/index_en.htm

report, due in 2007, will provide the first assessment of conservation status for all species and habitats of Community interest.

2.2 Current status of designation of marine *Natura 2000* sites

As of December 2006, a total of 20,862 SCIs, of which 4,617 are SPAs, have been designated by Member States¹⁴. They cover a total area of 3,940,746 km² (Figure 2).

Annexes to the Habitats and Birds Directive list 9 marine habitat types, 16 marine mammals, fish, reptiles and 28 species of seabird for which *Natura 2000* sites may be designated (Table 2).

The marine area covered by SPAs throughout the EU, as of 1st December 2006, was 6,511,177 ha. This falls within 484 SPAs. The marine area covered by Sites of Community Importance throughout the EU, as of 1st December 2006, was 7,780,678 ha. This falls within 1,248 SCIs. Table 1 gives a breakdown of the figures for each Member State. To date, Germany is the only country to have proposed sites in an EEZ (see Section 4.1).

At the Atlantic, Continental and Mediterranean biogeographic meetings which reviewed proposals and assessed the representation of the habitats and species listed in Annexes to the Habitats Directive a 'reserve' was put on the marine proposals. This was due to the scientific uncertainty about the distribution of habitats and species in marine (off-shore) waters as well as difficulties in determining the definitions of particular marine habitat types, especially 'sandbanks'. Member States were given an additional period to come up with marine proposals.

The European Commission was also requested by Directors of Nature to establish a Marine Working Group to provide guidance on some of the questions surrounding designation of marine *Natura 2000* sites. Since March 2003

subgroups have been working on three topics; new marine habitat definitions for shallow sandbanks, reefs and marine structures made by leaking gases; identification, assessment and selection of sites; and management of *Natura 2000* sites. This work is nearing completion and the resulting guidance document on the application of the Birds and Habitats Directive in the marine environment is likely to be published in early 2007. In light of this, the following timetable is under consideration to finalise the marine *Natura 2000* network¹⁵;

- Mid 2007 – completion of the process of proposal/designation of sites which have already been scientifically identified as potential *Natura 2000* sites.
- Mid-2008 - completion of further scientific investigation with a view to determining if other areas should be included in *Natura 2000* and of the process of their proposal/designation.
- Mid-2008 – clear identification of additional scientific work that would be required for full completion of the *Natura 2000* network if this is not possible by 2008 and clear time frame for achieving this.

Under this proposed timeframe all marine sites proposed by Member States will be included in the updated Community lists and therefore allow the *Natura 2000* network in the marine environment to be largely complete by 2009.

3 TASKS AND OPPORTUNITIES

There can be little doubt that the designation of marine *Natura 2000* sites has led to a significant increase in the number of MPAs in European waters. These locations have a critical role in safeguarding marine biodiversity in European waters. Many difficulties, at all levels (from European to local), have had to be overcome in order to establish them. The key challenges and opportunities as the process now moves from site identification and designation, to management and assessment are discussed below.

3.1 Scientific knowledge and understanding

From the outset, one of the challenges of delivering the marine element of *Natura 2000* has been the gathering sufficient scientific knowledge and improving understanding about European seas especially at a level of detail which enables sites to be identified, appropriate management regimes to be introduced, and suitable indicators defined to assess progress in achieving conservation objectives.

For coastal waters, the scientific study of European seas from the 18th century onwards provides a firm foundation. Today the gathering of marine biological information is undertaken by scientific institutions as well as many other interested parties. The commercial sector, for example, holds useful data collected during surveying operations and for Environmental Impact Assessments. Indeed it was during surveys carried out by a consortium of oil companies (the Atlantic Frontier Environmental Network) that an area of cold water corals, since named the 'Darwin Mounds', was discovered and subsequently proposed by the UK as a potential SCI.

The need for sound scientific underpinning for the establishment and management of marine *Natura 2000* sites, and for the networks of MPAs being sought by OSPAR and HELCOM has also been an opportunity to help secure funding for marine research projects. Two international examples, co-funded by INTERREG IIIB, are MESH and BALANCE.

MESH (The development of a framework for Mapping European Seabed Habitats)¹⁶ aims to produce seabed habitat maps for north-west Europe and develop international standards and protocols for seabed mapping studies. End products will include a meta database of mapping studies, a web-delivered geographic information system (GIS) showing the habitat maps, and guidance for marine habitat mapping including protocols and standards. BALANCE (Baltic Sea Man-

¹⁴ http://ec.europa.eu/environment/nature/nature_conservation/useful_info/barometer/pdf/sci.pdf

¹⁵ EC (2006) Note to Nature Directors of Member States. ENV/B2/PHA/fb D(2006)10195

¹⁶ <http://www.searchmesh.net/>

agement – Nature Conservation and Sustainable Development of the Ecosystem through Spatial Planning)¹⁷ is undertaking similar tasks such as collating available marine data for the Baltic, Kattegat and Skagerrak, defining marine landscapes, developing habitat maps and assessing the existing Baltic Sea MPA network.

Also relevant is HERMES (Hotspot Ecosystem Research on the Margins of European Seas), a major international research project funded by the EC's Framework Six Programme¹⁸. HERMES is designed to gain new insights into the biodiversity, structure, function and dynamics of ecosystems along Europe's deep ocean margin. It will assist managers to assess how global change, human impacts and environmental management schemes affect deep sea ecosystems and biodiversity. A major output of the project will be the first pan-European GIS, which will provide the framework for integrating science, environmental monitoring and socio-economic indicators.

These studies will provide an important baseline for assessing the sufficiency of the *Natura 2000* network as well as the OSPAR, HELCOM and national MPA programmes which are seeking to establish MPAs for the conservation of specific benthic habitat types.

Agreement by the European Parliament and Council on the text of a proposed Directive on Infrastructure for Spatial Information in Europe (INSPIRE) will also be of assistance though its objective of harmonising spatial information across Europe and making it more easily available to the public¹⁹.

In terms of identification of potential SCIs the main current scientific challenge is gathering sufficient relevant information to identify sites in offshore areas. Such information needs to show the distribution of particular habitats or species but also, ideally, to give some indication of the relative importance of particular ar-

eas for such habitats and species. Viewing potential sites in a wider context is especially challenging for Member States with large areas of EEZ however it is also a considerable opportunity to gather essential information not only for *Natura 2000* but also the developing field of Marine Spatial Planning.

Germany is the first Member State to have completed the nomination of marine SCIs throughout the area of its EEZ. Other Member States are different stages either ready with nominations (e.g. four cold water coral areas in the Irish EEZ) consulting on particular locations (e.g. the Netherlands, Portugal [the Azores]) or in the process of conducting surveys to get more detailed information about specific areas (e.g. UK).

With a large number of sites now designated the scientific knowledge to underpin management is another challenge. This includes determining the links between particular human activities and specific impacts on species and habitats, and having sufficient knowledge to distinguish between natural fluctuations and changes resulting from human activity.

Key points

- There is a good foundation of marine biological information in European waters although not always in a suitable format or at the level of detail needed to underpin the identification and management of marine *Natura 2000* sites.
- Member States have been collating existing information and have initiated new scientific surveys which have gathered a wealth of data to inform the designation of marine *Natura 2000* sites.
- As scientific information is never complete, the designation and nomination process and the management have to be based on the best scientific information available within the given time frame.
- In terms of identifying sites, the weakest area of scientific knowledge is the offshore environment (within EEZs). Member States are seeking to ad-

dress this for example by commissioning specific studies to compliment existing data.

- Gathering information to improve scientific knowledge and understanding of the marine environment is essential for *Natura 2000* but also has wider benefits such as supporting the developing field of Marine Spatial Planning.

3.2 Developing the legal framework

Transposing the requirements of the Habitats and Birds Directive into national laws and regulations provides the necessary legal framework for *Natura 2000* within Member States. Nevertheless in 2004 the European Court of Justice, deliberating on a case concerning cockle dredging in the Wadden Sea SPA, concluded that an 'appropriate assessment' of such activity, which was licensed annually, was required even though the Netherlands had not transposed the Directive into national legislation at that time²⁰.

Establishing a legal framework has required an assessment of whether existing provisions are sufficient and, in some cases, the introduction of new legislation. The details vary as such legislation has had to be appropriate to the range of administrative and governance structures across the European Union. For example²¹:

- in France existing rather than new regulatory measures are being used, supported by a management plan which provides guidance rather than being a statutory document;
- in Greece legislation allows for the establishment of site specific management bodies who have various powers and responsibilities include

²⁰ De Santo, E.M. & Jones, P.S. (in press) Offshore marine conservation policies in the North East Atlantic: emerging tensions and opportunities. *Marine Policy*.

²¹ European Commission (2003) Report from the European Commission on the Implementation of the Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora.

¹⁷ <http://www.balance-eu.org/>

¹⁸ <http://www.eu-hermes.net/>

¹⁹ <http://inspire.jrc.it/proposal/EN.pdf>

the preparing management plans and enforcing regulations.

- in Belgium the Federal Government rather than regional governments is responsible for marine sites.
- in Portugal and the UK specific regulations transpose the Habitats & Birds Directives into law.

The legal framework is being tested at national and European levels through practical application and developing case law.

Key points

- Most Member States have transposed the requirements of the Habitats Directive into national law
- The national legal frameworks are varied because of the different administrative and governance structures across the European Union.
- The legal frameworks enable the Directive to be applied in the marine environment and may include specific marine regulations,
- National provisions to enable the application of the Directive to offshore areas (EEZ) are not in place for all Member States.

At the present time effort is focused on ensuring that the Directive can be applied in the offshore areas (EEZ) of Member States.

3.3 Stakeholder involvement and support

Much has been written about the challenge and importance of encouraging stakeholder involvement and support for MPAs and *Natura 2000*²². The main types of participatory activity range from information sharing and consultation to more engaging activities such as collaboration and empowerment which cre-

ate partnerships²³. Stakeholder involvement also ensures that value-based and experiential (common sense, gained through experience) knowledge can inform the process alongside information based on technical expertise and facts. This is especially important as the process moves from the selection of marine *Natura 2000* sites which must be based on the presence of specified habitats and species and therefore scientific criteria²⁴, to management where socio-economic considerations play a part.

Member States have approached stakeholder participation in *Natura 2000* in a variety of ways. In the Azores, Project Mare has raised the profile of marine *Natura 2000* by developing a range of educational materials; in the UK stakeholders have become representatives on the management committees of marine SACs, in the Netherlands, stakeholders have helped develop a code of conduct on access to avoid disturbing wildlife; and in Ireland, the government has worked with the national and international scientific community to develop a code of practice for marine scientific research at Irish coral reef SACs.

The provision of information is an important starting point for stakeholder involvement. This is usually built on through opportunities for feedback and, at the most involved level, through active participation in developing, promoting and helping to deliver the objectives of *Natura 2000* sites. When dealing with marine areas there is the added challenge of working with stakeholders who are not as easily identified as a resident population and biodiversity interests which can be considered remote and inaccessible to the majority of people.

Key points

- Stakeholder participation is widely recognised as being essential to the success of Marine Protected Areas and to marine *Natura 2000* sites
- There are many models of stakeholder involvement ranging from the passive dissemination of information to active involvement in day-to-day management of *Natura 2000* sites.
- One of the most significant benefits of stakeholder involvement is building an understanding and appreciation of *Natura 2000* sites and through this, a partnership approach of working towards their success
- The necessary minimum level of protection has to be guaranteed by the law of the Member States and the competent authorities.

3.4 Financing

Financing protected area programmes is always a challenge because of the need to cover a broad process from identification of potential sites through to establishing schemes of management as well the ongoing costs of day-to-day operation. The additional difficulties of working in the marine environment add to these costs when compared to terrestrial areas.

The LIFE-Nature Fund has provided financial support to help establish the *Natura 2000* network and demonstrate how it can work in practice. This fund has been important in supporting marine *Natura 2000* through projects which enhance knowledge of the marine environment, preserve and protect marine species and habitats of Community interest, ensure prudent utilisation of marine goods and services, building partnerships for the seas and improving environmental quality of our seas²⁵. Five

²² E.g. Kelleher, G. (1999) Guidelines for Marine Protected Areas. Best Practice Protected Area Guidelines Series No.3. IUCN. English Nature *et al.*, (2001) Indications of good practice for establishing management schemes on European marine sites. Learning from the UK Marine SACs Project 1996-2001. Peterborough, English Nature. EC (1998) Implementing the Habitats Directive in Marine and Coastal Areas. Office for Official Publications of the European Communities.

²³ Jones *et al.*, (2001) An evaluation of approaches for promoting relevant authority and stakeholder participation in European marine sites in the UK. English Nature.

²⁴ EC (2006) Nature and Biodiversity Cases. Ruling of the European Court of Justice. European Communities 2006.

²⁵ European Commission (2006) LIFE and the marine environment. Promoting sustainable management of Europe's seas. Office for Official Publications of the European Communities, Luxembourg.

case studies are posted on the LIFE-Nature website²⁶.

While project funding has helped establish sites and, in some cases, support the development of the schemes of management, the greatest challenge in the future is likely to be sustainable financing to cover the long term costs of day-to-day management of marine *Natura 2000* sites. In 2004 the Commission announced its intention to fund *Natura 2000* for a number of funding streams in addition to LIFE and environment funds. One of those mentioned was the European Fisheries Fund²⁷. This comes into force in 2007 and will largely be delegated to national level management therefore it remains to be seen whether sufficient financing will be available through this route.

Government support, whether through delegated EU funds such as these or national sources, provides confidence and is evidence of a serious commitment at the national level but could be supplemented by involvement of the private sector, NGOs and local communities as well as considering how costs might be reduced for example by sharing staff and resources between MPAs in a network and co-management²⁸. Marine *Natura 2000* sites could also be draws for funding by acting as focal points for promoting marine conservation, studying the marine environment, and taking forward collaborative management regimes.

Compensation for loss of access within marine *Natura 2000* sites could be another financial consideration. The likelihood of this becoming an issue will only become clear during consultations over

detailed plans for the management of marine *Natura 2000* sites.

Key points

- Project funding has been critical in helping to establish *Natura 2000* sites in the marine environment.
- The next challenge is a long-term one of finding sustainable financing solutions. Experience from other MPAs shows that there are a variety of ways in which this might be achieved.
- Marine *Natura 2000* sites could also be a financial draw, attracting financial investment by virtue of their status, the opportunity to promote marine conservation in these areas and providing ideal conditions for particular areas of marine research.

3.5 Management

The management of marine *Natura 2000* sites presents many of the current challenges and opportunities to implementation of the Habitats and Birds Directive in the marine environment. It also cuts across all the issues described above.

The guidance document due to be published shortly by the Commission includes a chapter on management measures and goes into detail about ten human activities which are considered to be particularly relevant to the management of marine *Natura 2000* sites;

- Fisheries and aquaculture
- Dredging, gravel and sand extraction
- Exploration and extraction of oil and gas
- Shipping and shipping infrastructures with the UNCLOS frame 4
- Electricity power generation at sea
- Military activities
- Coastal developments
- Tourism, recreational navigation, maritime sports, diving, flying
- Pollution (including noise)
- Alien species

While the focus is undoubtedly on if and how such activities might be conducted within *Natura 2000* sites, Article 6 of the Directive requires assessments of plans

and projects which are not connected with the site but likely to have a significant effect on it and Article 10 of the Habitats Directive encourages "the management of features of the landscape which are of major importance for wild fauna and flora". The management of *Natura 2000* sites must therefore also be viewed in a wider context.

This section of the paper focuses on the management of fisheries in marine *Natura 2000* sites as this is not only considered to be a top priority issue by many MPA managers²⁹ but it is also a particularly challenging aspect of MPA management as there is often a background of conflict, suspicion and lack of cooperation between environmental and fisheries interests. Case study 2 (Section 4) also focuses on fisheries.

3.5.1 Management of fisheries in marine *Natura 2000* sites

Fishing activity has the potential to effect all of the marine habitats and species listed in Annex I and II of the Habitats Directive, and all the seabirds listed in Annex I of the Birds Directive³⁰. The effects are varied and they have differing implications depending on the habitats or species in question, on the particular conditions of a site, the type of fishing activity and its intensity and scale. Given this, any fishing within marine SACs and SPAs needs to be managed to ensure that it does not have a detrimental effect on the conservation status of the species and habitats for which the site has been designated.

There are many issues to be addressed in managing fisheries within *Natura 2000* sites. Some are not exclusive to fisheries e.g. research needs, enforcement, effective dissemination of information, but others are fisheries specific. Examples include getting access to and collecting fine scale temporal and spatial data

²⁶ http://ec.europa.eu/environment/nature/nature_conservation/natura_2000_network/managing_natura_2000/exchange_of_good_practice/marine_intro.html

²⁷ European Commission (2004) Financing *Natura 2000*. Guidance Handbook. ENV.B.2/SER/2005/0020. http://ec.europa.eu/environment/nature/nature_conservation/natura_2000_network/financing_natura_2000/guidance/pdf/financing_natura2000_en.pdf

²⁸ Kelleher, G. (1999) Guidelines for Marine Protected Areas. Best Practice Protected Area Guidelines Series No.3. IUCN.

²⁹ E.g. Kelleher, G. (1999) Guidelines for Marine Protected Areas. Best Practice Protected Area Guidelines Series No.3. IUCN.

³⁰ Gubbay, S. & Knapman, P.A. (1999) A review of the effects of fishing within UK European marine sites. English Nature (UK Marine SACs Project). 134 pages.

about fishing effort and the effect of fisheries on habitats and species. A key issue at the present time is how to deliver fisheries management within marine *Natura 2000* sites at the same time as respecting the different competences of Member States and the EC.

Fishing within the territory and community waters of Member States is managed through the Common Fisheries Policy (CFP). Since 2003 this has included the management of fish stocks for conservation and environmental purposes (Council Regulation 2371/2002). Examples of the spatial management of fishing activity through the CFP specifically to benefit nature conservation include³¹;

- bottom trawling prohibition above seagrass beds in the Mediterranean since 1994;
- bottom trawling prohibition in the Mediterranean within three nautical miles from the coast or at depths less than 50 m where that depth is reached at a shorter distance;
- Prohibition on using bottom trawls or similar towed nets in contact with the bottom of the sea in the area known as "Darwin Mounds" north-west of Scotland adopted in 2004;
- similar prohibitions adopted in areas surrounding the Azores, Madeira and Canary islands adopted in 2005;
- restriction of trawling activities to 14 geographically identified trawlable areas within the 25 nautical miles zone of Malta adopted in 2004;
- 'transitional' prohibitions on bottom set-nets at depths beyond 200 metres in ICES Divisions VIab, VIIbcjk and Subarea XII adopted in 2005.

The European Commission has also been party to fisheries management agreements for environmental purposes with other bodies. Examples are the ban on bottom trawling and static gears to protect vulnerable deep-sea habitats

through regulations agreed by the North East Atlantic Fisheries Commission on the Hecate and Faraday Seamounts, a section of the Reykjanes Ridge the Altair Seamounts, and the Antialtair Seamounts (adopted in 2005) and parts of the Hatton Bank, Logachev Mounds and West Rockall Mounds (adopted in 2006).

Fisheries management beyond territorial waters is an 'exclusive competence' of the EU and is carried out through the CFP. At the same time Member States are obliged to maintain *Natura 2000* sites in favourable conservation status, which may require action on fisheries. If these sites lie within the Exclusive Fisheries Zone of the EU, action has to be taken through the CFP. The issue therefore is that Member States have obligations to manage fisheries in *Natura 2000* sites in their EEZ but no powers to do so except in relation to their own fishing vessels.

Under such circumstances Member States need to request the Commission to take the necessary measures to regulate fishing activities. Any proposal by the Commission would subsequently need to be adopted by the Council³². On the other hand if Member States can act under the environmental part of the Treaty (Articles 174 & 175) they could be in a position to implement measures to protect sites from damaging fishing activity without the need for agreement at Community level although this has still to be clarified³³. There is no case law specifically on this point however the Commission are providing further guidance on the links between the CFP and the Habitats and Birds Directives, and on measure to be taken in relation to fisheries in their forthcoming guidance document³⁴.

Another relevant issue is how to deal with a situation where fisheries management measures are permitted under the CFP yet, at the same time, also pose a threat to the conservation status of marine *Natura 2000* sites³⁵. For a comparable situation on land, albeit with reference to the Common Agriculture Policy and the Birds Directive, the European Court has ruled that it is still not possible to authorise a Member State to avoid its obligations under that Directive³⁶.

At the national level Member States are identifying fisheries management measures in marine *Natura 2000* sites based on a conflict analysis between nature conservation targets and fishing activities. An example is a three year ICES project financed by the Federal Agency for Nature Conservation (BfN) on 'Environmentally Sound Fishery Management in Protected Areas (EMPAS)'³⁷. The project team aim to develop fisheries management plans for each of the ten proposed *Natura 2000* areas in the German EEZ by examining three key questions:

- the extent to which fishing activities in the MPA represent a significant interference with the *Natura 2000* concept and objectives;
- the extent to which fisheries activities need to be regulated; and
- how any the regulations be balanced with the requirements of *Natura 2000* and the fisheries.

In light of their findings they will make recommendations for fisheries management measures which could include spatial and temporal regulation of fisheries and sustainable fishing methods to ensure that the conservation status of *Natura 2000* sites is not compromised.

³¹ Lutchman *et al.*, (2006) Marine Protected Areas in the EU and UK. Progress, perspectives and outlook. Draft Report. IEEP, London

³² Hernandez-Aquilar, P. (2004) Nature protection in the marine environment. Views on the relationship between fisheries and the "Birds" and "Habitats" Directives. In: Ritterhoff *et al.*, (Eds) Marine Protected Areas and Fisheries. BFN- Skripten 122.

³³ Owen (2004) Interaction between the EU Common Fisheries Policy and the Habitats and Birds Directives. IEEP Policy Briefing, IEEP, London.

³⁴ EC (*in press*) Guidelines for the establishment of the *Natura 2000* network in the

marine environment. Application of the Habitats and Birds Directives, Owen (2004) IEEP Policy Briefing, IEEP, London.

³⁶ Case C-96/98 [1999] ECR I-8531 as reported in Owen (2004) Interaction between the EU Common Fisheries Policy and the Habitats and Birds Directives. IEEP Policy Briefing, IEEP, London.

³⁷ For more information, see <http://www.ices.dk/marineworld/protectedAreas.asp>.

Specific actions have also been taken at many sites such as zoning schemes with defined areas with restrictions including some on certain types of fishing (e.g. Isole Pelagie in Italy, Cerebere-Banyuls in France; El Estrecho in Spain; Lough Hyne in Ireland, Lundy Island in the UK; and the Vorpommern Lagoon area in Germany. Some of the experiences of Member States in managing fisheries in marine *Natura 2000* sites can be found in workshop reports³⁸. The actions described demonstrate that at least for *Natura 2000* sites adjacent to the coast, Member States are introducing fisheries management measures.

Beyond territorial waters one example of measures being introduced through the CFP to safeguard the interest of a candidate SCI is the prohibition on bottom trawling (initially an emergency measure but since made permanent) at the Darwin Mounds off the north-west coast of Scotland³⁹. Whether such action could have been taken pro-actively to prevent damage, rather than after damage has occurred, is not clear but is critical to effective management of *Natura 2000* sites. This case also demonstrated that there can be a significant time lag between initiating such a process and the introduction of the requested measures (around 6 months).

Another important issue relevant to the management of fishing activity within *Natura 2000* sites is whether such activities constitute a 'plan or project' and therefore should be subject to an "appropriate assessment of its implications for the site in view of the site's conservation objectives" (Article 6.3 of the Habitats Directive). In 2004 the European Court of Justice heard a case on this issue relating to cockle fishing in the Wadden Sea SPA and concluded that

fishing activities which require an annual license (as in this case) should be subject to an 'appropriate assessment'. On-going fisheries that do not require an annual license appear to fall outside this requirement even though they may be having a detrimental effect on the protected area.

Key points

- Fisheries is a key management issue for marine *Natura 2000* sites
- There remains a need for clarity at the European level on the how difference competencies of the Member States and the European Commission should work together to introduce the requirement fisheries management measures, especially for sites within the EEZ.
- Fisheries management measures are being introduced and/or existing measures are being modified as part of the management of *Natura 2000* sites that lie close to the coast. The effectiveness of such measures in safeguarding the conservation importance of these locations has still to be evaluated.

4 BEST PRACTICE FOR DESIGNATION AND MANAGEMENT OF MARINE *Natura 2000* AREAS

There is a growing body of knowledge on best practice relating to the designation and management of marine *Natura 2000* sites. At the outset this was drawn from experience with other types of MPA but now there is a great deal of information from established marine *Natura 2000* sites.

A recent review of the management of MPAs in Europe (including some marine *Natura 2000* sites) identifies some common elements; the inclusion of stakeholders in the planning process, provision for highly protected zones surrounded by buffer areas, effective legal provisions supporting the MPA designation; and a visible on-going management presence⁴⁰. The authors conclude by

identifying the following principles of effective MPA management;

- Strong and purpose built planning and governance legislation,
- a statutory and genuine commitment to stakeholder involvement in management,
- planning at the ecosystem scale incorporating considerations of critical habitat
- preservation, representative, comprehensive and adequate habitat capture,
- provision of highly protected core zones augmented by buffers within a managed framework,
- adaptive management processes characterised by quantitative assessments against agreed objectives,
- a well-resourced visible, positive management presence

More detailed guidance specifically for *Natura 2000* sites is due for publication by the EC in early 2007 (see above). This will include an approach for locating and selecting sites, management measures for sites and the link between the Common Fisheries Policy and *Natura 2000* and draw on experiences of good practice from different Member States.

The following case studies give two examples of how site identification and the management of fisheries within *Natura 2000* sites have worked in practice.

4.1 Case study 1: Identification of *Natura 2000* sites in the German EEZ

The work undertaken by Germany leading up to the nomination of *Natura 2000* sites in its North Sea and Baltic Sea EEZ, illustrates the many challenges of identifying offshore sites as well as how they can be tackled successfully. The following information is taken from von Nordheim *et al.*, (2006)⁴¹ who describe the process in detail.

³⁸ E.g. Ritterhoff, J. *et al.* (2004) Marine Protected Areas and Fisheries. BfN-Skripten 122. ICES (2006) Report of the Workshop on Fisheries Management in Marine Protected Areas, 3-5 April, ICES CM 2006/MHC:10 94pp.

³⁹ Clorley, J. (2004) Relationship of the Common Fisheries Policy and the Habitats & Birds Directive. In: Ritterhoff *et al.*, Marine Protected Areas and Fisheries. BfN-Skripten 122.

⁴⁰ Stevens *et al.*, (2006) Methods for managing Marine Protected Areas: options for es-

tablishing and managing a marine protected area system in the UK. Report for Natural England.

⁴¹ Von Nordheim, H., Boedeker, D. & Krause, J.C. (2006) Progress in Marine Conservation in Europe. NATURA 2000 Sites in

Legal basis

In 2002 an Article was introduced into the Federal Nature Conservation Act giving the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety responsibility for the establishment of protected areas in the German EEZ and on the Continental Shelf.

Site selection

A specific project, with dedicated funding, was established to facilitate the identification of potential *Natura 2000* sites in the German EEZ. This not only enabled the process to be resourced but also set out a clear timetable for delivery.

Site selection was based on the criteria set out in the Habitats and Birds Directive and focused on sandbanks and reefs as the two habitat types listed in Annex I of the Habitats Directive that were known to occur in the German EEZ. They were identified on the basis of sediment characteristics and associated species.

Only a few species of the listed species were known to occur in the German EEZ. Apart from seabirds there was insufficient data to identify and demarcate sites specific to these species although their distribution included some of the potential habitat SACs.

In both cases a combination of traditional knowledge and dedicated scientific surveys were used to scope potential areas and then get more detailed data to support site selection.

Identification and assessment

A variety of methods were used to identify and assess potential *Natura 2000* sites. Work on marine habitats started with a collation of existing data and was followed by expert assessment of these data aided by modelling and analysis using a GIS. This helped determine where additional research efforts should be focused, especially field studies which involved the collection of new data by direct sampling and remote techniques. Data from other research projects such

as MINOS (Marine mammals and Birds in the North and Baltic Seas) were also incorporated.

A fishing study was undertaken to supplement the limited amount of historic data and describe the distribution of Annex II fish species in the EEZ. This concluded that there were no areas of special importance to these species in the EEZ.

Harbour seals were studied by remote sensing using satellite tagging to gather information on foraging, feeding and resting areas and revealed that the animals consistently travelled to specific hot spots in the North Sea to forage. Harbour porpoise were studied by aerial surveys which showed clear aggregations and high densities of in particular areas. Self-contained submersible data loggers that register harbour porpoise echolocation click trains were also used to research habitat use. Data on seabird concentrations were collected from a combination of aerial and ship-based surveys.

Species distribution maps and concentration areas were produced from these data, and subsequently combined to identify candidate conservation areas.

Public awareness and consultation

Increasing public awareness of the scientific underpinning and facilitating consultation with interested parties was seen as an essential part of the process of identifying *Natura 2000* sites in the German EEZ. The ten identified sites were presented and discussed with the relevant German federal ministries, the coastal States, all relevant stakeholders and the general public. For this purpose a public consultation process was started which included three public hearings. Promotional materials such as a booklet, video, website and interactive CD were produced and disseminated to stakeholders. Details were also posted on the internet, in newspapers and via press releases to see comments and improve the quality of the data. Altogether the consultation process took more than one year.

At the end of this process, in May 2004, 10 *Natura 2000* sites (2 SPAs and 8 pSCLs) in the German EEZ were nominated as pSCLs, to the European Commission (Figure 3).

4.2 Case study 2: Management of shrimp fisheries in the Koster Väderöfjord *Natura 2000* site, Sweden

The Koster Väderöfjord is a 62km long deep trench, parallel to the northern part of the Swedish west coast which connects to the deep Norwegian trench in the Skagerrak. It has a high diversity of biotopes and species with several hundred species which have only been found here in Swedish waters and has been designated a *Natura 2000* site for its reefs and sublittoral sandbanks. The area is also important for commercially important species of fish, molluscs and crustaceans. Bottom trawling for the deep water shrimp *Pandalus borealis* is the only form of trawling permitted in the area. This is a long standing fishery (more than 100 years) and has always been subject to regulation.

This case study describes how an agreement was reached to regulate shrimp trawling through provision of scientific information and stakeholder participation in decision making⁴².

In the late 1990's the area was proposed by the Swedish Environment Protection Agency as a potential marine reserve. Local fishermen saw this as a threat to their livelihoods because of the possibility of trawling being prohibited in any future reserve.

In 1996 the local authorities (County Administration of Västra Götaland) initiated a joint process with stakeholders and requested further details on the biodiversity value of the area before any

⁴² Skold, M. (2004) Marine Protected Areas and fisheries: two case studies from Sweden. In: Ritterhoff, J. *et al.* (2004) Marine Protected Areas and Fisheries. BfN-Skripten 122; Larsen *et al.*, (2006) Review of the Role of science in cooperative fisheries Management. Version One. Scientific Advice for Fisheries Management at Multiple Scales. <http://www.ifm.dk/safmams/Downloads/WP4/Review%20of%20Scientific%20Advice,%20060707.pdf>

proposals might be progressed. This led to an extensive biological survey of the area using Remotely Operated Vehicles and multibeam scanning bathymetry as well as compiling data from more than 30 years study of the area. This led to the identification of 10 sub-areas with special biological values.

In 1999 a working group including the County Administration, local fishermen and representatives of their organisations, and representatives of the municipalities and the National Board of Fisheries was set up to try and find a way to protect the conservation value of the area at the same time as being acceptable to the local fishermen.

The group used knowledge provided by

scientists (e.g. distribution maps of species and habitats, detailed bathymetry, sub-areas of particular value) and fishermen (e.g. technical aspects of their operations such as precision when fishing, the behaviour of their trawling gear and positions of their hauls). Further work was commissioned and the final results were proposals, agreed by all to;

- Adjust borders for most sub-areas to allow for manoeuvring of trawling gear
- Close 6 sub areas to trawling
- Permit passage for trawlers through one area
- Identification of four areas with no direct conflict between trawling and biodiversity value and therefore careful trawling permitted

- Lower the minimum trawling depth from 50-60m which increased the area protected from trawling.

In parallel the shrimp fishermen supported regulations to reduce the by-catch of fish by requiring use of an excluding device and limiting fishing to 4 days a week. Since then there has also been further collaboration with fishermen assisting scientists to locate deep sea coral reefs in the area and the local Marine Biological Institute holding special courses for local fishermen as a means of exchanging information about the area.

The success of this cooperative exercise can be measured by the fact that agreement was reached which included design-

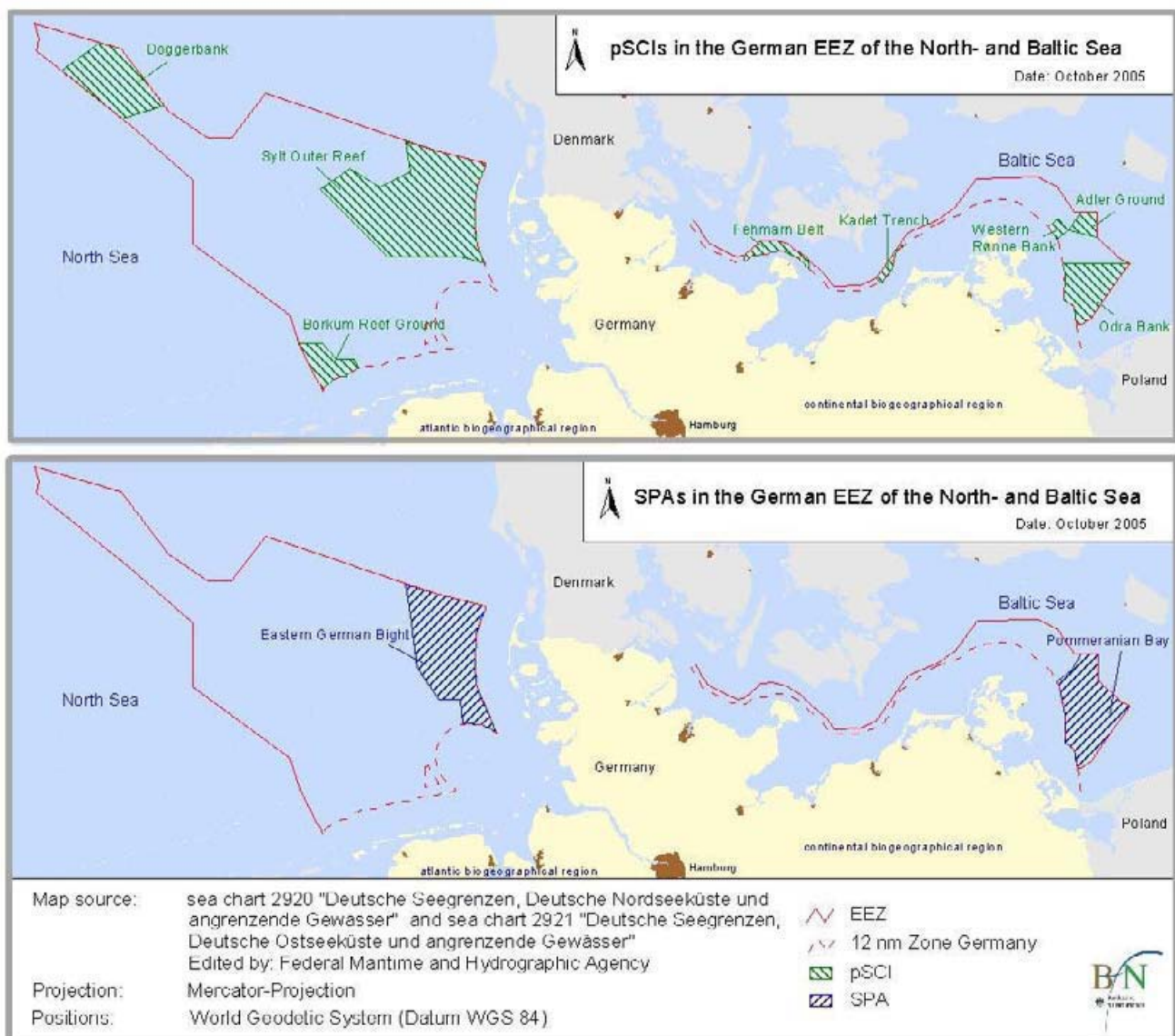


Figure 3: The 8 pSCIs and 2 SPAs in the offshore area of the German North Sea and Baltic Sea (Figure 1 from Nordheim *et al.*, 2006, see footnote 41).

nation of sensitive areas and limitation of fishing in time and space (sensitive reefs excluded) and by the fact that this is the only fishery in Sweden which has organic certification. It is also promoted by NGOs as a good example of a sustainable small-scale fishery.

The area is also one of six pilot areas which are being studied by the Swedish Board of Fisheries with a view to investigating the possibilities for institutionalising local and regional fisheries co-management structures in Sweden.

4.3 Useful lessons

Some useful lessons for the designation and management of marine *Natura 2000* sites can be drawn from the two case studies described above;

- The German case study shows how the identification and delimitation of *Natura 2000* sites in the EEZ benefited from being set up as a specific project. This acted as an incentive and gave the work focus with clear timelines a budget and government support to achieve the objectives. A large and daunting task was completed and has provided a scientifically robust foundation for the *Natura 2000* network in the German EEZ.
- Both case studies demonstrate that successful resolution of issues relating to *Natura 2000* sites (in these examples site identification and a contentious management issue) will take time. The time taken to reach agreement on the management of the shrimp fishery in the Koster Väderöfjord fjord could not be foreseen and the scientific studies supporting the *Natura 2000* proposals in German waters required several seasons of study. Equally important however, is that the requirement to establish the *Natura 2000* network was an incentive and target to be achieved.
- Marine research can be a costly exercise as well as subject to many practical difficulties. Both case studies show that partnerships, collaboration, and combining funds from a variety of sources can ease the burden of mak-

ing such work possible. This is not unique to *Natura 2000*, but it has made the establishment of the marine sites an achievable proposition.

- In a similar vein, both case studies show how the work contributing to *Natura 2000* has provided opportunities to feed into and support other initiatives and develop new technologies. These wider benefits have included improving knowledge, communication and partnerships.
- The involvement of local stakeholders in the task of site identification and management solutions is demonstrated in both case studies. This has been critical to their success and should underpin the long term viability of these initiatives.

5 ECOLOGICAL COHERENCE AND MARINE PROTECTED AREAS

Site protection has long been an important management tool for nature conservation and has led to the designation of many protected areas on land and at sea. This effort is ongoing, especially in the marine environment, but an added dimension has become important in recent years. Today conservation efforts are not only geared towards individual sites but are also seeking additional benefits through the establishment of networks of protected areas.

Bennett & Wit⁴³ attribute this shift to "growing awareness amongst those actively involved in the conservation of biodiversity that:

- the protection of individual biological elements – predominantly a limited number of exceptionally valuable natural areas and threatened species – was not succeeding in arresting the decline in the integrity of the protected areas and many species populations

- the viability of species populations is dependent on the existence of a particular complex of environmental elements and processes rather than on its simple isolation from human influences
- the increasing extent and intensity of human activities in the landscape and their impact on biodiversity cannot be compensated through site protection measures alone."

A network of MPAs has been defined as a collection of individual sites that are connected in some way by ecological or other processes (CBD, 2004). International and Regional and European commitments for MPA networks focus on the former through calls for the establishment of "ecologically coherent" networks of protected areas.

The Habitats Directive is a key driver for establishing such networks in Europe as it enshrines the need for an ecologically coherent network protected areas (including marine protected areas) in law. Article 3 requires the setting up of "coherent European ecological network of SACs" which, together with SPAs classified under the EC Birds Directive, will make up the *Natura 2000* network and Article 10 refers to improving the ecological coherence of the *Natura 2000* network through the management of features of the landscape such as those essential for migration (although with no specific reference to the marine environment). In parallel, HELCOM and OSPAR have made a commitment to establish an ecologically coherent network of well-managed marine protected areas by 2012.

Given these commitments, there is a growing body of work on defining ecological coherence, examining how ecologically coherent networks of MPAs might be identified, and determining how their effects on the conservation of marine biodiversity might be monitored and evaluated.

IUCN define an ecological network as "a coherent system of natural and/or semi-natural landscape elements that is con-

⁴³ Bennett, G & Wit, P. (2001) The development and application of ecological networks. A review of proposals, plans and programmes. AIDEnvironment/IUCN. 137pp.
<http://www.iucn.org/themes/wcpa/pubs/pdfs/DevelopmentandApplicationEcologicalNetworks.pdf>

figured and managed with the objective of maintaining or restoring ecological functions as a means to conserve biodiversity while also providing appropriate opportunities for the sustainable use of natural resources" (IUCN, 2001)⁴⁴.

OSPAR⁴⁵ & HELCOM⁴⁶ are developing criteria to evaluate the ecological coherence of networks of MPAs. The key elements of both approaches are to base assessments on;

- **Representativity** of the full range of species, habitats, landscapes and ecological processes present within an area
- **Connectivity** between MPAs so there are sufficient opportunities for the dispersal and migration of species between MPAs
- **Replication** of features within and across biogeographic areas to spread the risk against damaging events and long term changes and to ensure that natural variation of features is covered.
- **Adequacy/Viability** of MPAs such that they are sufficiently large to maintain the integrity of the feature or features for which they are selected.

Three techniques which are being explored by OSPAR to identify gaps by focussing on different sources of information are; self-assessment based on expert knowledge; species-habitat assessment based on reporting (cross-tabulation against biogeographic re-

gions) and spatial assessment based on GIS data⁴⁷.

Marine *Natura 2000* sites should certainly provide good replication and representativity of those habitats and species listed in the relevant Annexes to the Habitats and Birds Directives and will become more representative if other habitats and species are added to the Annexes if and when future revisions of these Annexes take place. Other habitats and species will of course occur in these protected areas but will not necessarily have the same protected status.

The degree to which connectivity has been considered by Member States when nominating sites is not clear, nor whether this aspect has been assessed by the Commission when agreeing the lists for each biogeographic zone.

Similarly there is little information available on whether the size and shape of individual sites has been examined with reference to developing a network as opposed to the specific requirements of individual sites. Using the above criteria as a guide, the ecological coherence of the present suite of marine *Natura 2000* sites is difficult to determine and likely to be patchy.

6 PRIORITY TASKS

Considerable progress has been made with the implementation of *Natura 2000* in the marine environment over the last decade. The Habitats Directive has been transposed into national law, existing data have been collated and scientific studies carried out to underpin the identification and delimitation of sites, management schemes are being developed and stakeholders are being drawn in to play an active part in the process. For the immediate future the review carried out in this paper suggest the following priority tasks in terms of designation,

regulation and management. This is supported by a checklist attached as Annex 1.

Designation

- Complete identification and nomination of marine sites where the greatest gap at present is the offshore (EEZ) area
- Carry out first assessments of ecological coherence of the marine *Natura 2000* network and nominate any further sites required to achieve this.
- Continue to link the designation process with other initiatives/measures (e.g. OSPAR/HELCOM) especially in relation to building a network and complementarity, and to avoid duplication of effort

Regulation

- Achieve clarity over the legal precedence for the management of fishing activities in *Natura 2000* sites
- Establish which regulatory measures can be used for the pro-active management of fisheries for nature conservation purposes (i.e. on the basis of threat rather than actual damage)

Management

- Increase efforts and focus on delivery on the ground i.e. effective management to achieve conservation objectives
- Continue research to provide a sound scientific underpinning to the management of *Natura 2000* sites
- Ensure stakeholder involvement for effective delivery of the objectives of *Natura 2000* sites
- Establish sustainable financing for the *Natura 2000* network
- Continued pooling of experience and good practice examples/guidance especially in relation to the management of fishing activity in *Natura 2000* sites.

Priority tasks are changing as *Natura 2000* becomes established in the marine environment, however there remains a need to accelerate the nomination proc-

⁴⁴ IUCN (2001) The development and application of ecological networks. A review of proposals, plans and programmes.

⁴⁵ OSPAR (2006) Criteria and guidelines to support the assessment of whether the OSPAR network of Marine Protected Areas is ecologically coherent. Presented by Germany. MASH 06/5/3-rev-E

⁴⁶ Korpinen, S. & Piekainen, H. (2006) Literature review on ecological coherence of a network of Marine Protected Areas. Draft version 16.10.2006. BALANCE Work Package 3; BALANCE-HELCOM 2006. BALANCE-HELCOM Workshop on ecologically coherent network of MPAs in the Baltic Sea and the North East Atlantic, 25th-27th of October 2006, Helsinki, Finland. Final minutes from the meeting.

⁴⁷ OSPAR, (in prep). OSPAR Convention for the Protection of the Marine environment of the Northeast Atlantic. Summary Record of the Meeting of the Intersessional Group on Marine Protected Areas, London, 5-7 Feb. 2007; and submitted background documents ICG-MPA 07/03/01-rev; ICG-MPA 07/03/02-rev; ICG-MPA 07/03/03.

ess for offshore waters. The case study from Germany illustrates that this can be achieved within the given time frame and the forthcoming handbook from the European Commission provides further practical guidance to ensure this task is achieved. The ultimate driver, as re-

vealed by monitoring and future assessments, will be what has been achieved in terms of the conservation of marine biodiversity i.e. maintaining and restoring sites to favourable conservation status.

The success of marine *Natura 2000* sites will, in turn, be key to delivering a range

of marine conservation targets set by national governments and by the international community.

Table 1
Marine *Natura 2000* sites as of 1st December 2006*

MEMBER STATE	No. of SPAs in which a marine part is noted	Marine area (km ²)	No. of SCIs in which a marine part is noted	Marine area (km ²)
AT	n/a		n/a	
BE	0	0	1	181
CY	1	21	5	50
CZ	n/a		n/a	
DE	14	16,216	48	18,086
DK	59	12,173	118	7,959
EE	26	6,394	34	3,419
ES	20	574	88	5,191
FI	66	5,567	98	5,460
FR	62	3,260	90	5,603
GR	16	567	102	5,998
HU	n/a		n/a	
IE	66	810	92	3,386
IT	18	763	160	2,244
LT	1	171	2	171
LU	n/a		n/a	
LV	4	520	6	556
MT	0	0	1	8
NL	7	4,913	9	4,025
PL	3	8,794	0	0
PT	10	622	23	490
SE	107	3,033	327	5,848
SI	1	3	3	0.2
SK	n/a		n/a	
UK	3	710	41	9,131
EU	484	65,112	1,248	77,807

Table 2

Annexes to the Habitats and Birds Directive list the following marine habitat types, marine mammals, fish, reptiles and seabirds (NB. Article 4(2) of the Birds Directive also requires protection of areas important for regularly occurring migratory species).

Marine environment natural habitat types in Annex I of the Habitats Directive		
EU Code	Habitats	
1110	Sandbanks which are slightly covered by seawater all the time	
1120	Posidonia beds (<i>Posidonia oceanica</i>)	
1130	Estuaries	
1140	Mudflats and sandflats not covered by seawater at low tide	
1150	Coastal lagoons	
1160	Large shallow inlets and bays	
1170	Reefs	
1180	Submarine structures made by leaking gases	
8330	Submerged or partially submerged sea caves	
Marine environment species in Annex II of the Habitats Directive		
EU Code	Scientific Name	Common Name
1349	<i>Tursiops truncatus</i>	Bottlenose dolphin
1351	<i>Phocoena phocoena</i>	Harbour porpoise
1364	<i>Halichoerus grypus</i>	Grey seal
1365	<i>Phoca vitulina</i>	Harbour seal
1366	<i>Monachus monachus</i>	Mediterranean Monk seal
1938	<i>Phoca hispida subsp.bottnica</i>	Ringed seal
1913	<i>Phoca hispida subsp.saimensis</i>	Ringed seal
1224	<i>Caretta caretta</i>	Loggerhead turtle
1227	<i>Chelonia mydas</i>	Green turtle
1099	<i>Lampetra fluviatilis</i>	River lamprey
1095	<i>Petromyzon marinus</i>	Sea lamprey
1100	<i>Acipenser naccarii</i>	Adriatic sturgeon
1101	<i>Acipenser sturio</i>	Baltic/Atlantic sturgeon
1102	<i>Alosa alosa</i>	Allis shad
1103	<i>Alosa fallax</i>	Twaite shad
1108	<i>Salmo macrostigma</i>	Trout (subspecies)
Sea birds included in Annex I of the Birds Directive		
	<i>Gavia stellata</i>	Red-throated Diver
	<i>Gavia immer</i>	Great Northern Diver
	<i>Pterodroma feae</i>	Gon-gon
	<i>Bulweria bulwerii</i>	Bulwer's Petrel
	<i>Calonectris diomedea</i>	Cory's Shearwater
	<i>Puffinus puffinus</i> subsp.mauretanicus	Manx Shearwater (Balearic subspecies)
	<i>Puffinus yelkouan</i>	Mediterranean Shearwater
	<i>Puffinus assimilis</i>	Little Shearwater
	<i>Pelagodroma marina</i>	Frigate Petrel
	<i>Hydrobates pelagicus</i>	Storm Petrel
	<i>Oceanodroma leucorhoa</i>	Leach's Strom Petrel
	<i>Oceanodroma castro</i>	Madeiran Strom Petrel
	<i>Phalacrocorax aristotelis</i> subsp. desmarestii	Shag (Mediterranean subspecies)
	<i>Phalacrocorax pygmeus</i>	Pygmy Cormorant
	<i>Charadrius alexandrinus</i>	Kentish Plover
	<i>Caildriis alpina schinzii</i>	Dunlin Subspecies
	<i>Larus melanocephalus</i>	Mediterranean Gull
	<i>Larus genei</i>	Slender-billed Gull
	<i>Larus audouinii</i>	Audouin's Gull
	<i>Larus minutus</i>	Little Gull
	<i>Sterna caspia</i>	Caspian Tern
	<i>Sterna sandvicensis</i>	Sandwich Tern
	<i>Sterna dougalii</i>	Roseate Tern
	<i>Sterna hirundo</i>	Common Tern
	<i>Sterna paradisaea</i>	Arctic Tern
	<i>Sterna albifrons</i>	Little Tern
	<i>Uria aalge ibericus</i>	Guillemot (Iberian sub-species)

ANNEX 1**Checklist of key elements in the establishment of the *Natura 2000* network**

POLICY DRIVER	EC Habitats & Birds Directives	Article 2
LEGAL FRAMEWORK	Transpose Directives into national law Introduce any additional necessary regulations	Article 23
SITE IDENTIFICATION	Gather scientific information. Collate existing data and conduct additional surveys if required in relation to the habitats and species listed in relevant Annexes and their proportion in the territory of the Member State. This to include determining identifiable areas representing the physical and biological factors essential to their life and reproduction. Proposed sites must provide geographic cover which is homogeneous and representative of the entire territory and provide sufficient representation of all habitats listed in Annex I & II	Article 3.1 Article 3.2 Article 4.1 Article 18 EC (2006)*
	Assess sites using scientific criteria	Annex III
	Prepare site proposals (maps showing boundaries, features of interest, <i>Natura 2000</i> forms etc.)	Article 3.2 Article 4.1
SITE NOMINATION	Public consultation	
	Submit proposals (pSCIs) to EC for discussion at relevant biogeographic meetings	Article 4.2
	Gaps identified	Article 5
SITE ESTABLISHMENT	Adoption of pSCIs by EC	Annex III
	Formal acceptance of sites as SACs and SPAs including any necessary legal status	Article 4.4
	Identify financing mechanisms including co-financing from EC	Article 8
SITE MANAGEMENT	Establish administrative framework for management (management committee, local stakeholder groups etc.)	
	Set out management objectives	Article 2
	Introduce management measures to maintain or restore specified species and habitats at favourable conservation status	Article 2 Article 6.1 Article 6.2
	Examine existing activities and determine whether appropriate assessments required	Article 6.3
	Take compensatory measures if plans or projects with negative assessments are carried out for imperative reasons of overriding public interest	Article 6.4
	Carry out supporting research and scientific work	Article 18
	Carry out monitoring and review	Article 11
	Assess and report on status to EC	Article 17.1
NETWORK ESTABLISHMENT	Assess for ecological coherence	Article 3.3 Article 10
	Take necessary actions to address gaps & support the network	Article 10 Article 11
NETWORK REVIEW	Commission review of the contribution of <i>Natura 2000</i> towards achievement of its objectives	Article 9 Article 17.2

* EC (2006) Nature and Biodiversity Cases. Ruling of the European Court of Justice. European Communities 2006.

EU Marine Policies – The Maritime Policy Green Paper, and EU Marine Strategy Directive

by A. Farmer, M. Herodes and I. Lutchman*

1. INTRODUCTION

The European Union is undergoing significant policy development in the field of the marine environment. It has published a Thematic Strategy, a proposed marine strategy Directive and is developing a wider maritime policy, currently at Green Paper stage. There are also a number of other on-going maritime protection processes, such as on maritime safety and implementation of the habitats, birds and water framework Directives. This concentration on maritime issues reflects the relative lack of attention that historically had been paid to the area compared to other parts of the environment and also the growing importance of marine systems for the social and economic development of the Union.

The Commission adopted the Thematic Strategy on the Protection and Conservation of the Marine Environment¹ on 24 October 2005. The main mechanism taking forward the marine strategy is a proposal for a Directive² (the marine strategy Directive (MSD)), published at the same time, which has the aim to achieve 'good environmental status' in the marine environment by 2021. The marine Thematic Strategy sets the scene for the introduction of the marine strategy Directive, by arguing that the existing measures at EU and national levels are inadequate and insufficient to address the threats to the marine environment. The marine strategy Directive is the main

implementing element of the Thematic Strategy. The Thematic Strategy itself contains very few, if any, new ideas or approaches that the EU will pursue. Rather, it outlines some of the ongoing activities (eg Maritime Policy development) and existing legislation (eg the Common Fisheries Policy (CFP), the water framework Directive and the habitats and birds Directives³). Furthermore, as the Thematic Strategy itself is a Communication, it carries no legal weight.

Marine Strategy Directive – A note on Versions

It is important to be clear about the nature of the different 'texts' of the proposed Directive as the differences between these can represent significant practical consequences for Member States. The Directive is to be adopted under the Co-Decision Procedure. This means that the text is first **proposed** by the Commission, the European Parliament gives its **First Opinion** and then the Council reaches a first **Common Position**. The Parliament then gives a **Second Opinion**, the Council a second **Common Position** and, if no agreement is reached, the final version is agreed in a Conciliation Committee.

At the time of writing the proposed marine strategy Directive has been proposed, and the Parliament has given its First Opinion. However, the Council has already debated the proposal and reached what is known as a Political Agreement. This is likely to form the text of the later Common Position (although the Council should take account of the Parliament's views). It is also important

to note that the Parliament's Opinion is supported by the work of its Environment Committee, which debates and proposes amendments to the Plenary.

It is important to stress, therefore, that it is inappropriate to view any one text as the 'latest version'. Currently a Parliamentary opinion⁴ and the Political Agreement are 'latest', but they are the basis of negotiating positions which have yet to be formally adopted within the Co-Decision Procedure. The final adopted Directive will be likely to contain elements of the different positions.

For the purposes of this report, the following abbreviations will apply to the relevant documents:

- 'Proposal': the original 2005 Commission proposal
- 'COR': the April 2006 opinion of the Committee of the Regions⁵
- 'EP': the November 2006 opinion of the Parliament
- 'CPA': the December 2006 Political Agreement of the Commission.

The original aim was to publish the marine Thematic Strategy together with the proposal for a Directive in early summer 2005 and draft copies of the relevant documents were circulated to interested parties in preparation for this. However, further inter-service consultations followed those early drafts so that it took until October 2005 for publication in a

* The authors form part of the Institute for European Environmental Policy – IEEP. The opinions expressed in this paper are those of the authors alone, and do not necessarily reflect those of BMU, BfN or IUCN.

¹ Communication from the Commission to the Council and the European Parliament. Thematic Strategy on the Protection and Conservation of the Marine Environment. COM(2005)504. 24.10.2005.

² Proposal for a Directive of the European Parliament and of the Council establishing a framework for Community action in the field of marine environmental policy (Marine strategy Directive). COM(2005)505. 24.10.2005

³ Note also that the proposal would support the objectives of COM(2006) 216 Halting the Loss of Biodiversity by 2010 – and Beyond, as actions for achieving Objective 3 on the marine environment in the EU Action Plan to 2010 and beyond.

⁴ Opinion of the European Parliament on a Thematic Strategy on the Protection and Conservation of the Marine Environment. 14 November 2006.

⁵ Opinion of the Committee of the Regions of 26 April 2006 on the Directive of the European Parliament and of the Council establishing a framework for Community Action in the field of Marine Environmental Policy (Marine Strategy Directive) COM(2005) 505 final and on the Communication from the Commission to the Council and the European Parliament – Thematic Strategy on the Protection and Conservation of the Marine Environment. 16 May 2006. DEVE-IV-002.

form that was significantly different from the draft proposal (such as in the detail of the elements of good environmental status, the scope of Member State co-operation, etc⁶).

The European Commission launched the maritime policy Green Paper (MGP) on 7 June 2006: 'Towards a future Maritime Policy for the Union: A European vision for the oceans and seas' (COM(2006)275)⁷. The underlying rationale is the EU's sustainable development objectives (Council document 10917/06)⁸ with the Green Paper seeking to 'strike the right balance between the economic, social and environmental dimensions of sustainable development'. The process is also strongly driven by the Lisbon agenda for growth and jobs.

The purpose of this paper is to examine the strengths and weaknesses of these EU policy developments in relation to the achievement of the protection of biodiversity in Europe's regional seas⁹ in order to make recommendations addressing these. The paper initially begins with a short overview of the policy initiatives and their current status. It then examines their positive and negative aspects before making some concluding recommendations. The paper does focus on biodiversity protection. It does not, therefore, analyse other issues which are relevant to many stakeholders, such as the nature of public participation, etc, which although critical to implementation, are excluded for reasons of the time available for analysis.

2. STATUS REPORT

2.1 EU Marine Strategy Directive

The proposed Directive seeks to achieve or maintain good environmental status of marine waters through the development and implementation of marine strategies by the Member States (Article 1). CPA states that such strategies 'shall apply an ecosystem-based approach to the management of human activities while enabling the sustainable use of marine goods and services'. It shall also serve as a vehicle for the integration of environmental concerns into other policy areas. The Directive would apply to 'marine waters' 'measured extending to the outmost reach where a Member State has and/or exercises jurisdictional rights' (excluding certain overseas territories).

The proposed Directive takes a regional approach to ensure international collaboration on marine protection. Member States would be required to develop strategies for their respective waters within each Marine Region, aiming to reach the Directive's objective of achieving good environmental status in the Marine Environment by 2021 (although EP has indicated it would wish to bring forward this timetable). 'Good environmental status' would be determined by Member States for each Marine Region/Sub-region, based on criteria and methodological standards which would be adopted by the Commission via a comitology procedure.

The proposed regional approach is framed around the three main Marine Regions in European waters (Article 3): the Baltic Sea; the North East Atlantic Ocean; and the Mediterranean Sea.

In addition, the proposed Directive suggests that NE Atlantic and Mediterranean can be broken down into sub-regions in order to take into account the specificities of a particular area. The proposal does not list the Black Sea. However, COR, EP and CPA all note the need to add this sea. Given the accession of Bulgaria and Romania at the beginning

of 2007, the time for inclusion of the Black Sea has now arrived.

The proposed Directive establishes a process to be undertaken by Member States, comprised of a preparation stage to be completed within six years of its entry into force, and a programme of measures to be developed by 2016 and in operation by 2018. The preparation stage would include:

- conducting an initial assessment;
- determination of good environmental status;
- establishing environmental targets;
- development and entry into operation of a programme of measures; and
- drawing up a monitoring programme.

Thereafter, Member States would have to review each of these elements every six years.

The CPA also follows this proposed timetable, although it also states that Member States should adopt an earlier operationalisation of a programme of measures where 'urgent action' is needed (new Article 2a, CPA). However, EP stated that it was 'concerned at the extended timetable' and argued for harmonisation with the timetable of the water framework Directive. COR also stated that 'with the necessary goodwill, good environmental status can be achieved within a much shorter time frame'. It is likely, therefore, that the question of the timetable for implementation will form an important area of debate between the EU institutions over the coming months.

Member States should make every effort to co-ordinate within their Marine Region or Sub-Region, and be encouraged where practical and appropriate to build upon existing programmes, structures and international agreements. The CPA (Article 5) introduces the extension of co-ordination to land-locked countries 'in order to allow Member States...to meet their obligations'. This does not impose a direct binding obligation on land-locked countries as they do not have strategies or programmes of measures to implement. However, where such countries are discharging directly to water, it is

⁶ For further details of the elements of the draft proposal the reader is referred to: Farmer, A.M. 2006. A European Union Marine Strategy Directive. *The Journal of International Maritime Law*, 12: 122-133.

⁷ http://eur-lex.europa.eu/LexUriServ/site/en/com/2006/com2006_0275en01.pdf

⁸ Renewed EU Sustainable Development Strategy, June 2006: http://ec.europa.eu/sustainable/docs/renewed_eu_sds_en.pdf

⁹ The Directive would apply to waters and sea-bed of those waters over which a Member State has jurisdictional rights, except for certain overseas territories. The Green Paper has a wider scope, but this paper will focus on those areas which would be subject to the Directive. Note that EP 'deplores' the lack of reference to marine waters of overseas territories.

likely that impacts could be addressed through river basin management plans under the water framework Directive. However, if impacts are via the air, for example, then voluntary co-operation would be required to tackle any problems (or action through Community-wide instruments). It is also important to note that Member States might seek co-operation with other Member States that are not littoral states of the region/sub-region in that they have flag vessels in that region/sub-region. How such co-operation would take place is, however, not addressed.

Under the proposal, national programmes would have to be approved by the Commission, which would publish a first implementation report by 2021 at the latest. However, the CPA removes the requirement for Commission approval, reducing it to an advisory status (Article 15). This change, if accepted, would mean that the Commission would only judge a programme by it subsequently failing to achieve good environmental status, rather than criticising the programme at the outset. It is likely, therefore, that this issue will form an area of disagreement between the institutions as adoption proceeds. It is also possible that measures could be adopted at EU level, such as through the comitology procedure.

The proposal foresees that there may be particular situations and areas where it would be impossible to achieve good environmental status. The CPA expands upon this (Article 13), including natural causes, *force majeure*, action by other countries, for which the Member State shall take ad hoc measures as appropriate. The exclusions also include modifications to waters from action taken 'for reasons of overriding public interest that outweighed the negative impact on the environment, including any transboundary impact'. This exemption is paralleled in other Directives, although it is not stated:

1. How the benefits and disbenefits of action are to be determined, particu-

larly weighing up immediate and longer term costs and benefits.

2. How the overriding public interest of one Member State is to be compared with the disbenefits occurring in another Member State due to trans-boundary impacts.

The Directive was proposed in October 2005. Since then there has been considerable debate over its content by many interested parties. The first formal stage of the co-decision process was the Opinion of the European Parliament reached in November 2006. The amendments passed included: bringing forward to 2017 the deadline to achieve good environmental status; setting specific criteria for the definition of "good environmental status"; allowing the possibility of fast-track pilot projects for regions such as the Baltic. The amended Directive also aims at a better integration of environmental concerns into other Community policies, enabling Member States to require EU-wide action if, for example, fishing activities are proving an obstacle to their efforts to achieve 'good environmental status'. The Council has already (18 December 2006) reached political agreement on its views on the proposal (excluding the preamble) and its formal Common Position is expected in the first half of 2007. Further consideration by the Parliament and Council will take much of 2007, particularly if the proposal results in a Conciliation Committee, which is likely given the respective views of the institutions.

2.2 EU Maritime Green Paper

The maritime Green Paper launches a consultation in 2006 to inform the Commission's vision of a 'holistic' future integrated Maritime Policy. Consequently, the Green Paper covers a broad range of issues, including fisheries; energy and climate change, including renewables; spatial planning; and ecosystem management. While sustainable development is quoted as the underlying rationale of the Green Paper, the Green Paper appears to be geared towards the Lisbon Agenda for competitiveness, jobs and growth. For instance, technology devel-

opment and the international leadership role that the EU can play are at the forefront of much of the discussion. The Lisbon Agenda is presented as the basis for one of the pillars of a future maritime policy, with the second pillar being the ecosystem approach outlined in the Thematic Strategy for the Marine Environment. The Green Paper also states that it seeks to 'stimulate growth and jobs under the Lisbon agenda in a sustainable manner that ensures the protection of the marine environment'.

In practice, the frequent reference to the objectives of the Lisbon agenda means that a majority of the Green Paper's 56 questions are mainly focused on the economic and social aspects of sustainable development, although the environment, and in particular ecosystems, are raised throughout the text as a factor which needs attention. For instance, the importance of protection of the environment and implementing sustainable practices are mentioned in relation to fisheries, aquaculture, shipbuilding, tourism and quality of life, development of renewable energies, blue biotechnology, and coastal risks such as flooding. In addition, one of the Green Paper's seven sections is specifically dedicated to sustainability, including a chapter on the importance of the marine environment and the sustainable use of marine resources (section 2 and in particular 2.2). Moreover, there is an opportunity to promote the importance of biodiversity in relation to Integrated Coastal Zone Management (ICZM) (section 3.4 – Managing the Land/Sea Interface) and spatial planning (section 4.2). It should, however, be born in mind that Green Papers are frequently more ambitious than White Papers. Consequently, the risk remains that such opportunities will be overruled by non environmental stakeholders as a result of the current consultation and the subsequent policy processes. It should also be noted that the environment is not mentioned in relation to skills and training (section 2.5).

Many of the 56 consultation questions are directly or indirectly linked to biodi-

versity, however six of them can be singled out as particularly relevant:

- How can maritime policy contribute to maintaining our ocean resources and environment? (section 2.2)
- How can a maritime policy further the aims of the Marine Thematic Strategy? (section 2.2)
- What further steps should the EU take to mitigate and adapt to climate change in the marine environment? (section 2.4)
- How can innovative offshore renewable energy technologies be promoted and implemented? How can energy efficiency improvements and fuel diversification in shipping be achieved? (section 2.4)
- What is needed to realise the potential benefits of blue biotechnology (section 2.4)
- How should the Common Fisheries Policy be further developed to achieve its aim of sustainable fisheries? (section 2.7)

Two sections of the Green paper are devoted to research and funding (sections 2.3 and 4.3). In relation to ongoing research initiatives, notably in new technologies, the Green Paper highlights the lack of coordination with resulting duplication of research. It calls for a common vision and the development of a European coordination strategy for maritime research, on which stakeholders are invited to give their opinion. As regards funding, the Green Paper emphasises the importance of EU funds such as the ERDF and the EFF for biodiversity and sustainable fisheries, in particular in outermost regions. It also recognises the need to discuss how funding instruments can support an integrated maritime policy and how to distribute cost burdens across regions relating to, for instance, ship-source pollution and flood protection.

The policy processes for an integrated Maritime Policy are discussed in section 5.1 and stakeholders are asked how it can be implemented in the EU and which principles should underlie it. The Commission proposes the establishment of a

Council horizontal working group dealing with international legal questions to support maritime related cross-sectoral discussions. The Commission also intends to carry out a review of potential contradictions and synergies in existing EU policy. In addition, the very first question of the Green Paper gives the opportunity to comment on whether the EU should have an integrated Maritime Policy at all (section 1).

The Commission signals that it may be looking to increase its competence in at least two maritime areas. This includes an intention to review the role and status of the EU in international organisations dealing with maritime affairs, considering that often the issues under consideration fall within the exclusive competence of the Community and that consensus-building within the EU has proven difficult on some important issues. In addition, the Green Paper refers back to a 2002 recommendation from the Commission to increase the role of the EU in the IMO (SEC(2002)381).

The launch of the Green Paper marked the beginning of a one year consultation, running until 30 June 2007. The Commission will then come forward with a Communication summarising the results of the consultation process and proposing the way forward. DG FISH's work programme for 2007 (published on 25 October 2006) announces that a Communication on 'The way forward for a maritime policy: Political conclusions on the consultation regarding the Green Paper' will be adopted by November 2007. The Communication would include follow up actions that can be implemented in the short term. It should be noted that while the Commission talks of 'an integrated maritime policy' it is highly unlikely that only one single legislative proposal will be the product of ongoing consultations. In the recent 'Open Call for Tender. — Studies in the fields of the Common Fisheries Policy and Maritime Affairs'¹⁰, DG Fish and Maritime Affairs included legal studies with the aim to

ensure the ability to assess the feasibility and the best format for proposals of a legal nature under the future maritime policy.

3. ANALYSIS OF THE MSD AND MGP IN RELATION TO ENVIRONMENTAL CONCERNS

3.1 Positive elements

3.1.1 Marine Strategy Directive

The proposed Directive has a number of positive aspects which are to be welcomed. These include:

- It adopts an ecosystem-based approach as the fundamental principle for marine protection (referred to in the Thematic Strategy and explicitly added by CPA in Article 1(2)).
- It provides the first attempt under EU law to bring a number of maritime protection issues together in a single strategic approach.
- It builds on the approach taken in the water framework Directive regarding approach, planning, timetable, etc. This improves harmony and consistency between legislation.
- It does not undo the work of the regional seas Conventions, but seeks to build on these.
- It acknowledges the need for greater understanding of the functioning of marine ecosystems and the pressures on them, requiring new monitoring and analysis.

The importance of a strategic, ecosystem approach must be emphasised. The complexity and interconnectivity of marine systems mean that an integration of all policies that may have an impact on the marine environment is required. However, this presents many challenges, including:

- How far we understand these systems (and, therefore, adopt precautionary measures where full knowledge is lacking — note that neither the proposal nor CPA mentions the precautionary principle).
- The complexity of the different social, economic and political interests in-

¹⁰ www.ec.europa.eu/fisheries/tenders_proposals/fish_2006_09_en.htm. See, *inter alia*, pages 11-14.

volved in their interaction with the systems.

- The complexity of competencies in this area.

As will be seen, the proposed Directive begins by highlighting these principles, but the scope of its stated obligations on the Member States mean that it fails to carry them through. This is most obviously seen in relation to fisheries (see below).

3.1.2 Maritime Green Paper

The maritime Green Paper is supportive of the marine Thematic Strategy and proposed Directive. In particular, it makes clear that a future maritime Policy relies upon the MSD to implement an ecosystem based approach to maritime activities. Consequently, the Green Paper could be used as a vehicle to promote the MSD and Thematic Strategy, in securing its adoption, strengthening the proposal, and develop future supporting instruments.

In addition to providing a broader context for the implementation of the MSD, the fact that the MSD is meant to be one of two pillars of a future maritime policy provides an argument for taking into account ecosystem concerns into all maritime policies, for instance fisheries, spatial planning, energy and maritime transport policies. This is further strengthened by the statement in relation to the other pillar, the Lisbon Agenda, that the Green Paper seeks to 'stimulate growth and jobs under the Lisbon agenda in a sustainable manner that ensures the protection of the marine environment'.

Furthermore, policy coherence and international policy commitments and leadership are stressed heavily in the Green Paper. It appears to have the potential to develop the governance framework for the regulation of ocean users. As suggested by the Green Paper and the proposed Directive, it could therefore further institutionalise processes such as spatial planning and an ecosystem-based approach, the benefits of which could be significant. Suggestions to improve institutional coordination

of policy processes include the establishment of a Council horizontal working group dealing with international legal questions to support maritime related cross-sectoral discussions. More immediately, the Commission intends to conduct a review of existing EU legislation affecting maritime sectors and coastal regions, to identify possible policy contradictions or potential synergies. Stakeholders, including social partners, are invited to identify and explain their concerns and suggestions for improvements in this respect.

In practice, however, there are significant challenges related to environmental policy integration. This includes the need to increase communication and coordination of the high number of actors and sectors involved in maritime activities; and differences regarding the types of policies, decision procedures at different levels of administration, and the EU's varying competence in different areas of maritime policy. While environmental integration is an important approach to protecting the environment in the long term, securing a robust marine strategy Directive is arguably of more immediate concern.

As opposed to the MSD, the broader Green Paper includes fisheries policies. The discussion on fisheries is largely set in the light of the Lisbon agenda, with the main motivation for improving the state of fish stocks the marine environment is job creation. Nevertheless, this is an opportunity to discuss the issue of sustainable fisheries and the CFP, and the Green Paper poses two relevant questions in this respect:

- How should the Common Fisheries Policy be further developed to achieve its aim of sustainable fisheries? (section 2.7)
- What action should the EU undertake to strengthen international efforts to eliminate IUU (illegal, unregulated and unreported) fisheries? (section 5.3)

3.2 Negative elements

3.2.1 Marine Strategy Directive

The proposal has drawbacks:

- It does not provide the criteria for determining good environmental status. This is also a criticism of the proposal from EP and the CPA goes some way to addressing this.
- It has limited scope in addressing issues which are of Community competence, but which are critical in delivering an ecosystem-based approach to marine protection.
- It does not encourage Member States to produce joint marine strategies for regions/sub-regions which would encourage holistic and integrated thinking and measures.
- The repeated use of 'opt-outs' on costs (see also CPA Articles 4(3) and 12(3)) etc, mean that Member States will have significant avenues for avoiding taking necessary action to protect marine ecosystems (and removal by CPA of prior approval of programmes of measures by the Commission might encourage this further).

The failure adequately to define the elements of good environmental status in the proposal is an example of poor legal development by the European Commission. By this failure we mean that no criteria are provided by which good environmental status can be judged. Given that this would form the target of all actions under the Directive, to propose a piece of legislation without defining such a role is highly suspect. In contrast, the water framework Directive provided detailed criteria for good ecological status for lakes, rivers, transitional and coastal waters. Indeed, under the Common Implementation Strategy of the water framework Directive further work has been undertaken examining this, including on coastal waters. It should also be noted that, in developing the proposed MSD, a draft set of criteria were developed and nearly formed part of the proposal. The EP also called for inclusion of a common EU-wide definition of good

environmental status and inclusion of generic qualitative descriptors and standards for the recognition of good environmental status. The CPA, going further, has added a new Annex (Annex VI) providing a short list of such descriptors. These are, however, very general in outline and fall short of the detailed descriptors given for good ecological status for a wide range of water body types¹¹ in the water framework Directive¹². Given the views of both Parliament and Council, it is likely that some inclusion of general qualitative descriptors will occur in the final adopted text. Under both the proposal and CPA, further development of descriptors on good environmental status would be produced through subsequent comitology. All in all this is a sub-optimal approach, for the following reasons:

- Comitology is a less transparent process than the current co-decision route, even though it is now open to greater Parliamentary scrutiny since adoption of the Comitology Decision (1999/468 and 2006/512).
- The adoption of any legislation without knowing what it is supposed to deliver should always be avoided. For example, it is impossible to undertake any sensible form of impact assessment of the proposal. Therefore, the proposed MSD cannot be viewed as meeting basic criteria for 'better regulation'.

¹¹ Note that while it can be argued that marine areas around Europe show wide variation (brackish Baltic, NE Atlantic, Mediterranean, etc) and, therefore, that it is difficult to include them in a single legislative document, the water framework Directive already covers many such waters. If the lack of inclusion of such detailed criteria in the MSD is because a lesson has been learnt from implementation of the water framework Directive, this ought to be stated. Otherwise greater harmonisation should be sought.

¹² Note that EP has called generally for greater harmonisation between Directives – EP 'considers it important that the objectives, measures, language and concepts used in the Marine Strategy Directive and other directives concerning the marine environment, such as the Water Framework Directive and the Habitats Directive, are harmonised to achieve greater clarity and facilitate co-ordination between those directives.'

- The work undertaken on good ecological status of coastal waters could have formed some foundation for defining good environmental status. Failure to do this could lead to suspicions on how the two Directives will integrate.

The proposed Directive would provide a mechanism for integration with the general objectives of the habitats Directive, although there are limitations on this. For example, while the CPA refers to provisions of the habitats Directive in Article 12(3a) and Annex II (Table 1), it does not address expressly the species provisions of the habitats Directive which would, for example, be important for cetacean conservation. In the preamble, the proposal recognizes the commitments made under the CBD to create a global network of marine protected areas (MPAs) by 2012. Rather than creating new legal provisions or requirements for designating MPAs, the proposed Directive supports the implementation of existing legislation, notably the habitats Directive, and designation of Natura 2000 sites. Member States are not *required* to designate further MPAs under the proposed Directive (although the CPA explicitly refers to MPA designation under existing EU law or international and regional agreements – Article 12(3a)). Rather, Member States are required to 'identify measures' that need to be taken in order to achieve good environmental status, 'taking into consideration' the types of measures listed in Annex V of the proposal. Of the measures in Annex V, the most relevant to MPAs are 'Spatial and temporal distribution controls: management measures which influence where and when an activity is allowed to occur' as well as mitigation and remediation tools. The CPA (Article 12(3a)) refers to areas designated under the birds and habitats Directives as 'measures' that they 'should' include. Interestingly the CPA also states that 'Member States should ensure that these areas contribute to a coherent and representative network of marine protected areas'. It is not clear what these amendments of the CPA would deliver. The 'coherent' or

'representative' nature of any network would depend upon the EU law or Convention under which such sites are designated. However, it is important that in developing and implementing marine strategies MPAs are fully taken into account.

The proposed Directive places obligations on Member States to undertake actions over which they have jurisdiction. This is the common feature of all Directives. The problem for the marine environment is that Member States have transferred some of that competence to the Community, most notably in relation to fisheries. It should be noted that fisheries issues are also not simply affected by questions of competence. Their political sensitivity also results in legislative changes. This is seen most obviously in the water framework Directive. In Annex V criteria are provided to define good ecological status and these criteria are divided, *inter alia*, into different groups of biota (macrobenthos, phytoplankton, etc). For lakes, rivers and transitional waters fish are included as a group. However, for coastal waters, they are not. The decision was political.

The contribution of the Directive to CFP environmental integration is minimal, with fisheries management barely touched upon (except in so far, under CPA, that Member States can inform the Commission of problems and make recommendations). Fish populations are included as one of the biological elements that Member States are required to include in their assessments of their European marine waters, together with commercial and recreational fishing as pressures (Annex II of proposal and CPA) (CPA introduces 'commercial fishing' and 'physical damage' as specific pressures). Which fish stocks should be monitored is not specified. Many commercially exploited stocks are already assessed for fisheries management, although the proportion of exploited stocks assessed varies by regional sea. The potential expansion of monitoring to include recreational fishing would be new, as it is not currently required under the CFP. It is also important to note that

CPA (Annex VI) in introducing generic qualitative descriptors of good environmental status includes the descriptor that 'populations of all commercially exploited fish and shellfish are within safe biological limits'.

Member States are required to identify measures to achieve good environmental status in light of the assessments. However, no provisions are provided for Member States to take measures related to fisheries management. The preamble justifies this absence on the basis that measures regulating fisheries management can only be taken in the context of the CFP basic Regulation (2371/2002). While this may be the case, with EU fisheries management largely being an area of EU exclusive competence, this approach contrasts with the habitats Directive, which requires Member States to avoid deterioration of natural habitats and disturbance of designated species in Natura 2000 sites but does not explicitly single out fisheries in the preamble as an area in which Member States can not take action. While providing context, the preamble does not carry legal weight, however, so the Directive nonetheless creates the same dilemma as the habitats Directive, whereby Member States are required to protect the marine environment but find their hands are tied in managing fishing, more broadly. Member States, however, do have some, albeit limited, delegated powers under the CFP to adopt measures restricting the activities of fishing vessels. Those powers are set out in Articles 8, 9 and 10 of Regulation 2371/2002 and Articles 46(1) and 45(2) of Regulation 850/98.

The information Article (Article 14) provides a mechanism for Member States to inform the Commission of issues which cannot be tackled by national level measures, or which are linked to another Community policy of international agreement. Where Community level action is required, Member States shall make appropriate recommendations. The Commission (CPA) would have six months to respond. An example of such an issue is fisheries. This Article is weak,

however. At a minimum, the Commission could be expected to acknowledge the information submission, preferably with a proposal for a response, be it legislative or otherwise. As it stands, the Directive adds nothing to the ability for Member States to take fisheries management measures or to the requirements for any EU level response. Aside from additional information gathering requirements, the Directive therefore adds little to the CFP. This shortcoming is particularly notable given that fisheries, together with climate change, were identified as one of the two most important pressures on the marine environment in the explanatory memorandum of the proposed Directive.

The proposal (Article 5) requires co-ordination of activities by the Member States. However, in the production of marine strategies, there is no provision for Member States to produce joint strategies, i.e. single documents covering regional seas. This is amended by CPA which stresses co-ordination where urgent action is needed and agreeing on a 'plan of action' in relation to marine strategies (not necessarily a single joint strategy). It has been argued in the debate on the proposed Directive that Member States cannot be legally obliged to work together. However, the following box contrasts the wording of the proposal and CPA with the 2000 water framework Directive and the Common Position of the Council on the proposed floods Directive (reached one month prior to CPA). In both cases Member States are certainly encouraged to produce joint planning documents and if this is legally acceptable under these two Directives, it must also be so acceptable under the marine strategy Directive.

Comparing transboundary planning requirements

Water framework Directive (Article 13(2)). *'In the case of an international river basin district falling entirely within the Community, Member States shall ensure coordination with the aim of producing a single river basin management plan. Where such an international river basin management plan is not produced,*

Member States shall produce river basin management plans covering at least those parts of the international river basin district falling within their territory to achieve the objectives of this Directive.'

Common Position of the Council on the proposal for a Directive on the assessment and management of floods (23 November 2006). *'Where an international river basin district or unit of management referred to in Article 3(2)(b) falls entirely within the Community, Member States shall ensure coordination with the aim of producing one single international flood risk management plan, or a set of flood risk management plans coordinated at the level of the international river basin district. Where such plans are not produced, Member States shall produce of flood risk management plans covering at least the parts of the international river basin district falling within their territory, as far as possible coordinated at the level of the inter-national river basin district.'*

Marine strategy Directive proposal (Article 5). *'Member States with marine waters within the same Marine Region or Sub-Region shall co-ordinate their actions.'*

CPA. (Article 4(2a)). *'Member States having borders on the same Marine Region or Sub-Region covered by this directive, where the status of the sea is critical to an extent that urgent action is needed, should endeavour to agree on a plan of action according to the first paragraph' [the marine strategy].*

Taking account of the initial assessment and environmental targets, Member States shall develop a programme of measures in order to achieve good environmental status. The programme shall 'give due consideration to sustainable development' and to the social and economic impacts of the measures envisaged. Member States shall also ensure that measures are cost-effective, technically feasible and shall carry out impact assessments, including detailed cost-benefit analyses, prior to the introduction of any new measure. This requirement to take account of social and economic

issues was significantly changed since the draft proposal (Article 12 of proposal and CPA, unchanged). The CPA also states (Article 4(3)) that Member States shall not be required to take steps 'where the costs would be disproportionate taking account of the risks to the marine environment'. It is unclear what 'due consideration' means or what judgement is to be applied in determining whether a measure is 'cost-effective'. As a result it is possible that Member States will be able to justify most failures to take action to protect the marine environment. This approach is, therefore, a major drawback in the proposal. Overall, it is not, of course, inappropriate to allow for cost-benefit assessments or allow for overriding reasons for not meeting objectives (as the habitats Directive does). What is problematic is that the wording would make interpretation open to argument and compliance enforcement by the Commission difficult. As noted earlier, the CPA removes the requirement for the Commission to approve the programmes of measures, thus also weakening compliance assessment.

3.2.2 Maritime Green Paper

Despite the frequent mentioning of the need for an ecosystem approach, the Green Paper can be criticised for being too heavy in its economic focus. One example is in relation to fisheries where job creation appears to be a stronger driver behind the protection of fish stocks than biodiversity concerns. In addition, references to the proposed Marine Strategy Directive are accompanied by few concrete suggestions on the types of governance changes that could or should be expected. These are left open in questions for consultees to respond to. Where specific actions are detailed in relation to environment issues, they tend to be responsive or development based rather than curative. To provide an example, growing consumption in fish and energy are discussed in terms of how to account for them or meet demand, rather than considering whether they are a problem or how to mitigate them.

Furthermore, the Green Paper relies on the marine Thematic Strategy and MSD to implement the environmental 'pillar' of the maritime strategy, including an ecosystem based approach. This represents a risk that the marine environment will suffer if the MSD Directive fails to deliver, and if the integration of environmental concerns into other sectors is not achieved. It is not clear in what way the Green Paper offers opportunities for integrating biodiversity and other environmental concerns into non-environmental maritime policies. Another danger is that policies resulting from the Green Paper will be developed separately from those related to the Thematic Strategy. The environmental results will thus largely depend on the strength and accuracy of the MSD to protect biodiversity and ecosystems, the ability of the future maritime Strategy to set up a policy framework and processes where environmental concerns can be taken outside the scope of the MSD and, not least, on the political will of Member States to accept the importance of a healthy marine environment.

Finally, there is a risk that if not correctly balanced between the three pillars of sustainable development, the maritime policy results in greater natural resource use as a result of general support of the maritime economy. It could thereby undermine efforts to meet the objectives of the proposed MSD, that is, to achieve good environmental status.

3.3 Outstanding issues

Fundamentally, the key question is what are the main threats to ecosystems/biodiversity in Europe's regional seas and will these policy developments overcome these threats? These policy developments will help to understand the problems, and set them in a more coherent framework. However, they will not tackle many of them, or tackle many better than is already the case.

For example, fisheries are clearly a major threat to the maintenance of marine ecosystems and is fully outside of the proposed Directive as it stands. Although the European Parliament would seek to

bring some control within the scope of the Directive, this will be resisted by both Commission and Council. Secondly, a further threat is large infrastructure construction such as with oil and gas exploitation. If this were to occur on sites designated under the habitats or birds Directives, then these Directives provide greater protection than the proposed MSD. If they occur outside of designated sites, it will be interesting to see on how many occasions the cost-benefit assessment will result in an activity not going ahead.

The MGP argues that the MSD will form the environmental pillar of the EU's maritime policy. If so, this will result in a depleted environmental component. The MSD is not sufficiently comprehensive to provide such a 'pillar'. It does not have the policy tools necessary to tackle important ecosystem protection measures. It is clearly essential, for example, that the CFP is also characterised as part of this environmental 'pillar'.

4. CONCLUSIONS AND RECOMMENDATIONS

4.1 Integration of biodiversity aspects into the MSD and MGP

An EU marine strategy Directive would be a step forward in the EU level of protection of the marine environment. The ecosystem-based approach of the Thematic Strategy and CPA that is advocated provides a framework for addressing the major pressures on Europe's seas. It could also act as an important instrument for the integration of EU, regional and national policies affecting marine issues. Even with its limitations, therefore, we do recommend that a proposed marine strategy Directive is supported.

Having said this, it is important to note the limitations and omissions in the draft proposal. Importantly, there are issues that are not addressed and which Member States cannot address on their own in protecting marine biodiversity. This is particularly so in the conservation of fisheries, which are of critical concern in ensuring sustainable marine ecosystems.

tems. We, therefore, recommend that policy makers examine in detail the provisions of the proposal to ensure that it contains sufficient obligations on Member States to deliver its environmental objectives.

The proposal and CPA also only promote co-operation between Member States, rather than allow for the production of single marine strategies for regions or sub-regions. We, therefore, recommend that the requirements for trans-boundary co-operation be strengthened in order to provide a more coherent framework for marine protection.

The definition of good environmental status will be central to the weight of the Directive. This is poorly defined. This creates delays and is inconsistent with better regulation objectives. We recommend that serious consideration is given to the development of criteria for good environmental status for inclusion in the Directive itself. These criteria should also clearly address issues related to marine biodiversity, including biodiversity's role in maintaining the natural structure and functioning of marine ecosystems.

The proposal remains unclear over the balance that Member States are to strike between economic development and environmental protection. Currently, this lack of clarity could lead to lack of initiative by some Member States and difficulties in enforcement by the Commission. We recommend that the EU institutions decide the level of protection that they want and clarify this in the Directive, rather than leaving it vague and open to interpretation as a 'compromise'.

The maritime Green Paper offers an opportunity to discuss the integration of biodiversity concerns into all relevant sectors. The consultation process offers the possibility to point out the need for the maritime Green Paper not only to rely on the proposed strategy Directive in environmental matters due to its weaknesses discussed above. However, there is a need to strike the right balance between promoting the MSD in order not to undermine its role in the context of the Green Paper, and arguing for additional

environmental measures under the Green Paper. Keeping in mind that the Lisbon agenda is a strong driver behind the Green Paper, it is also essential to illustrate how the MSD and any additional environmental measures add value also to the economic and social dimensions of a future maritime strategy.

Considering the extremely broad scope of the Green Paper and the number and diversity of the stakeholders involved, it is recommended to focus on concrete problems and constructive solutions for the areas which are most relevant to nature and biodiversity. For instance, relevant questions to discuss may include how spatial planning should be taken forward in practice and how an ecosystem based approach could be institutionalised. Other relevant areas include fisheries, renewable energy and maritime transport.

The Green Paper provides an opportunity to discuss sustainable fisheries under the CFP and to ensure that the link to biodiversity and eco-systems becomes one of the major drivers of transforming fisheries policy. This also represents an early opportunity to initiate discussions in preparation for the CFP review due by the end of 2012.

4.2 Minimising the adverse impacts of these policies on biodiversity

The proposed Directive does not add anything specific to sites protected under the birds and habitats Directives. As a result, we recommend that there is renewed effort by all parties in taking forward the implementation of Natura 2000 in marine areas, without waiting for the adoption of another Directive, and that there is no undue reliance on the proposed Directive to deliver additional safeguards.

The current institutional framework for marine protection in Europe is inadequate. However, the Thematic Strategy does not seek to replace the work of the conventions, but stresses the utility of building on existing structures. The proposal contains a provision that would require Member States to 'as far as pos-

sible, build upon existing programmes and activities developed in the framework of structures stemming from international agreements', but omits explicit reference to the substantive obligations resulting from those agreements. The CPA introduces clearer links to obligations under the Conventions (as noted above for MPAs). Also in contrast with the water framework Directive, the operative provisions of the proposed marine strategy Directive do not explicitly refer to the objectives of the regional seas conventions as regards prevention and elimination of marine pollution. However, the Directive could nevertheless provide benefits over and above the existing regional conventions, especially for the Mediterranean where there has been a conspicuous lack of progress in bringing recently agreed Protocols or amendments to existing Protocols into force. We, therefore, recommend that more explicit reference is made to the commitments Parties have made under the regional conventions to enhance integration of these instruments. This could be achieved along the lines of the CPA reference to MPAs under such Conventions, where commitments 'should' be included a 'measures' within the programmes of measures.

The contribution of the proposed Directive to CFP environmental integration is minimal, with fisheries management barely touched upon. EU fisheries management is largely an area of EU exclusive competence. Nonetheless, the habitats Directive requires Member States to avoid deterioration of natural habitats and disturbance of designated species in Natura 2000 sites and does not explicitly single out fisheries in the preamble as an area in which Member States can not take action. We, therefore, recommend that further consideration is given to the interaction with the CFP and how to ensure measures are adopted that tackle unsustainable fisheries.

The proposal requires that Member States must ensure that measures are cost-effective, technically feasible, and shall carry out impact assessments prior to the introduction of new measures.

This implies that if measures to achieve good environmental status are considered too expensive, Member States will not be required to pursue them. This reduces the likely achievement of good environmental status. We, therefore, recommend that close scrutiny is given to the implications of these requirements on the Member States to determine how easily they could be used to justify no, or reduced, action on marine protection.

5. SUMMARY OF RECOMMENDATIONS

The following recommendations are made:

1. We recommend that a proposed marine strategy Directive is supported.
2. We recommend that policy makers examine in detail the provisions of the proposal to ensure that it contains sufficient obligations on Member States to deliver its environmental objectives.
3. We recommend that the EU institutions decide the level of protection that they want and clarify this in the Directive, rather than leaving it vague and open to interpretation as a 'compromise'.
4. We recommend that serious consideration is given to the development of criteria for good environmental status for inclusion in the Directive itself. These criteria should also clearly address issues related to marine biodiversity, including biodiversity's role in maintaining the natural structure and functioning of marine ecosystems.
5. We recommend that more explicit reference is made to the commitments Parties have made under the regional conventions to enhance integration of these instruments.
6. We recommend that there is renewed effort by all parties in taking forward the implementation of Natura 2000 in marine areas, without waiting for the adoption of another Directive, and that there is no undue reliance on the proposed Directive to deliver additional safeguards.
7. We recommend that more explicit reference is made to the commitments Parties have made under the regional conventions to enhance integration of these instruments.
8. We recommend that further consideration is given to the interaction with the CFP and how to ensure measures are adopted that tackle unsustainable fisheries.
9. We recommend that close scrutiny is given to the implications of these requirements on the Member States to determine how easily they could be used to justify no, or reduced, action on marine protection
10. We recommend that the maritime Green Paper consultation is used as an opportunity to discuss the integration of biodiversity concerns into all relevant sectors. While supporting the MSD, it should also be pointed out that there is a the need for the maritime Green Paper not only to rely on the proposed MSD in environmental matters due to its weaknesses.
11. We recommend that any response to the maritime Green Paper not only takes into account biodiversity aspects, but also illustrates the link between biodiversity and the economic and social dimensions of a future maritime strategy, for instance the economic value of eco-system services and the value of biodiversity for blue biotechnologies.
12. We recommend that any response to the consultation focuses on concrete problems and constructive solutions for the areas which are most relevant to nature and biodiversity. Relevant questions to discuss include how spatial planning should be taken forward in practice and how an ecosystem based approach could be institutionalised. Other relevant areas include fisheries, renewable energy and maritime transport.
13. We recommend that the maritime Green Paper is used as an opportunity to discuss sustainable fisheries under the CFP and to ensure that the link to biodiversity and eco-systems becomes one of the major drivers of transforming fisheries policy. This also represents an early opportunity to initiate discussions in preparation for the CFP review due by the end of 2012.

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High Seas Biodiversity Conservation: Challenges and Opportunities for Meeting the 2010 and 2012 Targets

by Kristina M. Gjerde*

1 INTRODUCTION

This report highlights challenges and opportunities for the European Community (EC) and the Member States to achieve the targets of 2010 and 2012 for halting the loss of marine biodiversity and for establishing representative networks of marine protected areas (MPAs) in areas beyond national jurisdiction ("ABNJ"). Areas beyond national jurisdiction include the "high seas" water column as defined in article 86 of 1982 United Nations Convention on the Law of the Sea (UNCLOS)¹ and the seabed "Area" beyond the outer limits of states' legal continental shelf as defined in UNCLOS article 76.² For brevity's sake these are sometimes jointly referred to as the "High Seas".

Section 1 of this report sets the context for future work by briefly surveying the major threats to biodiversity in ABNJ.³ Section 2 reviews the legal issues and

challenges that may hamper conservation of biodiversity in ABNJ. Section 3 focuses on opportunities to meet the 2010 and 2012 targets within EC and the Member States internal sphere, through informal collaborative initiatives with other states and partners, and through existing bodies and agreements. It does not address the potential role and value of an UNCLOS Implementation Agreement, as that is the subject for another paper. Annex I consolidates the recommendations as a basis for discussion and possible adoption by EC and/or the Member States as appropriate in furtherance of the 2010 and 2012 targets.

The proposed EU Marine Strategy Directive seeks to implement an integrated, ecosystem-based approach to the management of human activities in the marine environment. In addition to the Marine Strategy Directive, the Commission's Maritime Policy Green Paper also recognises the need for urgent and integrated action to maintain, protect and restore oceans and seas, while enabling sustainable development and a growing maritime economy. This report seeks to build on this vision at the global level, to address the 64 percent of the oceans that are beyond national jurisdiction.

The threats confronting biodiversity in ABNJ have mounted rapidly in the 25 years since UNCLOS, the so-called "constitution for the oceans", was agreed. Overexploited coastal resources, escalating demands for fish, energy and trade and improved technologies for exploration and exploitation all serve to increase the vulnerability of the open oceans and deep seabed to human impacts. Fragile deep sea ecosystems such as seamounts, cold water corals and hydrothermal vents were scarcely known when UNCLOS was negotiated. Advanced technologies now enable deep

sea fishing, bioprospecting, energy development, marine scientific research and even tourism to take place amongst these fragile ecosystems at depths of 1,000m and more. Fishing and shipping remain the primary human activities of the high seas, but their volume and cumulative effects have increased greatly. Illegal, unreported and unregulated (IUU) fishing and uncontrolled or poorly regulated fishing activities are undermining ecosystem resilience and food security. Intensifying shipping and other maritime activities produce underwater noise, invasive alien species, pollution and marine litter, further threatening biodiversity in ABNJ.

The effects of climate change have intensified the need for rapid and comprehensive action to protect, restore and maintain biodiversity in ABNJ. Large variations in temperature, ice cover, ocean currents and nutrient cycles are predicted to have negative impacts for most species and ecosystems. Increased acidity due to rising dissolved CO₂ levels in seawater will likely impair the growth of deep sea corals, mollusks, and coccolithophores, tiny plankton that form the basis of food webs.⁴ The effects of climate change on the oceans may in fact intensify the feedback loop that drives further climate change, thus accelerating and amplifying world-wide impacts. At the same time, proposals for ways to store or sequester CO₂ in the oceans through iron fertilization (to enhance primary productivity) and deep sea disposal could also have significant

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¹ Under UNCLOS article 86, the "high seas" are defined by what they are not. The high seas are 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.

² The legal continental shelf of a coastal state, as defined in UNCLOS article 76, comprises the sea-bed and subsoil to the outer edge of the continental margin (including the shelf, the slope and the rise), or to the distance of 200 nautical miles from the coastal state baselines.

³ For a more detailed review of environmental threats and their impacts, see UNEP (2006). *Ecosystems and Biodiversity in Deep Waters and High Seas: A report prepared by Kristina M. Gjerde*, UNEP Regional Sea Reports and Studies No. 178. UNEP/IUCN, Switzerland. <http://www.iucn.org/dbtw-wpd/edocs/2006-007.pdf>.

⁴ Schubert, R., Schellnhuber, H.-J., Buchmann, N., Epiney, A., Griesshammer, R., Kulessa, M., Messner, D., Rahmstorf, S., Schmid, J. (2006). *The Future Oceans – Warming Up, Rising High, Turning Sour*, WGBU German Advisory Council on Global Change. WGBU, Berlin, 110 pp.

impacts requiring due consideration.⁵ In addition to reducing greenhouse gas emissions, the German Advisory Council on Climate Change (WGBU) have stressed the importance of building resilience of marine ecosystems to climate change impacts through improved fisheries management and MPA networks.⁶

It is now clear that the management tools and governance arrangements inherited from the past will need to be updated if we are to meet present and future challenges. We need to develop and apply environmental management approaches that are effective in enhancing ecosystem resilience and conserving biodiversity while accommodating the sustainable exploitation of natural resources to meet legitimate socioeconomic needs. As on land and in coastal areas, efforts to meet these challenges will need to embrace a combination of approaches: 1) maintaining the functioning of ecosystems as a means of providing essential services to the global environment; 2) conserving habitats as a means of supporting sustainable populations of species; and 3) promoting the sustainable use of renewable resources in order to support long term benefits for humanity.

The Joint Plan of Implementation agreed at the 2002 World Summit on Sustainable Development (WSSD) sets forth targets and goals for the ocean realm, including ecosystem-based management by 2010; the development of representative networks of MPAs, based on science and consistent with international law, by 2012; and the elimination of destructive fishing practices. The EU Council in December 2006 reaffirmed its commitment to achieving these targets in ABNJ, including through an Implementation Agreement to UNCLOS.⁷

In 2006 a United Nations Ad Hoc Open-ended Informal Working Group met to study issues related to the conservation

and sustainable use of biodiversity in areas beyond national jurisdiction, and developed a summary of trends which represented the co-chairpersons' general understanding of the issues, possible options and approaches. A second meeting is scheduled for early 2008. This meeting presents an important opportunity to catalyze a series of intergovernmental discussions and negotiations to develop a rational, coherent and consistent maritime policy for ABNJ. Many nations agree on the need to promote international cooperation and coordination to achieve an integrated and precautionary approach to biodiversity conservation in ABNJ. However, not all nations yet agree that a new instrument, such as an UNCLOS Implementation Agreement, is necessary. While the need for a new instrument is being considered, there are major steps that can be taken in the near-term to improve the current status quo. The EU, which supports an Implementation Agreement, is in an excellent position to lead on both fronts.

2 REVIEW OF LEGAL ISSUES AND CHALLENGES

Major gaps in implementation, regulation and governance currently prevent states from achieving an integrated, precautionary and ecosystem-based approach to biodiversity conservation in ABNJ. These gaps must be addressed and in large part repaired in order to achieve a halt to biodiversity loss by 2010 and representative networks of MPAs by 2012. Some can be addressed through better use of existing mechanisms, while others may require new instruments and/or institutions.

2.1 Implementation Gaps

2.1.1 UNCLOS rights and duties.

High seas freedoms under UNCLOS include freedom of navigation, of overflight, to lay submarine cables and pipelines (subject to Part VI of the Convention), to construct artificial islands and other installations (subject to Part VI), of fishing (subject to section 2) and of scientific research (subject to Parts VI and

XIII).⁸ Today's problems reflect that in the exercise of these freedoms, many states have not fully implemented UNCLOS's reciprocal obligations to protect and preserve the marine environment; to conserve high seas marine living resources; to prevent, reduce and control pollution; to control the behaviour of their nationals and vessels; in addition to the general obligation to cooperate to achieve these ends.⁹ These duties are supplemented by inter alia, the 1992 Convention on Biological Diversity (CBD) and the 1995 UN Fish Stocks Agreement on Highly Migratory and Straddling Fish Stocks (UNFSA).¹⁰ The CBD calls for parties to control processes and activities carried out under their jurisdiction or control that may threaten biodiversity beyond the limits of national jurisdiction, and to cooperate directly and through competent international organizations for the conservation and sustainable use of such biodiversity.¹¹ The UNFSA further calls on states to adopt a precautionary and ecosystem-based approach, and to protect biodiversity in the marine environment, in their management of highly migratory and straddling fish stocks.¹²

2.1.2 Duty to protect and preserve the marine environment

Under general principles of international law, states have the responsibility to ensure that activities under their national jurisdiction or control do not cause damage to the marine environment beyond national jurisdiction.¹³ Under Article 192 of UNCLOS, states explicitly accepted the obligation to protect and preserve the marine environment. Subsequent treaties elaborate on this duty by incorporating a requirement to adopt a precautionary approach with respect to specific sectoral activities. For example, the UN

⁵ IPCC (2005). Carbon Dioxide Capture and Storage: Summary for Policymakers and Technical Summary. Prepared by Working Group III. Cambridge University Press. Available at : <http://www.ipcc.ch/>

⁶ Schubert, et al. above note 4.

⁷ EU Council Conclusions 18 December 2006.

⁸ UNCLOS article 87.

⁹ See e.g. UNCLOS articles. 87-94, 116-119, 192-197; 207-212.

¹⁰ 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.

¹¹ CBD articles 4(b) and 5.

¹² UNFSA articles 5 and 6.

¹³ See e.g. CBD, article 3; Agenda 21, Chapter 17.

Fish Stocks Agreement includes the obligation that “States shall apply the precautionary approach widely to conservation, management and exploitation of straddling fish stocks and highly migratory fish stocks in order to protect the living marine resources and preserve the marine environment.”¹⁴ The duty to protect and preserve the marine environment as supplemented by the precautionary approach needs to be consistently applied to ensure a halt to the loss of biodiversity in ABNJ by 2010.

UNCLOS also has specific requirements for area-based protection which have rarely been implemented in areas beyond national jurisdiction. Through UNCLOS article 194.5 states have accepted the obligation to take measures necessary 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”. At the regional and national level, many states have implemented this duty by, among other methods, creating regional agreements and national laws to establish MPAs within their zones of national jurisdiction. But as yet there is no global or consistent regional approach with respect to the establishment of MPAs in areas beyond national jurisdiction. Only recently has concern for the impacts of bottom fishing activities caused the United Nations General Assembly (UNGA) to call on states to take urgent action to implement their duty under UNCLOS articles 192 and 194.5 to prevent significant adverse impacts on fragile deep sea ecosystems (e.g. corals). This duty will need to be more widely applied to ensure a consistent and integrated approach to the establishment of networks of MPAs by 2012.

2.1.3 Duty to conserve high seas living resources

Another serious implementation gap is poor performance by states and regional fisheries management organizations

(RFMOs) with respect to the conservation and sustainable use of high seas fish stocks and associated and dependent species. Under UNCLOS article 117, “all States have the duty to take, or to cooperate with other States in taking such measures for their respective nationals as may be necessary for the conservation of the living resources of the high seas.” UNCLOS envisages that states will establish subregional or regional fisheries organizations whenever two or more states are fishing for the same resources or in the same area.¹⁵ RFMOs are currently viewed as the primary vehicle through which states are to cooperate with respect to the management of high seas living resources.¹⁶ However, current assessments of both high seas fish stocks and RFMO performance reveal that conservation efforts often fall short. According to the 2006 FAO Report on the State of World Fisheries and Aquaculture, more than half of stocks of highly migratory sharks and 66 percent of high-seas and straddling fish stocks rank as either overexploited or depleted, including stocks of species such as hakes, Atlantic cod and halibut, orange roughy, basking shark and bluefin tuna.¹⁷ A recent review of RFMOs by Willock and Lack (2006)¹⁸ stated that:

- RFMOs have generally failed to prevent over-exploitation of straddling and highly migratory fish stocks, to rebuild overexploited stocks and to prevent degradation of the marine ecosystems in which fishing occurs. Not only have broader, international expectations not been met but RFMOs have also largely failed to meet the objectives of their own governing conventions, generally characterized as conservation and sustainable utilization of target stocks under

their mandate. It is difficult to identify examples of sustainable management of target stocks by RFMOs.

Recent calls for RFMO performance assessments, common review criteria and deadlines for improvement may help to stimulate progress. More could also be done to ensure that RFMOs or some modified form of an RFMO effectively address the conservation of all high seas living resources under their remit, as is the mandate of the Commission for the Conservation of Antarctic Living Marine Resources (CCAMLR), as opposed to just “the optimal use of target fish stocks”.

2.1.4 Duty to prevent, reduce and control pollution

UNCLOS calls on states to take all measures necessary to prevent, reduce or control pollution of the marine environment from any sources.¹⁹ UNCLOS recognizes that such measures should not cause unjustifiable interference with activities of other states in the exercise of their rights and in pursuance of their duties.²⁰ Given the current condition of the marine environment and potential cumulative impacts, what may have been considered “unjustifiable interference” in the past may no longer be true today. Another important requirement that has been frequently ignored with respect to ABNJ is that measures are not to transfer damage or hazards from one area to another or transform one type of pollution into another. Instead, for example, the rules in MARPOL 73/78²¹ governing ship discharges of oily wastes, chemical residues, sewage and garbage are based on a “distance from the nearest land” approach that effectively trans-

¹⁴ UNFSA article 6.1-6.7. The precautionary approach is also directly adopted in the London Protocol of 1995 with respect to the dumping of wastes at sea, and in the preamble to the CBD.

¹⁵ UNCLOS article 119.1(a).

¹⁶ UNFSA article 8.

¹⁷ Food and Agriculture Organization of the United Nations, 2006. State of the World Fisheries and Aquaculture. <http://www.fao.org/docrep/009/A0699e/A0699e00.htm>

¹⁸ Willock, A. and Lack, M. 2006. Follow the leader: Learning from experience and best practice in regional fisheries management organizations. WWF International and TRAFFIC International.

¹⁹ UNCLOS article 194.1. These measures are to include those designed to “minimize to the fullest possible extent”: i) releases of toxic, harmful or noxious substances from land-based sources, from or through the atmosphere or by dumping, ii) pollution from vessels, iii) pollution from installations used for exploration or exploiting the seabed, iv) pollution from other installations and devices operating in the marine environment UNCLOS article 194.3.

²⁰ UNCLOS article 194.4

²¹ International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol or 1978 relating thereto (MARPOL 73/78), Annexes I, II, IV and V.

fers pollution from coastal waters to the high seas. As a result, mass concentrations of marine debris and oil slicks are accumulating in open ocean 'sink' areas, such as ocean gyres, with serious impacts on marine wildlife, seabirds, fish and fisheries. An additional issue with respect to shipping activities is that due to overcapacity and cost concerns there is little momentum to adopt new technologies that could reduce pollution, and existing technologies are often grandfathered in for long periods of time.

To protect biodiversity in ABNJ, it will be necessary to reduce sea-based sources of pollution and to increase safety of operations to the maximum extent possible. As is already the case in the aviation industry, the best available technologies and practices should be put into rapid use. Moreover, the concept of what causes "unjustifiable interference" to the rights of other states may need to be reviewed in light of current conditions, such that new and more stringent regulations are adopted with respect to activities giving rise to pollution in ABNJ.

2.1.5 Duty to control domestically flagged vessels and nationals

The lack of effective implementation and enforcement of flag state responsibilities was recognized as a critical gap in the effectiveness of overall oceans governance at the 5th meeting of the United Nations Informal Consultative Process in 2005. It was noted that such gap was a serious impediment to the contribution of responsible fisheries to sustainable development. The failure or inability of certain states to exercise appropriate control over their flagged vessels is an issue common to both merchant shipping and international fishing.²² This failure by one nation harms the entire international community. For example, IUU fishing on the high seas costs the international community an estimated \$1.2 billion in

direct losses, in addition to its ecological costs and damage to future fishing opportunities.²³ This highlights the need for mechanisms to ensure that flag state responsibilities have been met, and to develop remedies when flag states repeatedly fail to comply.²⁴ The UNGA has in recent years suggested that states that are unable to fulfil their obligations as flag states should suspend operation of their registries. The international community could agree to take more direct action for example by prohibiting access to ports by vessels from specific flag states. New methods are also required to ensure that states control the actions of their nationals that are beneficial owners of vessels.

2.1.6 Duty to cooperate

UNCLOS is premised on the duty of cooperation by states for the conservation of high seas living marine resources and protection and preservation of the marine environment.²⁵ However, UNCLOS lacks the means to ensure that states conform to this requirement. The UN Fish Stocks Agreement deals with this issue by calling for states to give effect to their duty to cooperate by joining RFMOs or by agreeing to apply their conservation and management measures. Only states that cooperate in this manner are to have access to the fishery resources to which the measures apply.²⁶ If implemented, this provision would eliminate "free riders" and significantly reduce opportunities for illegal, unreported and unregulated fisheries that are undermining the health of fish stocks and biodiversity in the high seas.

States may of course have recourse to the International Tribunal for the Law of the Sea when other states breach their duty to cooperate. However, so far states have been reluctant to pursue this remedy. Alternatively, new mechanisms including trade sanctions may need to be developed to provide some level of consistent incentives for state implementation. The annual meeting of States Parties to UNCLOS have so far been limited to review of administrative details but provide a potential forum for developing mechanisms to review cooperation and to enhance compliance. The UNGA could also in its annual resolutions take a more active role in guiding states behaviour. For example, it could adopt a declaration on policy principles for high seas conservation to serve as a guide to prompt and assess state and institutional performance.

2.2 Regulatory Gaps

2.2.1 Unregulated fisheries

UNCLOS provides a valuable framework for oceans governance, however many of its obligations are given effect through complementary instruments, for example through implementing agreements. An example is the 1995 UN Fish Stocks Agreement that governs the conservation and management of highly migratory and straddling fish stocks. However, not all high seas fisheries are directly covered by the UN Fish Stocks Agreement. Unregulated fisheries include discrete deep sea fish stocks, squid, sharks and other non-tuna or non-tuna-like stocks in many ocean regions. Certain new forms of fishing, such as high seas capture of wild tuna for "ranching" in domestic waters may also not be covered by traditional rules. A new agreement or protocol may be necessary to enable the adoption of stringent precautionary rules for new and emerging fisheries and activities that are not already covered by RFMO conservation and management measures.

²² Under UNCLOS article 91: "there must exist a genuine link between the State and the ship." UNCLOS article 94 specifies the duties of the flag State, including the duty to "effectively exercise its jurisdiction and control in administrative, technical and social matters over ships flying its flag."

²³ Marine Resource Assessment Group Ltd. 2005. IUU fishing on the High Seas: Impacts on Ecosystems and Future Science Needs, Report prepared for UK's Department for International Development with support from the Norwegian Agency for Development Cooperation. Available at: <http://www.high-seas.org>.

²⁴ Rayfuse, R. 2005. "To Our Children's Children's Children: From Promoting to Achieving Compliance in High Seas Fisheries" in *The International Journal of Marine and Coastal Law special Issue on High Seas Fisheries Governance, Moving from Words to Action* (Gjerde, KM (ed.)). vol. 20, nos. 3-4, pp. 509-532.

²⁵ UNCLOS articles 94, 117-119, and 197.

²⁶ UNFSA article 8.

2.2.2 Unregulated activities

Under UNCLOS, high seas freedoms are subject to the conditions laid down in the Convention and other rules of international law, including environmental and biodiversity conservation duties.²⁷ Shipping, waste dumping from ships, fishing, seabed mining and aviation are currently regulated at the international level including through measures to protect the marine environment.²⁸ However, the exercise of other high seas freedoms such as marine scientific research, cable and pipeline laying, and the construction of artificial installations may also adversely effect the marine environment. Yet these lack specific international rules beyond UNCLOS governing their operation or their potential impact. Both UNCLOS and the CBD contain requirements to assess and monitor the potential effects of activities under national jurisdiction and control, but these have not yet been implemented on a consistent basis in areas beyond national jurisdiction.²⁹ Mechanisms such as environmental impact assessments, guidelines and codes of conduct are an important tool in preventing harm and need to be further developed with respect to all activities that may impact areas beyond national juris-

diction.³⁰ As is currently the practice of some states with respect to marine scientific research, environmental impact assessments could be conducted at the national level for activities that may affect biodiversity in ABNJ, with compliance a precondition for funding approval.

2.2.3 Lack of precautionary rules for new and emerging activities

There is no regulatory mechanism in place to guide the development of potential and emerging activities in ABNJ such as bioprospecting, open ocean fertilization to sequester CO₂, marine tourism, or installations for aquaculture or energy production. CBD requirements for assessment and monitoring are also here applicable. Nevertheless, the potential environmental impacts of such activities are not as yet addressed. Of concern, for example, are new industry proposals to “fertilize” vast areas of the ocean in order to, according to industry claims, “sequester CO₂, restore plankton and fish populations, and combat acidification.” The broader environmental consequences, safety and effectiveness of such operations have not been scientifically established, yet already there are plans to secure and sell carbon credits for such efforts.³¹ Again, stringent precautionary rules are needed to govern new and emerging activities with the potential to harm areas beyond national jurisdiction.

2.2.4 Absence of mechanisms to address cumulative effects

Of further concern, many traditional activities such as shipping, fishing, military activities, and oil and gas exploration have increased substantially in ABNJ since the 1980s, and with it, their cumulative impacts. Vessel traffic through the Northeast Atlantic is now the highest in the world. What may have been more or less benign in the past, due to its limited scope and magnitude, may now give rise to serious risks to marine biodiversity. There is thus a need for the relevant

institutions to assess and address in an integrated manner the cumulative impacts of human activities from intensifying traditional activities and to address new issues such as sonar and other sources of underwater noise, ship strikes of cetaceans and marine litter.

2.2.5 Geographic gaps in regional fisheries management

Gaps in coverage at the regional scale present another major challenge to integrated oceans governance. Many ocean regions still lack RFMOs with competence (legal authority) to manage the full spectrum of fisheries and their impacts. Most govern only tuna or tuna-like species. Only five RFMOs (the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), the Northwest Atlantic Fisheries Organization (NAFO), the Northeast Atlantic Fisheries Management Commission (NEAFC), the General Fisheries Commission for the Mediterranean (GFCM), and the Southeast Atlantic Fisheries Organization (SEAFO)) have the competence to regulate all fisheries (other than those covered by the five tuna RFMOs) in their geographic ambit. As reflected in the UNGA resolution 61/105 with respect to deep sea bottom fisheries, new regional organizations need to be developed on an urgent basis to cover the geographic gaps for all unregulated fisheries. Deadlines might also be set to ensure rapid adoption of conservation and management measures for highly vulnerable pelagic species such as sharks and billfish.

2.2.6 Geographic gaps in regional management of non-fisheries activities

Most high seas areas lack regional ocean management organizations (ROMOs) for protection and sustainable development with respect to activities other than fisheries. While most regional seas (enclosed or semi-enclosed sea areas) have agreements to address common environmental quality and biodiversity conservation issues, only four agreements include areas beyond national

²⁷ UNCLOS article 87.2.

²⁸ The International Maritime Organization (IMO) oversees the environmental impacts of shipping and dumping from ships, the International Seabed Authority (ISA) is responsible for protecting natural resources and preventing damage from seabed mining, while the International Civil Aviation Organization (ICAO) regulates overflight and aircraft emissions.

²⁹ Under UNCLOS articles 204-206, states are to monitor the effects of any activity they permit or engage in to determine whether it is likely to cause marine pollution. Additionally states are to assess the potential effects of activities under their jurisdiction or control which may cause substantial pollution of or significant or harmful changes to the marine environment. Such results are to be communicated to the competent international organization, and made available to all states. CBD articles 7(c) and 14 call for states to 1) identify and monitor processes and categories of activities which have or are likely to have significant adverse effects on biological diversity in ABNJ; and 2) introduce appropriate procedures requiring environmental impact assessments of proposed activities likely to have significant adverse effects on biological diversity with a view to minimizing such effects.

³⁰ UNCLOS articles 235 and 263.

³¹ Chisholm, S.W., Falkowski, P.G. and Culen, J.J., 2001. Dis-Crediting Ocean Fertilization, *SCIENCE VOL 294*, 309-310. For an example of a company promoting open ocean fertilization, see www.plantkos.com.

jurisdiction (The Antarctic Treaty and its Madrid Environmental Protocol, the OSPAR Convention for Protection of the Marine Environment in the Northeast Atlantic, the Barcelona Convention for the Mediterranean Regional Seas Program, and the Noumea Agreement for the South Pacific Regional Environmental Program (SPREP)).³² States may wish to consider a range of options to address this gap, including extending the geographic remit of existing regional organizations, establishing new ones, or creating other mechanisms for ocean-basin wide cooperation.

2.3 Governance Gaps

2.3.1 Inconsistent mandates between sectors

The incongruence in international law regarding regulation of deep seabed mineral mining compared to fisheries affecting the seabed beyond national jurisdiction is one example of inconsistent mandates. Under UNCLOS and the implementing agreement for Part XI, environmental regulations are to be in place before any exploration or exploration of seabed minerals in the Area is to proceed.³³ Until recently, high seas fisheries other than in the Southern Ocean under CCAMLR have largely been allowed to proceed in the absence of environmental regulations. The 2006 UNGA Resolution 61/105 (paras. 80-90) may

represent a fundamental change with respect to high seas bottom fishing. It establishes a reversed burden of proof approach by calling for areas to be closed where vulnerable marine ecosystems occur or are likely to occur unless it has been established that no harm is done. This trend towards prior assessment and precaution is a positive one, but should be consistently applied to all fisheries and all maritime sectors.

2.3.2 Inconsistent mandates within sectors

Inconsistencies in mandates can also occur within given sectors, as evidenced by regionally differing mandates across RFMOs: there is no consistent approach to ecosystem-based and precautionary management despite being called for by the UN Fish Stocks Agreement. Also lacking in many RFMO mandates are the basic requirements of the UN Fish Stocks Agreement to protect biodiversity, minimize bycatch, pollution, waste, discards, and catch by lost or abandoned gear, or to ensure use of the best scientific information available.³⁴ Rather most RFMOs remain focused on "maximum sustainable yield" of target species, an outmoded concept rejected by modern fisheries managers.³⁵ This is in contrast to CCAMLR, which is guided by the mandate set out in the Convention itself to promote conservation of all Antarctic marine living resources. Sustainable exploitation is allowed as conservation is defined to include "rational use", but use is guided by three core obligations: i) to prevent a decrease in harvested population size levels below that required for sustainable recruitment; ii) to maintain ecological relationships; and iii) to prevent or minimize the risk of changes in the marine ecosystem that are not potentially reversible over two or three decades.³⁶ The three core obligations of CCAMLR currently represent "best practice" with respect to fisheries management, and should be incorporated into the mandates of other RFMOs.

2.3.3 Varying priorities within organizations operating in the same region

Achievement of biodiversity and MPA targets can also be stymied by differing priorities and mandates within organizations operating in the same region. For example, where RFMOs lack a broad mandate for precautionary action to protect biodiversity, it can prove difficult for ROMOs to secure cooperation to protect vulnerable areas and species. A common mandate focused on conservation and sustainable use, as well as clear procedures and mechanisms for cooperation and coordination are vital.

2.3.4 Varying national priorities for conservation in ABNJ

At the same time, there is a need to ensure harmonization between and among national and regional policies so that all are striving for the long term conservation and sustainable use of biodiversity and resources. For example, progress in the Northeast Atlantic could be accelerated if neighboring national policies were harmonized, such that EU Member State and Commission representatives, Norway and Iceland were guided by similar policy principles, goals, targets and mandates with regard to biodiversity conservation.

2.3.5 Lack of transparency and participation

Decisions affecting areas beyond national jurisdiction are largely made away from the light of transparency and public participation. For example, participation in most RFMOs is restricted to states with a direct economic interest in the capture of fishery resources – traditionally regarded as limited to coastal and fishing states and decisions are often taken only by consensus. Non-governmental organizations (NGOs) may generally participate as observers only at the consent of RFMO members, and in many RFMOs it just takes one state to block admission.

RFMOs will need to update their procedures to reflect the requirements under the UN Fish Stocks Agreement to pro-

³² Kimball L., 2005. 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. Secretariat of the Convention on Biological Diversity, Montreal, Technical Series no. 19. Available at: <http://www.biodiv.org/doc/publications/cbd-ts-19.pdf>.

³³ The International Seabed Authority is explicitly charged under Article 145 with developing rules, regulations and procedures for protection and conservation of the natural resources of the Area, and the prevention of damage to the flora and fauna of the marine environment" from the harmful effects of mineral-related activities in the Area. As part of the regulatory approach involving collecting environmental baseline data and continuous assessment of environmental impacts, preservation reference zones and impact reference zones are to be set aside as off limits to mining activities.

³⁴ UNFSA article 5.

³⁵ Willock, A. and Lack, M. (2006), note 18 above.

³⁶ CCAMLR, article II.

vide for transparency, effective decision-making and to permit civil society participation. Other international bodies could also do more to enhance transparency and participation. Ways to enhance participation in sectoral bodies such as RFMOs will need to be developed so that decisions regarding resources and biodiversity beyond national jurisdiction better reflect the interests of the global community (including developing countries, future generations, ocean health and ecosystem resilience) and not short-term sector-based concerns.

2.3.6 Lack of institutional and state accountability

Unlike most other multilateral environmental agreements, UNCLOS does not provide for regular meetings of the parties to review its effectiveness, to review state performance, or to recommend measures to enhance compliance or deter non-compliance. In contrast, the UNFSA calls for a conference to review its implementation and effectiveness five years after its entry into force. The UNFSA review conference in 2006 proved valuable in highlighting the need for improvements in state and RFMO performance, to ensure, among other things, that fisheries management decisions are not made contrary to scientific advice. Regular performance reviews and assessments of existing international agreements, organizations, and states would assist states in executing their environmental responsibilities.

2.3.7 Lack of integrated management mechanisms

The patchwork of limited geographic and sectoral competency and coverage may hinder action to achieve the 2010 and 2012 targets in many ocean regions.³⁷ There is currently no global instrument or organisation that is competent to consider the full range of threats impacting on biodiversity in ABNJ and few linkages across geographic regions.

Achieving integrated management and cooperation will require action and tools at a variety of levels. As domestic experience in many parts of the world has indicated, oceans management is most effective when there is a central body with a clear legal and political mandate to coordinate and ensure consistency of implementation, combined with active engagement from stakeholders. However, this is only possible where strong mechanisms for horizontal and vertical integration and coordination are in place.³⁸ The question is how to achieve this with respect to ABNJ. Some have suggested that a global mechanism such as an UNCLOS Implementation Agreement and administrative body could help fill the role, others prefer a regional approach. In the interim, states can act, both individually and collectively through existing bodies as well as develop agreements amongst themselves to cooperate to improve management of specific uses and key areas.³⁹ The primary challenge will be to secure the participation of the main user states.

3 OPPORTUNITIES FOR MEETING THE 2010 AND 2012 TARGETS

The gaps and inconsistencies in oceans governance for ABNJ described above may hinder but need not prevent efforts to halt biodiversity loss and to progress the development of MPA networks beyond national jurisdiction. While a comprehensive Implementation Agreement to UNCLOS could be an important tool for improving biodiversity conservation and its equitable and sustainable use, it may take a while to negotiate it and bring it into force. Thus it is essential for European Community and/or Member States to improve biodiversity conservation in the short term through focused use of EC authorities, informal collaborative initiatives with other states and partners, and action within existing global and regional bodies and agreements.

3.1 The European Community and/or the Member States

At the EC internal level, many opportunities already exist to promote measures to halt the loss of biodiversity in ABNJ and to promote representative MPA networks, particularly with respect to fishing activities. In many cases, action will also help strengthen the EC's internal biodiversity conservation targets. The European Community and/or Member States, as appropriate, should:

Recommendation 1.

- **Enhance transparency and participation in external fisheries policy.** Establish an internal coordination mechanism for EC External Fisheries to enable transparent discussion across EU Member States, Parliament and environmental constituencies in formulating external fisheries policy to ensure consistency with EU 2010 and 2012 goals and targets where the co-decision procedure (between the Council of Ministers and the European Parliament) for the development of rules and regulations under the Common Fisheries Policy (CFP) does not otherwise apply.

Recommendation 2.

- **Include DG Environment and EU environmental constituencies** in EC delegations to international fisheries meetings, particularly RFMO meetings, recognising that the DG Fisheries and Maritime Affairs does not have exclusive competence for the management of ecosystems, habitats and species impacted by fisheries.

Recommendation 3.

- **Review Member State performance.** Carry out an annual and transparent review of Member State performance under CFP requirements relating to fishing by Member State vessels and nationals on the high seas. Cases of non-compliance by particular Member States should be highlighted and published. The performance review should inform decision-making by the European Commission regarding en-

³⁷ Young, T.R. 2006. The Legal Framework for MPAs and Successes and Failures in Their Incorporation into National Legislation, legal background paper prepared for the FAO Workshop on the Role of MPAs in Fisheries Management 12-14 June 2006.

³⁸ A/61/63 Report of the Secretary-General.

³⁹ Kimball, note 32 above.

forcement actions against Member States under Article 226 of the EC Treaty.

Recommendation 4.

- **Cover unregulated fisheries.** Strengthen the biodiversity requirements under the CFP applicable to Member State fishing vessels and nationals operating on the high seas in areas or fisheries not covered by an existing RFMO.

Recommendation 5.

- **Enact IUU criminal penalties.** Introduce civil and criminal penalties for EU nationals (including their vessels, companies and personnel, wherever they might be in the world) for involvement in IUU fishing activities that are of sufficient potential severity to effectively deter non-compliance.

Recommendation 6.

- **Reduce perverse incentives and subsidies** that promote overcapacity, inefficiency and destructive practices, including by expanding fishing vessel buyback and scrapping schemes to prevent displaced fishing capacity from exacerbating overcapacity problems elsewhere.

Recommendation 7.

- **Link EC subsidies** under the Common Fisheries Policy to those Member States, and ultimately fishermen and businesses, that can show full compliance with EU environmental and EC fisheries policy.

Recommendation 8.

- **Enforce UNCLOS.** Commence legal action against irresponsible flag states in the International Tribunal for the Law of the Sea or the International Court of Justice or any other appropriate dispute settlement forum for violation of UNCLOS duties including the duty to cooperate.

3.2 Regional Organizations

3.2.1 Regional Fisheries Management Organizations

Regional Fisheries Management Organizations (RFMOs) are the most important venue in which to pursue the 2010 and 2012 goals as fishing is currently the most direct and widespread threat to biodiversity and ecosystems beyond national jurisdiction. However, for RFMOs to provide a feasible forum, the governance and management reforms called for by the UNFSA Review Conference (section 3.6.2 below) must also be incorporated.

Some RFMOs now have the mandate to take ecosystem-based and precautionary measures to protect marine biodiversity including through closed areas (e.g. Commission on Conservation of Antarctic Marine Living Resources (CCAMLR), Southeast Atlantic Fisheries Organization (SEAFO)), or are in the process of updating their mandates for this purpose (Northwest Atlantic Fisheries Organization (NAFO) and the Northeast Atlantic Fisheries Commission (NEAFC)). Several have already closed some areas for conservation purposes in response to global concern over the impacts of high seas bottom fishing activities.⁴⁰

CCAMLR is currently leading the way with respect to development of MPA systems. In 2005 CCAMLR agreed on the need to develop a strategic approach to MPA design and implementation for the purposes of maintaining biodiversity and ecosystem processes, in conjunction with measures taken under the Antarctic Treaty's Madrid Environmental Protocol.⁴¹ Work on a Southern Ocean bioregionalization for network planning has begun with an informal workshop in September 2006. A formal workshop is

scheduled for August 2007 in Belgium. Other RFMOs have yet to take a comprehensive approach to protecting biodiversity including through MPAs.

RFMOs are also the most important venue for pursuing protection of vulnerable species impacted by fishing activities. The recent IUCN Red List data highlighted that Sharks are one of the most vulnerable group of marine fishes. Because of their life history strategies, many shark species are highly vulnerable to over-exploitation leading to population depletions. Sharks in the high seas are subject to capture as catch and by-catch, and finning activities now represents a major threat to the survival of the group. International collaboration among states for the management of straddling, highly migratory as well as discrete deep sea sharks in ABNJ is particularly important to ensure sustainable management of their fisheries.

To achieve the greatest biodiversity benefit from EC membership in RFMOs, the EC and Member States should:

Recommendation 9.

- **Implement UNGA Resolution 61/105.** Support immediate adoption of measures to drastically reduce current deep sea bottom fishing effort and to protect vulnerable marine ecosystems. Initiate where necessary scientific studies through ICES, IOC and ROMOs to identify and predict the locations of vulnerable marine ecosystems and close fisheries in these areas.

Recommendation 10.

- **Adopt interim measures where no RFMO.** Support within bodies that are developing new RFMOs the immediate adoption of interim measures to conserve and manage marine biodiversity, ensure sustainable fisheries, and protect vulnerable marine ecosystems.

Recommendation 11.

- **Begin regional cooperation.** Encourage enhanced cooperation and coordination between RFMOs and

⁴⁰ Gjerde, K.M. in press. High Seas MPAs and Deep Sea Fishing, in FAO (2007). Report and documentation of the Expert Consultation on Deep-sea Fisheries in the High Seas. Bangkok, Thailand, 21–23 November 2006. *FAO Fisheries Report* No. 829. Rome, Italy. 2007.

⁴¹ Grant, S. 2005. "The Challenges of marine protected area development in Antarctica", *PARKS Magazine* issue on High Seas MPAs. vol. 15, no. 3 (Gjerde, K.M. and Kelleher, G., (eds.)).

ROMOs on issues of common concern, particularly with respect to the impacts of fishing on vulnerable marine ecosystems, habitats and species and the management of sites as MPAs.

Recommendation 12.

- **Establish MPA networks.** Use RFMO meetings to promote full implementation of the UNFSA requirement to protect marine biodiversity by adopting amongst other measures, initiatives such as CCAMLR's to establish networks of MPAs in cooperation with relevant global and regional bodies.

Recommendation 13.

- **Drive RFMO reform.** Stimulate further review and revision of RFMO mandates to more closely reflect the CCAMLR objectives of "conservation of living marine resources" with rational use subject to clear and consistently applied conservation principles to reduce levels of bycatch and environmental impacts of fisheries.

Recommendation 14.

- **Protect vulnerable species.** Propose in the relevant RFMOs strong conservation measures (e.g. catch limits and by-catch limits) for threatened species such as sharks, seabirds and sea turtles included in the IUCN RedList, or based on the available scientific data and advice. Shark species of urgent concern include the porbeagle shark and the North Atlantic stock of the shortfin Mako shark.

Recommendation 15.

- **Ban shark finning.** Promote finning ban regulations in relevant fora and RFMOs and strengthen existing ones by ensuring that at minimum the adopted regulations do not allow having on board vessels fins that total more than five percent of the dressed weight of sharks (defined as all parts of the shark excepting head and guts) equivalent to 2% of the whole weight.

3.2.2 Regional Ocean Management Organizations

Some **regional sea and ocean management organizations** (ROMOs) have geographic remits including marine areas beyond national jurisdiction, but such areas traditionally have not been the major focus of their activities. Most ROMOs take a comprehensive approach to the conservation and sustainable use of marine biodiversity in the geographic areas within their remit, and many have the capacity to regulate activities and impacts other than fishing and shipping. Efforts are now underway in three ROMOs to make progress on MPAs beyond national jurisdiction. In the Northeast Atlantic, parties to the OSPAR Convention for the protection of the Northeast Atlantic have committed to developing an ecologically coherent network of MPAs by 2010. The OSPAR Maritime Area includes up to 40% of waters beyond national jurisdiction. OSPAR has already developed MPA criteria and management guidelines.⁴² Progress within the OSPAR Area on MPAs in ABNJ has been slow as some members question what can be done without an agreement at the international level, suggesting that OSPAR lacks the competence to establish and manage MPAs in ABNJ. However, there is still quite a lot that can be done, using the powers of OSPAR Contracting Parties as flag states and port states to control vessels operating within the OSPAR Maritime Area and EC membership in NEAFC.

In the Mediterranean an important precedent has already been set by the Barcelona Protocol⁴³, which provides for the designation of "Specially Protected Areas of Mediterranean Importance" (SPAMI) both within and beyond national jurisdiction. This agreement provided the basis for designation in 2001 of the Pelagos Sanctuary for Mediterranean Cetaceans encompassing waters both

within and beyond national jurisdiction.⁴⁴

Parties to the Barcelona Protocol are obligated to follow the management guidelines, and to apply pressure to recalcitrant third parties. Similarly, pursuant to the Antarctic Treaty's Madrid Protocol, parties have designated several marine "Antarctic Specially Protected Areas" and "Antarctic Specially Managed Areas" in ABNJ and a more comprehensive program, in conjunction with CCAMLR, is now in its initial stages (see section 3.2.1 above).

To progress MPA networks at the regional level, the EC and Member States, as appropriate, should:

Recommendation 16.

- **Initiate scientific studies.** Promote scientific studies in conjunction with relevant ROMOs and RFMOs to identify ecologically sensitive features, actual and potential threats, specific sites that need protection, and components of an ecologically coherent network.

Recommendation 17.

- **Establish pilot MPAs.** Promote the development of pilot MPAs to gain experience in managing multiple uses whereby participants agree to refrain from specific activities like bio-prospecting or deepsea mining or to subject an activity like bioprospecting to specific management measures. While management measures would be collectively agreed, one country might take the lead in developing the measures and verifying compliance with them once agreed. Areas that have already been closed to fishing by RFMOs could represent a non-contentious starting place for such designations.

Recommendation 18.

- **Establish stakeholder partnerships.** Pursue partnerships with industry, NGOs, scientists and others to protect areas designated as MPAs through informal mechanisms such as best-effort agreements, voluntary codes of

⁴² Kimball, above ft. 32.

⁴³ 1995 Protocol Concerning Mediterranean Specially Protected Areas and Biological Diversity in the Mediterranean (which replaced the 1982 Protocol Concerning Mediterranean Specially Protected Areas)

⁴⁴ Kimball, above ft. 32.

conduct, activity monitoring and certification programs.

3.3 Informal Collaborative Initiatives

There are a wide variety of collaborative initiatives that could be pursued between and among governments, intergovernmental organizations, scientists, conservation organizations and industry to prevent loss of biodiversity and accelerate development of MPAs in ABNJ. Options for collaboration include informal, voluntary partnership arrangements, codes of conduct, certification programs, and agreements between states. These can also serve to promote dialogue, cooperation and collaboration between the full range of stakeholders. Advantages of informal initiatives are that the partners are not confined to governments, but can include international non-governmental and inter-governmental organizations (such as RFMOs), and the business sector. They can also lay the groundwork for a more formal instrument.

The EC and the Member States should develop collaborative initiatives to:

Recommendation 19.

- **Form a coalition of like-minded states to support** short-term action and broader high seas governance reforms in the various regional and global arenas by convening informal meetings and workshops to explore common interests, options and positions.

Recommendation 20.

- **Advance the scientific basis for MPA networks** by supporting work to identify sites in need of protection as well as develop bioregional maps of the open ocean and deep seabed at an appropriate scale to allow for preliminary MPA network planning.

Recommendation 21.

- **Support biodiversity research** including marine genetic resources in ABNJ in partnership with scientists from developing countries in order to improve conservation and manage-

ment, promote capacity building and support sustainable maritime uses. This could include an International Marine Science Collaboration Program developed under the auspices of the International Seabed Authority.

Recommendation 22.

- **Commission economic studies to:**
 - 1) develop a conceptual framework for valuing the global economic benefits of biodiversity in ABNJ and the potential costs of its loss; 2) study the costs and times frames for developing commercial products from marine genetic resources in ABNJ, and the benefits derived; and 3) the economic and ecological costs and benefits of MPAs.

Recommendation 23.

- **Establish pilot MPAs.** Jointly identify and manage select areas as pilot MPAs (by agreeing to refrain from certain activities in the area) in collaboration with a wide range of stakeholders to gain practical experience. Work through existing international and regional bodies to establish on a sectoral basis the necessary protective measures.

Recommendation 24.

- **Promote codes of conduct.** Develop or promote codes of conduct amongst professional and industry groups to reduce biodiversity impacts and to identify and protect important and vulnerable areas. Groups could include scientists, bio-prospectors, the submarine cables industry, the oil and gas industry, and marine archaeologists. EC and Member State project funding could be linked to adherence to such codes of conduct.

3.4 United Nations Fora

3.4.1 United Nations General Assembly

The **United Nations General Assembly** (UNGA) is the key political forum for member states to set the agenda for biodiversity conservation in ABNJ. The UNGA's annual omnibus resolution on

oceans and law of the sea and related omnibus resolution on sustainable fisheries provide general policy guidance to a wide range of international institutions as well as states. These resolutions identify a broad range of marine and maritime issues, and include specific recommendations, calls and invitations to international institutions and states on actions to be taken. In 2006, for example, the UNGA called on states and RFMOs to take measures to "prevent significant adverse impacts on vulnerable marine ecosystems" or to refrain from fishing.⁴⁵ In this resolution, the UNGA called for development of standards and criteria for identifying vulnerable marine ecosystems and the creation of a global database of information on vulnerable marine ecosystems in areas beyond national jurisdiction.

The EC and the Member States, as appropriate, should use the UNGA annual resolution process to:

Recommendation 25.

- **Promote UNGA Declaration of Policy Principles.** Promote the development of a UNGA Declaration of Policy Principles for biodiversity conservation and sustainable use in ABNJ to make explicit legal principles and environmental norms such as the ecosystem approach and the precautionary approach that have evolved since the UNCLOS text was negotiated. Such a UNGA declaration could serve to guide and prompt consistent state and institutional behaviour while broader ocean governance reforms including the UNCLOS Implementation Agreement are under discussion and/or development.

Recommendation 26.

- **Broaden UN Informal Working Group on ABNJ mandate.** Promote a broad governance reform mandate and agenda for the UN Informal Working Group on ABNJ when it meets in early 2008, as detailed in recommendations 27- 31 below.

⁴⁵ UNGA 2006 Res. 61/105.

3.4.2 UN Informal Working Group on Biodiversity in ABNJ

The **UN Informal Working Group on Biodiversity in ABNJ**, more formally known as the “Ad-hoc Open-Ended Informal Working Group to study issues related to the conservation and sustainable use of biodiversity beyond national jurisdiction” was established by the UNGA in 2004. At its meeting in February 2006, participants agreed that UNCLOS served as the basis for cooperation and action, and that there was a need for improved implementation, cooperation and coordination.⁴⁶ Among the key topics for the 2008 meeting will be: 1) area-based management measures; and 2) whether there are governance and/or regulatory gaps, and if so, how they should be addressed.⁴⁷ Discussions will enable the European Union to promote MPAs as well as other short-term and medium-term reforms, including the UNCLOS Implementation Agreement.

At the 2008 UN Informal Working Group on Biodiversity ABNJ, EC and Member States, as appropriate, should:

Recommendation 27.

- **Formalize UN Working Group.** Obtain commitments to formalize the UN Working Group for an initial five year period to draft the UNGA Declaration of Policy Principles and continue focused discussions of governance reforms.

⁴⁶ United Nations, 2006. Report of the United Nations Ad hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction A/61/65, para 59-62.

⁴⁷ 2006 UN General Assembly Oceans and Law of the Sea Resolution 61/ 222. Topics for the February 2008 UN Informal Working Group on ABNJ will be:

- The environmental impacts of anthropogenic activities;
- Coordination and cooperation among States as well as relevant intergovernmental organizations and bodies for conservation and management;
- The role of area-based management tools;
- Genetic resources beyond areas of national jurisdiction; and
- Whether there are governance and/or regulatory gaps, and if so, how they should be addressed.

Recommendation 28.

- **Encourage common MPA criteria.** Encourage development of a consolidated set of scientific criteria for identifying ecologically and biologically significant marine areas and for identifying components of representative networks of MPAs in ABNJ through the CBD in conjunction with other relevant organizations.

Recommendation 29.

- **Address marine genetic resources.** Agree on the need to manage the environmental impact of bioprospecting and marine scientific research and to develop a policy regarding the benefits derived from any commercial exploitation of marine genetic resources obtained in ABNJ such as support for a fund for marine research and conservation in ABNJ.

Recommendation 30.

- **Elaborate EIA standards and guidelines.** Promote the elaboration of standards and guidelines for environmental impact assessments and/or codes of conduct for activities and processes that may impact biodiversity and ecosystems ABNJ, with specific provisions for activities that may affect MPAs.

Recommendation 31.

- **Define and enforce flag state responsibilities.** Promote development of an agreement to eradicate flags of non-compliance that explicitly defines flag state responsibilities for various maritime activities, establishes criteria for determining failure to fulfil such responsibilities, and identifies steps that can be taken in response to such failure, including loss of access to resources, port closures, trade measures, financial penalties and other sanctions against both states and nationals deemed irresponsible.

3.4.3 UN Informal Consultative Process on Oceans and Law of the Sea

The UN Informal Consultative Process on Oceans and Law of the Sea

(UNICPOLOS) was established in 2000 to provide a forum for informal discussions on pressing issues in the area of oceans affairs and to enhance coordination. Meeting annually, it enables states, international institutions, NGOs and other actors to explore problems, exchange views, and identify action which should be taken to address these problems. The reports of UNICPOLOS provide guidance and enrich the annual debates on oceans and law of the sea in the UN General Assembly, which agrees on the focus and topics of forthcoming UNICPOLOS meetings.

Marine genetic resources and maritime security will be the main topics for discussion at UNICPOLOS in 2007 and 2008. Both issues are contentious and critical to advancing discussion on conservation and governance in ABNJ. With respect to marine genetic resources, the G-77 has made it clear that it wants the principle of sharing of benefits derived from deep seabed genetic resources in the Area considered as part of discussions on new or improved governance arrangements and agreements for areas beyond national jurisdiction.⁴⁸

Regarding maritime security, it may be possible to use overlaps between maritime security and environmental security to progress agreement on enhanced monitoring and tracking of ships posing a potential threat to either. Mandatory use of vessel monitoring systems (VMS), for example, would assist in combating IUU fishing as well as monitoring compliance with agreed MPA protective measures.

At the 2007 and 2008 meetings of UNICPOLOS, the EC and Member States, as appropriate, should:

⁴⁸ G77 statement to UN Informal Working Group on Biodiversity ABNJ, February 2006.

Recommendation 32.

- **Elaborate proposals for marine genetic resources in ABNJ.** Introduce proposals for sharing the benefits derived from marine genetic resources sourced outside national jurisdiction and for environmental impact assessments of marine scientific research and bioprospecting activities to inform discussion at the UNGA and the UN Informal Working Group on Biodiversity in ABNJ.

Recommendation 33.

- **Enhance maritime and environmental security through VMS.** Introduce a proposal to require VMS and other tracking devices on all vessels traveling through international waters in order to enhance maritime security and to monitor compliance with MPAs.

3.5 Biodiversity-related Conventions

3.5.1 Convention on International Trade in Endangered Species

The 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) was developed in response to concerns that unregulated international trade in wild species of fauna and flora could have a detrimental impact on species and their ecosystems. CITES explicitly envisages its application to marine species – a third of all proposed listings for the 2007 Conference of Parties (COP) relate to marine taxa. CITES establishes the international legal framework for the prevention of trade in endangered species (Appendix 1) and for regulation of trade in species that might become endangered without such regulation (Appendix II). Export of Appendix II species requires a permit, which may be issued by the country of origin only if the specimen was legally obtained and if the export will not be detrimental to the survival of the species.

With respect to species caught on the high seas, CITES has a specific provision called ‘introduction from the sea’ relating to the transportation into a

State’s jurisdiction of a marine species from an area that is not under the jurisdiction of any state. There is debate in CITES as to 1) what constitutes “waters not under the jurisdiction of any state” (some flag states assert that high seas catching is under their jurisdiction and that they are thus the ‘country of origin’, not the port state where landings are made), and 2) how to implement this provision. CITES brings together both producer and consumer states and has the power to adopt legally binding measures to ensure that trade in marine products is based on sustainable harvests. It also provides mechanisms to oblige all parties to restrict illegal trade, while RFMOs can only adopt measures binding on their very limited membership. As such, CITES has good potential to play an expanding role in ensuring that the management of marine species addresses both global market forces as well as its effects on wider marine ecosystems and resources. The European Union has introduced two sound proposals to the CITES COP 14 to be held in June 2007 for the listing of migratory shark species porbeagle shark *Lamna nasus* (also listed on Annex I of UNCLOS) and the spiny dogfish *Squalus acanthias*.

At the CITES COP 14 in June 2007, the EC and Member States should:

Recommendation 34.

- **Support listing of sharks.** Promote the listing of the porbeagle shark and spiny dogfish and encourage other Parties to adopt these listing proposals at COP 14.

Recommendation 35.

- **Support other marine listings.** Support additional efforts to list economically-valuable marine species that are threatened as a result of international trade that may be taken in the high seas regardless of whether they are taken as target species or as bycatch, where these species meet the criteria for listing in the CITES Appendices.

Recommendation 36.

- **Develop an EU plan of assistance** for developing countries to ensure wildlife trade is sustainable and contributes to conservation. Such a plan could pay particular attention to highly migratory marine species, issue of non-detriment finding for such species and ways to improve CITES implementation to restrict illegal trade.

Recommendation 37.

- **Elaborate CITES/FAO role.** Support efforts to elaborate on the desired role of CITES in monitoring global trade in vulnerable species such as sharks to promote sustainable trade of marine species in cooperation with fisheries management institutions including FAO and RFMOs.

Recommendation 38.

- **Harmonize trade documentation requirements.** Expand and enhance monitoring of global trade in high seas fish stocks (straddling, highly migratory and discrete) and its impacts on CITES listed species, and work to ensure that high seas fisheries are covered by comprehensive catch documentation schemes (CDS) administered by RFMOs that allow harmonization with CITES documentation requirements for Appendix II-listed species.

Recommendation 39.

- **Report EU internal trade.** Ensure that EU internal landings and dealings in CITES listed taxa are transparently reported as if it were external trade so that information gaps from EU trade do not undermine the benefits of listing. The porbeagle shark is an example of a species that is so heavily traded within the EU that it would require internal reporting to give the CITES listing full effect.

3.5.2 Convention on Biological Diversity

The **Convention on Biological Diversity (CBD)** includes a key obligation for Parties to control nationally regulated

processes and activities (e.g. activities of their nationals and vessels) that may affect biological diversity beyond national jurisdiction. The CBD Conferences of the Parties in 2004 and in 2006 made urgent calls on parties to control and report on such activities, particularly with respect to destructive fishing practices and bio-prospecting for marine genetic resources. Noting the need for further efforts with respect to MPAs beyond national jurisdiction, the 2004 COP charged the first meeting of the CBD ad hoc Working Group on Protected Areas to identify options for cooperation. The first ad hoc Working Group on Protected Areas made limited progress as certain states either were uncomfortable with the concept of MPAs in ABNJ or preferred the UNGA to be the main forum for discussion. CBD parties at the COP8 in 2006 subsequently agreed that the CBD has an important scientific and, as appropriate, technical role to play in supporting the work of the UNGA with regard to MPAs beyond national jurisdiction.⁴⁹

Thus the focus of CBD work is now on developing ecological criteria for areas warranting enhanced protection and for establishing the scientific basis for representative networks of MPAs in ABNJ. In December 2005 the Canadian government hosted an experts' workshop on criteria to identify ecologically and biologically significant areas.⁵⁰ In January 2007, the National University of Mexico, in cooperation with the Australian and Canadian governments, UNESCO and its Intergovernmental Oceanographic Commission (IOC), and the World Conservation Union (IUCN), convened a workshop on biogeographic classification systems for the open ocean and deep seabed. The CBD Secretariat has commissioned the World Conservation Monitoring Centre (WCMC) to develop an

interactive map (IMap) of current High Seas MPAs, key habitat and species distributions, ecological regions and coverage by different management regimes (c.f. RFMOs). In October 2007 the Portuguese government is hosting a CBD workshop to develop a consolidated set of scientific criteria for identifying ecologically and biologically significant marine areas in need of protection and for representative networks of MPAs. These workshops will feed into discussions at all relevant international and regional processes relating to area-based management tools, but do not provide the means to actually establish MPAs ABNJ.

At the 9th COP in Germany in May 2008, CBD parties will consider progress relating to conservation and sustainable use beyond national jurisdiction, including MPAs. Also the 9th COP will consider further supporting action as required, in cooperation with competent international bodies.⁵¹ This meeting will provide an excellent opportunity for Germany and the EU to feature biodiversity conservation in ABNJ, to review progress in other fora, to identify what more needs to be done, and to determine what further steps might enhance global cooperative efforts.

At the May 2008 CBD COP8, Member States should:

Recommendation 40.

- **Agree on a consolidated set of MPA criteria.** Promote agreement on a consolidated set of criteria for identifying ecologically or biologically significant marine areas in need of protection and for representative networks of MPAs in ABNJ in coordination with other relevant organizations, including the United Nations Division on Oceans and Law of the Sea (DOALOS), the Intergovernmental Oceanographic Commission (IOC), the International Maritime Organization (IMO) the International Seabed Authority (ISA), and the UN Food and Agriculture Organization (FAO).

Recommendation 41.

- **Support CBD mapping initiative.** Support continuation of the CBD/WCMC High Seas interactive mapping initiative in coordination with other relevant organizations particularly in conjunction with the FAO's data base on vulnerable marine ecosystems and ongoing work on bioregionalization.

Recommendation 42.

- **Review bottom fishing progress.** Review on a preliminary basis flag state and RFMO implementation of UNGA resolution 61/105 with respect to the impacts of bottom fishing on vulnerable marine ecosystems in order to stimulate rapid progress.

3.5.3 Convention on Migratory Species

The 1979 Convention on Migratory Species (CMS) requires "Range States" to protect listed migratory species including sea turtles, sea birds and small cetaceans, as well as their habitat. This obligation applies also to open ocean hot-spots that provide important habitat for these species. A "Range State" includes any state whose authorized or "flagged" vessels are engaged in "taking" a specific migratory species, whether intentionally or incidentally, in areas beyond national jurisdiction. Several regional agreements and memoranda of understanding have been developed to promote cooperation in protecting small cetaceans, albatrosses and petrels, and sea turtles. These often encourage Range States within specific regions to protect migratory corridors, breeding and feeding grounds and other essential habitats but do not always address migratory species throughout their range or achieve participation by all Range States.

Through the CMS, Member States should:

Recommendation 43.

- **Develop MPAs for migratory species habitat.** Promote agreements to identify and protect key habitats

⁴⁹ UNEP/CBD/COP/VIII/24. para 8

⁵⁰ Rice, J. 2006. Report Of The Scientific Experts' Workshop On Criteria For Identifying Ecologically Or Biologically Significant Areas Beyond National Jurisdiction— 6-8 December 2005, Ottawa, Canada, Fisheries & Oceans Canada
www.biodiv.org/doc/meetings/cop/cop-08/information/cop-08-inf-39-en.doc.

⁵¹ Id., at paras. 8 and 9.

through MPAs for migratory species while they are in the high seas.

Recommendation 44.

- **Expand Range State participation.** Encourage expanded Range State membership in the CMS and relevant agreements and MOUs, in collaboration with relevant RFMOs and other stakeholders.

Recommendation 45.

- **Cooperate to protect fisheries impacted species.** Promote the development of new agreements and memorandum of understandings for migratory species (e.g. sharks) impacted by high seas fisheries.

3.6 Sector-specific UN Bodies and Agreements

3.6.1 UN Food and Agriculture Organization

The **UN Food and Agriculture Organization** (FAO) promotes the conservation and sustainable use of marine living resources through, among other activities, coordinating and promoting implementation of the FAO Code of Conduct for Responsible Fisheries and the Compliance Agreement.⁵² An important aspect of this is helping countries to implement action plans for reducing overcapacity, conserving sharks, reducing seabird by-catch and combating IUU fishing. In 2005, the FAO Committee on Fisheries (COFI) recommended that FAO develop technical guidelines on the design, implementation and testing of MPAs for better fisheries management, conserving marine biodiversity and improving fisheries production and called upon the FAO to assist its members to achieve the WSSD goal for representative networks of MPAs by 2012. Through a workshop in June 2006, FAO has begun development of the technical guidelines. Pursuant to the UNGA resolution 61/105 paragraphs 80-90 on deep sea bottom fisheries, FAO is also to develop technical guide-

lines for states and RFMOs to use to guide implementation and to establish a data base on vulnerable marine ecosystems.

Before the next FAO COFI in 2009, the EC and Member States should:

Recommendation 46.

- **Enhance MPA guidelines.** Ensure broad non-fisheries participation in the development of the FAO technical guidelines on MPAs by encouraging the FAO to involve DOALOS, the CBD, the IOC, UNEP, IMO, the ISA and other relevant organizations and experts.

Recommendation 47.

- **Broaden deep sea fisheries guidelines.** Ensure extensive consultation by non-fisheries experts in development of the FAO technical guidelines on deep sea fisheries and data base on vulnerable marine ecosystems by encouraging FAO to involve scientists and other UN bodies and international organizations with expertise in deep-sea biology and deep-sea ecology as well as deep-sea fisheries so that the resulting guidelines incorporate the best scientific information available.

Recommendation 48.

- **Speed port state control agreement.** Support rapid development of a global port state control agreement that sets minimum standards for port state measures to combat IUU fishing, including requirements for VMS.

Recommendation 49.

- **Support Global Record.** Support development of a Global Record of fishing vessels to provide information on all known open ocean fishing vessels to assist in national monitoring, control and surveillance efforts.

3.6.2 United Nations Fish Stock Agreement

The **UN Fish Stocks Agreement** (UNFSA) is the key legal agreement setting forth global standards for managing and conserving highly migratory and strad-

dling fish stocks and for protecting marine biodiversity from fishing activities in international waters. It further clarifies the UNCLOS duty to cooperate by requiring flag states who are parties to UNFSA to ensure that their vessels comply with RFMO-established measures or do not fish.⁵³ In 2006, parties and non-parties met to review its effectiveness and agreement was reached on a number of important steps to strengthen its implementation. The UNFSA Review Conference recognized that 1) the precautionary approach and the ecosystem approach should be incorporated more fully into fisheries management measures; 2) new RFMOs (Regional Fisheries Management Organizations) should be established to manage stocks and areas not now covered; 3) RFMOs should undertake performance reviews; 4) steps should be taken to assist developing countries; and 5) more should be done to combat IUU fishing.⁵⁴ Speakers at the Review Conference also stressed the need to develop management tools, including MPAs, to effectively conserve and manage straddling and highly migratory fish stocks and discrete high seas fish stocks and to protect habitats, marine biodiversity and vulnerable marine ecosystems in accordance with the best available scientific information and consistent with international law. It was agreed to reconvene the Review Conference no later than 2011 to assess progress and additional needs.

At the informal consultations of States Parties to UNFSA in 2007 and 2008, the EC and Member States should:

Recommendation 50.

- **Continue RFMO review.** Ensure that all RFMOs assess and improve their performance and develop management tools, including MPAs, to more

⁵² Agreement to Promote Compliance with Internationals Conservation and Management Measures by Fishing Vessels on the High Seas.

⁵³ UNFSA articles 17-19.

⁵⁴ UNFSA, 2006. Report of the Review Conference on the 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 A/CONF.210/2006/15.

effectively conserve fish stocks and protect biodiversity.

Recommendation 51.

- **Adopt consistent review criteria.** Promote the adoption of consistent and transparent criteria for RFMO performance assessments, incorporating those under development for a model RFMO by an expert panel established following a recommendation of the former High Seas Task Force.

Recommendation 52.

- **Adopt UNFSA Protocol for unregulated stocks.** Promote development of an agreement (e.g. a protocol to the UNFSA) to cover all other fish stocks (discrete deep sea as well as other non-anadromous, catadromous, straddling or non-Annex 1 highly migratory) targeted on the high seas so that no fish stocks are without binding international and regionally agreed conservation and management measures.

Recommendation 53.

- **Prohibit unreported and unregulated fishing.** Propose an agreement/protocol to prohibit unreported and unregulated fishing that builds upon the duty to cooperate in UNCLOS and UNFSA by making it illegal for fishing vessels from any state to:
 - not comply with regionally agreed conservation and management measures where these exist,
 - fish or be in areas where there are no regionally agreed conservation and management measures.

3.6.3 International Maritime Organization

The **International Maritime Organization** (IMO) is the United Nations agency responsible for establishing globally applicable measures to improve maritime safety and security and to protect the marine environment. IMO's various committees, comprising Member States and observer organizations, include the Maritime Safety Committee (MSC), the Marine Environment Protection Commit-

tee (MEPC), the Legal Committee and various subsidiary bodies established under these committees.

While the IMO has proved effective in enhancing safety and security of maritime shipping, its older regulations such as MARPOL 73/78⁵⁵ on ship discharges are primarily designed to protect coastal waters. Hence these may need to be updated on a global basis to reflect concerns for biodiversity further offshore.⁵⁶ Two other avenues for protection of biodiversity in ABNJ are: 1) "Special Areas" under MARPOL, to restrict discharge limitations in a discrete area, and 2) Particularly Sensitive Sea Areas, to raise awareness and provide a platform for agreeing on additional protective measures consistent with international law.⁵⁷ Two important conventions are designed to eliminate the introduction of harmful anti-fouling substances like TBT into the marine environment⁵⁸ and prevent, minimize and ultimately eliminate the transfer of harmful aquatic organisms and pathogens through the control and management of ships' ballast water and sediments.⁵⁹ However, neither of these treaties is yet in force.

⁵⁵ International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol or 1978 relating thereto (MARPOL 73/78), Annexes I, II, IV, V and VI.

⁵⁶ Raaymakers, S., 2004. The Problem of Marine Debris - Risks, Regulation and the IMO Regime. Asia Pacific Economic Cooperation. Derelict Fishing Gear and Related Marine Debris Seminar, 13-15 January 2004, Honolulu, Hawaii.

⁵⁷ IMO Res. A.982(24) Revised (2005) Guidelines For The Identification And Designation Of Particularly Sensitive Sea Areas; IMO Res. A.927(22) Guidelines for the Designation of Special Areas.

⁵⁸ International Convention on the Control of Harmful Anti-fouling Systems on Ships (2001). The convention will enter into force 12 months after 25 States representing 25% of the world's merchant shipping tonnage have ratified it. At end of June 2006, the convention had received 16 ratifications from countries representing 17.27 per cent of world merchant shipping tonnage.

⁵⁹ International Convention for the Control and Management of Ships' Ballast Water and Sediments (2004). The convention will enter into force 12 months after ratification by 30 States, representing 35 per cent of world merchant shipping tonnage. As of December 2006, the convention had received 6 ratifications from countries representing 0.62 percent of world merchant shipping tonnage.

The IMO also has Secretariat responsibilities for the London Convention and its 1996 Protocol relating to the dumping of wastes from ships.⁶⁰ In November 2006, the Contracting Parties to the London Protocol adopted an amendment to allow for the sequestration of CO₂ streams from CO₂ capture processes in sub-seabed geological formations. This amendment was adopted despite objections from some Parties that not enough was known about the effectiveness, safety or potential environmental impacts of the process. Parties agreed to develop guidance on the means and standards for sequestering CO₂ in sub-seabed geological formations as soon as possible.

At the IMO, the EC and Member States, where appropriate, should:

Recommendation 54.

- **Protect vulnerable areas.** Pursue designation of Special Areas, Particularly Sensitive Sea Areas (PSSAs) and/or Ballast Water Exclusion Zones for specific high seas areas in need of a higher level of protection from the impacts of shipping.

Recommendation 55.

- **Update MARPOL annexes.** Call for amendment of the discharge and emission standards under MARPOL 73/78 Annexes I, II, IV, V and VI that are based on "distance from the nearest land" to upgrade the global level of protection.

Recommendation 56.

- **Speed adoption of new technologies.** Promote rapid incorporation into IMO regulations of new technologies and best practice standards available to improve maritime safety and protect the marine environment. For example, promote the use of modern technologies for oil discharge monitoring and control to end illegal discharges, for ballast water treatment to eliminate discharges of potentially contaminated coastal waters in the

⁶⁰ Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 and 1996 Protocol Thereto.

High Seas, for reducing ship-generated noise to protect marine species, and for the port reception facilities to reduce marine debris.

Recommendation 57.

- **Audit flag state performance.** Promote further work and development of flag-state audit schemes, and create incentives/sanctions to encourage key flags of convenience to speedily review and upgrade their performance. This could include work towards making the flag-state audit scheme mandatory, beginning with those with the worst records or the greatest registered tonnage.

Recommendation 58.

- **Ratify and implement the anti-fouling systems and ballast water conventions and the London Protocol.** Ratification or accession by all 27 EU Member States would be enough to bring the AFS Convention into force and may be enough to bring the Ballast Water Convention into force.

Recommendation 59.

- **Adopt precautionary guidelines for CO₂ sequestration.** Ensure that the IMO guidance under development for CO₂ sequestration in sub-seabed geological formations under the London Protocol reflects highly precautionary standards, including the highest level of purity of the waste stream possible, and high certainty that the CO₂ will remain sequestered for a significant length of time.

Recommendation 60.

- **Regulate commercial ocean iron fertilization activities.** Ensure that any commercial-scale ocean iron fertilization experiments in ABNJ and other related activities are subject to assessment, permitting, control and monitoring procedures in line with the aims, duties and provisions of the London Protocol.

3.6.4 International Seabed Authority

The International Seabed Authority

(ISA) administers the seabed "Area" beyond national jurisdiction with respect to its solid, liquid or gaseous mineral resources. The seabed Area and its resources are recognized under UNCLOS as the "common heritage of mankind."⁶¹ The ISA is to oversee resource development, distribute the benefits arising from activities in the Area, and ensure that the marine environment is protected from harmful effects which may arise during mining operations. The ISA has adopted regulations for the exploration of manganese/polymetallic nodules, and is in the process of developing environmental regulations with respect to activities to explore polymetallic sulphides and other minerals found on hydrothermal vents and seamounts.⁶² Under UNCLOS article 162(2)(x)), the ISA is to disapprove areas for exploitation where substantial evidence indicates serious risk of harm to the marine environment. ISA regulations refer to "preservation reference areas" and "impact reference zones". Another important role of the ISA is sponsoring and coordinating marine scientific research, e.g. by workshops, seminars, direct and indirect research and by its trust fund for promoting participation by developing countries in marine scientific research. One project is seeking to identify criteria and parameters for MPAs on the deep seabed with regard to seabed mining activities.

At the ISA, the EC and Member States, as appropriate, should:

Recommendation 61.

- **Include MPAs in regulations.** Support an ISA agreement on precautionary measures to identify no-mining preservation reference areas where exploration and exploitation would not

be approved in view of serious risk of harm to the marine environment and/or flora and fauna. These measures should be included in the development of rules and regulations on polymetallic sulphides and cobalt crusts and added to existing rules and regulations on manganese nodules.

Recommendation 62.

- **Adopt informal no-mining MPAs.** Encourage states to identify and designate pilot MPAs in the Area, including on a regional basis, where they will voluntarily refrain from mining activities, and secure the endorsement by the ISA of such non-mining areas identified in these collective proposals.

Recommendation 63.

- **Promote no-mining MPA networks.** Work within the ISA to identify and develop a representative network of preservation and impact reference zones and promote their endorsement and protection by other global and regional bodies and states, as appropriate.

Recommendation 64.

- **Support ISA research.** Encourage activities by the ISA to promote, coordinate and publicise scientific and environmental information relating to deep sea minerals, geomorphology and biodiversity.

⁶¹ UNCLOS articles 136 and 137.

⁶² Under UNCLCS article 145, these regulations are to include measures to prevent pollution, prevent interference with the ecological balance, protect and conserve the natural resources, and prevent damage to the flora and fauna of the marine environment.

ANNEX 1. CONSOLIDATED RECOMMENDATIONS

Internal EC and Member State action

Recommendation 1.

- **Enhance transparency and participation in external fisheries policy.** Establish an internal coordination mechanism for EC External Fisheries to enable transparent discussion across EU Member States, Parliament and environmental constituencies in formulating external fisheries policy to ensure consistency with EU 2010 and 2012 goals and targets where the co-decision procedure (between the Council of Ministers and the European Parliament) for the development of rules and regulations under the Common Fisheries Policy (CFP) does not otherwise apply.

Recommendation 2.

- **Include DG Environment and EU environmental constituencies** in EC delegations to international fisheries meetings, particularly RFMO meetings, recognising that the DG Fisheries and Maritime Affairs does not have exclusive competence for the management of ecosystems, habitats and species impacted by fisheries.

Recommendation 3.

- **Review Member State performance.** Carry out an annual and transparent review of Member State performance under CFP requirements relating to fishing by Member State vessels and nationals on the high seas. Cases of non-compliance by particular Member States should be highlighted and published. The performance review should inform decision-making by the European Commission regarding enforcement actions against Member States under Article 226 of the EC Treaty.

Recommendation 4.

- **Cover unregulated fisheries.** Strengthen the biodiversity requirements under the CFP applicable to Member State fishing vessels and na-

tionals operating on the high seas in areas or fisheries not covered by an existing RFMO.

Recommendation 5.

- **Enact IUU criminal penalties.** Introduce civil and criminal penalties for EU nationals (including their vessels, companies and personnel, wherever they might be in the world) for involvement in IUU fishing activities that are of sufficient potential severity to effectively deter non-compliance.

Recommendation 6.

- **Reduce perverse incentives and subsidies** that promote overcapacity, inefficiency and destructive practices, including by expanding fishing vessel buyback and scrapping schemes to prevent displaced fishing capacity from exacerbating overcapacity problems elsewhere.

Recommendation 7.

- **Link EC subsidies** under the Common Fisheries Policy to those Member States, and ultimately fishermen and businesses, that can show full compliance with EU environmental and EC fisheries policy.

Recommendation 8.

- **Enforce UNCLOS.** Commence legal action against irresponsible flag states in the International Tribunal for the Law of the Sea or the International Court of Justice or any other appropriate dispute settlement forum for violation of UNCLOS duties including the duty to cooperate.

Regional Management Organizations

- Regional Fisheries Management Organizations (RFMOs)

Recommendation 9.

- **Implement UNGA Resolution 61/105.** Support immediate adoption of measures to drastically reduce current deep sea bottom fishing effort and to protect vulnerable marine ecosystems. Initiate where necessary

scientific studies through ICES, IOC and ROMOs to identify and predict the locations of vulnerable marine ecosystems and close fisheries in these areas.

Recommendation 10.

- **Adopt interim measures where no RFMO.** Support within bodies that are developing new RFMOs the immediate adoption of interim measures to conserve and manage marine biodiversity, ensure sustainable fisheries, and to protect vulnerable marine ecosystems.

Recommendation 11.

- **Begin regional cooperation.** Encourage enhanced cooperation and coordination between RFMOs and ROMOs on issues of common concern, particularly with respect to the impacts of fishing on vulnerable marine ecosystems, habitats and species and the management of sites as MPAs.

Recommendation 12.

- **Establish MPA networks.** Use RFMO meetings to promote full implementation of the UNFSA requirement to protect marine biodiversity by adopting amongst other measures, initiatives such as CCAMLR's to establish networks of MPAs in cooperation with relevant global and regional bodies.

Recommendation 13.

- **Drive RFMO reform.** Stimulate further review and revision of RFMO mandates to more closely reflect the CCAMLR objectives of "conservation of living marine resources" with rational use subject to clear and consistently applied conservation principles to reduce levels of bycatch and environmental impacts of fisheries.

Recommendation 14.

- **Protect vulnerable species.** Propose in the relevant RFMOs strong conservation measures (e.g. catch limits and by-catch limits) for threatened species

such as sharks, seabirds and sea turtles included in the IUCN RedList, or based on the available scientific data and advice. Species of urgent concern include the porbeagle shark and the North Atlantic stock of the shortfin Mako shark.

Recommendation 15.

- **Ban shark finning.** Promote finning ban regulations in relevant fora and RFMOs and strengthen existing ones by ensuring that at minimum the adopted regulations do not allow having on board vessels fins that total more than five percent of the dressed weight of sharks (defined as all parts of the shark excepting head and guts) equivalent to 2% of the whole weight.

Regional Management Organizations (ROMOs)

Recommendation 16.

- **Initiate scientific studies.** Promote scientific studies in conjunction with relevant ROMOs and RFMOs to identify ecologically sensitive features, actual and potential threats, specific sites that need protection, and components of an ecologically coherent network.

Recommendation 17.

- **Establish pilot MPAs.** Promote the development of pilot MPAs to gain experience in the process of managing multiple uses whereby participants agree to refrain from specific activities like bioprospecting or deepsea mining or to subject an activity like bioprospecting to specific management measures. While management measures would be collectively agreed, one country might take the lead in developing the measures and verifying compliance with them once agreed. Areas that have already been closed to fishing by RFMOs could represent a non-contentious starting place for such designations.

Recommendation 18.

- **Establish stakeholder partnerships.** Pursue partnerships with industry, NGOs, scientists and others to protect areas designated as MPAs through informal mechanisms such as best-effort agreements, voluntary codes of conduct, activity monitoring and certification programs.

Informal Collaborative Initiatives

Recommendation 19.

- **Form a coalition of like-minded states to support** short-term action and broader high seas governance reforms in the various regional and global arenas by convening informal meetings and workshops to explore common interests, options and positions.

Recommendation 20.

- **Advance the scientific basis for MPA networks** by supporting work to identify sites in need of protection as well as develop bioregional maps of the open ocean and deep seabed at an appropriate scale to allow for preliminary MPA network planning.

Recommendation 21.

- **Support biodiversity research** including marine genetic resources in ABNJ in partnership with scientists from developing countries in order to improve conservation and management, promote capacity building and support sustainable maritime uses. This could include an International Marine Science Collaboration Program developed under the auspices of the International Seabed Authority.

Recommendation 22.

- **Commission economic studies** to: 1) develop a conceptual framework for valuing the global economic benefits of biodiversity in ABNJ and the potential costs of its loss; 2) study the costs and times frames for developing commercial products from marine genetic resources in ABNJ, and the

benefits derived; and 3) the economic and ecological costs and benefits of MPAs.

Recommendation 23.

- **Establish pilot MPAs.** Jointly identify and manage select areas as pilot MPAs (by agreeing to refrain from certain activities in the area) in collaboration with a wide range of stakeholders to gain practical experience. Work through existing international and regional bodies to establish on a sectoral basis the necessary protective measures.

Recommendation 24.

- **Promote codes of conduct.** Develop or promote voluntary codes of conduct amongst professional and industry groups to reduce biodiversity impacts and to identify and protect important and vulnerable areas. Groups could include scientists, bio-prospectors, the submarine cables industry, the oil and gas industry, and marine archaeologists. EC and Member State project funding could be linked to adherence to such codes of conduct.

United Nations Fora

United Nations General Assembly (annual)

Recommendation 25.

- **Promote UNGA Declaration of Policy Principles.** Promote the development of a UNGA Declaration of Policy Principles for biodiversity conservation and sustainable use in ABNJ to make explicit legal principles and environmental norms such as the ecosystem approach and the precautionary approach that have evolved since the UNCLOS text was negotiated. Such a UNGA declaration could serve to guide and prompt consistent state and institutional behaviour while broader ocean governance reforms including the UNCLOS Implementation Agreement are under discussion and/or development.

Recommendation 26.

- **Broaden UN Informal Working Group on ABNJ mandate.** Promote a broad governance reform mandate and agenda for the UN Informal Working Group on ABNJ when it meets in February 2008, as detailed in recommendations 27–31 below.

UN Informal Working Group on Biodiversity ABNJ (February 2008)**Recommendation 27.**

- **Formalize UN Working Group.** Obtain commitments to formalize the UN Working Group for an initial five year period to draft the UNGA Declaration of Policy Principles and continue focused discussions of governance reforms.

Recommendation 28.

- **Encourage common MPA criteria.** Encourage development of a consolidated set of scientific criteria for identifying ecologically and biologically significant marine areas and for identifying components of representative networks of MPAs in ABNJ through the CBD in conjunction with other relevant organizations.

Recommendation 29.

- **Address marine genetic resources.** Agree on the need to manage the environmental impact of bioprospecting and marine scientific research and to develop a policy regarding the benefits derived from any commercial exploitation of marine genetic resources obtained in ABNJ such as support for a fund for marine research and conservation in ABNJ.

Recommendation 30.

- **Elaborate EIA standards and guidelines.** Promote the elaboration of standards and guidelines for environmental impact assessments and/or codes of conduct for activities and processes that may impact biodiversity and ecosystems ABNJ, with spe-

cific provisions for activities that may affect MPAs.

Recommendation 31.

- **Define and enforce flag state responsibilities.** Promote development of an agreement to eradicate flags of non-compliance that explicitly defines flag state responsibilities for various maritime activities, establishes criteria for determining failure to fulfil such responsibilities, and identifies steps that can be taken in response to such failure, including loss of access to resources, port closures, trade measures, financial penalties and other sanctions against both states and nationals deemed irresponsible.

UNICPOLOS (June 2007 and June 2008)**Recommendation 32.**

- **Elaborate proposals for marine genetic resources in ABNJ.** Introduce proposals for sharing the benefits derived from marine genetic resources sourced outside national jurisdiction and for environmental impact assessments of marine scientific research and bioprospecting activities to inform discussion at the UNGA and the UN Informal Working Group on Biodiversity in ABNJ.

Recommendation 33.

- **Enhance maritime and environmental security through VMS.** Introduce a proposal to require VMS and other tracking devices on all vessels traveling through international waters in order to enhance maritime security and to monitor compliance with MPAs.

Biodiversity-related Conventions**Convention on Trade in Endangered Species (CITES) (June 2007)****Recommendation 34.**

- **Support listing of sharks.** Promote the listing of the porbeagle shark and

spiny dogfish and encourage other Parties to adopt these listing proposals at COP 14.

Recommendation 35.

- **Support other marine listings.** Support additional efforts to list economically-valuable marine species that are threatened as a result of international trade that may be taken in the high seas regardless of whether they are taken as target species or as bycatch, where these species meet the criteria for listing in the CITES Appendices.

Recommendation 36.

- **Develop an EU plan of assistance** for developing countries to ensure wildlife trade is sustainable and contributes to conservation. Such a plan could pay particular attention to highly migratory marine species, issue of non-detriment finding for such species and ways to improve CITES implementation to restrict illegal trade.

Recommendation 37.

- **Elaborate CITES/FAO role.** Support efforts to elaborate on the desired role of CITES in monitoring global trade in vulnerable species such as sharks to promote sustainable trade of marine species in cooperation with fisheries management institutions including FAO and RFMOs.

Recommendation 38.

- **Harmonize trade documentation requirements.** Expand and enhance monitoring of global trade in high seas fish stocks (straddling, highly migratory and discrete) and its impacts on CITES listed species, and work to ensure that high seas fisheries are covered by comprehensive catch documentation schemes (CDS) administered by RFMOs that allow harmonization with CITES documentation requirements for Appendix II-listed species.

Recommendation 39.

- **Report EU internal trade.** Ensure that EU internal landings and dealings

in CITES listed taxa are transparently reported as if it were external trade so that information gaps from EU trade do not undermine the benefits of listing. The porbeagle shark is an example of a species that is so heavily traded within the EU that it would require internal reporting to give the CITES listing full effect.

Convention on Biological Diversity (May 2008)

Recommendation 40.

- **Agree on a consolidated set of MPA criteria.** Promote agreement on a consolidated set of criteria for identifying ecologically or biologically significant marine areas in need of protection and for representative networks of MPAs in ABNJ in coordination with other relevant organizations, including the United Nation's Division on Oceans and Law of the Sea (DOALOS), the Intergovernmental Oceanographic Commission (IOC), the International Maritime Organization (IMO) the International Seabed Authority (ISA), and the UN Food and Agriculture Organization (FAO).

Recommendation 41.

- **Support CBD mapping initiative.** Support continuation of the CBD/WCMC High Seas interactive mapping initiative in coordination with other relevant organizations particularly in conjunction with the FAO's data base on vulnerable marine ecosystems and ongoing work on bioregionalization.

Recommendation 42.

- **Review bottom fishing progress.** Review on a preliminary basis flag state and RFMO implementation of UNGA resolution 61/105 with respect to the impacts of bottom fishing on vulnerable marine ecosystems in order to stimulate rapid progress.

Convention on Migratory Species (CMS) (late 2008)

Recommendation 43.

- **Develop MPAs for migratory species habitat.** Promote agreements to identify and protect key habitats through MPAs for migratory species while they are in the high seas.

Recommendation 44.

- **Expand Range State participation.** Encourage expanded Range State membership in the CMS and relevant agreements and MOUs, in collaboration with relevant RFMOs and other stakeholders.

Recommendation 45.

- **Cooperate to protect fisheries impacted species.** Promote the development of new agreements and memorandum of understandings for migratory species (e.g. sharks) impacted by high seas fisheries.

Sector-specific UN Bodies and Agreements

Food and Agriculture Organization (FAO) and the Committee on Fisheries (COFI) (March 2009)

Recommendation 46.

- **Enhance MPA guidelines.** Ensure broad non-fisheries participation in the development of the FAO technical guidelines on MPAs by encouraging the FAO to involve DOALOS, the CBD, the IOC, UNEP, IMO, the ISA and other relevant organizations and experts.

Recommendation 47.

- **Broaden deep sea fisheries guidelines.** Ensure extensive consultation by non-fisheries experts in development of the FAO technical guidelines on deep sea fisheries and data base on vulnerable marine ecosystems by encouraging FAO to involve scientists and other UN bodies and international organizations with expertise in deep-sea biology and deep-sea ecology as

well as deep-sea fisheries so that the resulting guidelines incorporate the best scientific information available.

Recommendation 48.

- **Speed port state control agreement.** Support rapid development of a global port state control agreement that sets minimum standards for port state measures to combat IUU fishing, including requirements for VMS.

Recommendation 49.

- **Support Global Record.** Support development of a Global Record of fishing vessels to provide information on all known open ocean fishing vessels to assist in national monitoring, control and surveillance efforts.

United Nations Fish Stocks Agreement (UNFSA) (annual)

Recommendation 50.

- **Continue RFMO review.** Ensure that all RFMOs assess and improve their performance and develop management tools, including MPAs, to more effectively conserve fish stocks and protect biodiversity.

Recommendation 51.

- **Adopt consistent review criteria.** Promote the adoption of consistent and transparent criteria for RFMO performance assessments, incorporating those under development for a model RFMO by an expert panel established following a recommendation of the former High Seas Task Force.

Recommendation 52.

- **Adopt UNFSA Protocol for unregulated stocks.** Promote development of an agreement (e.g. a protocol to the UNFSA) to cover all other fish stocks (discrete deep sea as well as other non-anadromous, catadromous, straddling or non-Annex 1 highly migratory) targeted on the high seas so that no fish stocks are without binding international and regionally agreed conservation and management measures.

Recommendation 53.

- **Prohibit unreported and unregulated fishing.** Propose an agreement/protocol to prohibit unreported and unregulated fishing that builds upon the duty to cooperate in UNCLOS and UNFSA by making it illegal for fishing vessels from any state to:
 - not comply with regionally agreed conservation and management measures where these exist,
 - fish or be in areas where there are no regionally agreed conservation and management measures.

International Maritime Organization (IMO) (annual)
Recommendation 54.

- **Protect vulnerable areas.** Pursue designation of Special Areas, Particularly Sensitive Sea Areas (PSSAs) and/or Ballast Water Exclusion Zones for specific high seas areas in need of a higher level of protection from the impacts of shipping.

Recommendation 55.

- **Update MARPOL annexes.** Call for amendment of the discharge and emission standards under MARPOL 73/78 Annexes I, II, IV, V and VI that are based on “distance from the nearest land” to upgrade the global level of protection.

Recommendation 56.

- **Speed adoption of new technologies.** Promote rapid incorporation into IMO regulations of new technologies and best practice standards available to improve maritime safety and protect the marine environment. For example, promote the use of modern technologies for oil discharge monitoring and control to end illegal discharges, for ballast water treatment to eliminate discharges of potentially contaminated coastal waters in the

High Seas, for reducing ship-generated noise to protect marine species, and for the port reception facilities to reduce marine debris.

Recommendation 57.

- **Audit flag state performance.** Promote further work and development of flag-state audit schemes, and create incentives/sanctions to encourage key flags of convenience to speedily review and upgrade their performance. This could include work towards making the flag-state audit scheme mandatory, beginning with those with the worst records or the greatest registered tonnage.

Recommendation 58.

- **Ratify and implement the anti-fouling systems and ballast water conventions and the London Protocol.** Ratification or accession by all 27 EU Member States would be enough to bring the AFS Convention into force and may be enough to bring the Ballast Water Convention into force.

Recommendation 59.

- **Adopt precautionary guidelines for CO₂ sequestration.** Ensure that the IMO guidance under development for CO₂ sequestration in sub-seabed geological formations under the London Protocol reflects highly precautionary standards, including the highest level of purity of the waste stream possible, and high certainty that the CO₂ will remain sequestered for a significant length of time.

Recommendation 60.

- **Regulate commercial ocean iron fertilization activities.** Ensure that any commercial-scale ocean iron fertilization experiments in ABNJ and other related activities are subject to assessment, permitting, control and monitoring procedures in line with the

aims, duties and provisions of the London Protocol.

International Seabed Authority (ISA) (annual)
Recommendation 61.

- **Include MPAs in regulations.** Support an ISA agreement on precautionary measures to identify no-mining preservation reference areas where exploration and exploitation would not be approved in view of serious risk of harm to the marine environment and/or flora and fauna. These measures should be included in the development of rules and regulations on polymetallic sulphides and cobalt crusts and added to existing rules and regulations on manganese nodules.

Recommendation 62.

- **Adopt informal no-mining MPAs.** Encourage states to identify and designate pilot MPAs in the Area, including on a regional basis, where they will voluntarily refrain from mining activities, and secure the endorsement by the ISA of such non-mining areas identified in these collective proposals.

Recommendation 63.

- **Promote no-mining MPA networks.** Work within the ISA to identify and develop a representative network of preservation and impact reference zones and promote their endorsement and protection by other global and regional bodies and states, as appropriate.

Recommendation 64.

- **Support ISA research.** Encourage activities by the ISA to promote, coordinate and publicise scientific and environmental information relating to deep sea minerals, geomorphology and biodiversity.

Possible options for an Implementation Agreement for protection of marine biodiversity in areas beyond national jurisdiction

by Sharelle Hart*

1 INTRODUCTION

The marine environment plays a critical role in terms of the climate and functioning of the planet and constitutes approximately 99% of the volume of the biosphere within which animal and plant life permanently occurs.¹ Within the marine environment, 64% is considered to be high seas, in ABNJ. Ecosystems in the open-ocean and benthic environments in ABNJ contain fragile features such as seamount communities, cold water corals and hydrothermal vents; as well as important feeding areas for migrating species; they support not only many unique, endemic, and undescribed species, but also species that are becoming increasingly important for commercial fisheries.

There are currently a range of human activities operating in ABNJ² which can impact on marine ecosystems or result in unsustainable use of resources.³ Fisheries are considered by far the most serious. For example, recent reports from the Food and Agriculture Organisation of

the United Nations (FAO)⁴ reinforce that more cautious and closely controlled management of world fisheries is required: evidence suggests that two-thirds of the high seas and straddling fish stocks for which the state of exploitation can be determined are classified as overexploited or depleted and that more than half of the stocks of highly migratory oceanic sharks for which information is available are considered to be overexploited or depleted. Furthermore the report highlights that these correspond to fish stocks that are key indicators of the state of an overwhelming part of the ocean ecosystem, which appears to be more overexploited than the exclusive economic zones (EEZs). The development of larger and more efficient fishing vessels using increasingly sophisticated technology, which are able to fish in deeper and more remote areas, is putting increasing pressure on global fish stocks, especially in ABNJ. A recent study predicts the collapse (90% depletion) of all species of wild seafood that are currently fished (including those on the high seas) by circa 2050.⁵

Currently less than 1% of the global ocean is [effectively] protected through

establishment of marine protected areas (MPA).⁶ Our knowledge of the resources within ABNJ and of the effects of our actions in this area is extremely limited and thus we run the risk of destroying potential resources before they are known to exist. As highlighted by the Conference of the Parties to the Convention on Biological Diversity (CBD), there is an urgent need for international cooperation and action to improve conservation and sustainable use of biodiversity in ABNJ.⁷

The *Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction* was established by the United Nations General Assembly to consider inter alia possible options and approaches to promote international cooperation and coordination for the conservation and sustainable use of marine biological diversity in ABNJ.⁸ At the first meeting of the working group in February 2006, a statement was tabled on behalf of the EU which proposed that an Implementation Agreement consistent with UNCLOS should be developed. It was suggested that the Agreement could provide for the conservation and management of marine biological diversity in ABNJ, including the establishment and regulation of marine protected areas (MPAs), where there is a scientific case for establishing such areas. A preliminary list of the key elements, associated with the adoption of such an Implemen-

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¹ Norse, E.A. (1994) Capsizing the cradle of life. *Global Biodiversity* 4(1): 4-7.

² For example fisheries, shipping, bio-prospecting, waste disposal, scientific research, laying of submarine cables and potential development of mining activities eg for manganese nodules and polymetallic sulphides. Apart from impacts on species and ecosystems through extraction of resources, impacts can also include disturbance (eg noise), physical destruction of the environment, pollution and introduction of alien species.

³ Gjerde, K.M. (2006) Ecosystems and Biodiversity in Deep Waters and High Seas. UNEP Regional Seas Reports and Studies No. 178. UNEP/IUCN, Switzerland 2006. Noting also the increasing pressure on marine ecosystems through climate change.

⁴ See Food and Agriculture Organization of the United Nations (FAO) (2007) The state of World Fisheries and Aquaculture 2006, Rome, 2007 (<http://www.fao.org/docrep/009/A0699e/A0699e00.htm>) and FAO (2006) The state of world highly migratory, straddling and other high seas fisheries resources, and associated species, J.-J. Maguire, M. Sissenwine, J. Csirke, R. Grainger and S. Garcia. FAO Fisheries Technical Paper No. 495. Rome, 2006.

<http://www.fao.org/docrep/009/a0653e/a0653e00.htm> pp iv.

⁵ Worm, B., Barbier, E.B., Beaumont, N., Duffy, J.E., Folke, C., Halpern, B.S., Jackson, J.B.C., Lotze, H.K., Micheli, F., Palumbi, S.R., Sala, E., Selkoe, K., Stachowicz, J.J., Watson, R. (2006) Impacts of biodiversity loss on ocean ecosystem services. *Science* 314:787-790, pp 790. Noting that some disagree with the conclusions of this study.

⁶ Roberts, C.M. and Hawkins, J.P. (2000) Fully-Protected Marine Reserves: A Guide. WWF Endangered Seas Campaign, WWF-US, Washington DC, and University of York, UK. Recognizing that not all existing MPA are necessarily effectively implemented and that some marine areas may be effectively protected by other means.

⁷ Paragraph 30 of Decision VII/5 CBD

⁸ UNGA Resolution 59/24

tation Agreement, was tabled during the working group meeting.

The EU-led proposal for an Implementation Agreement is still in the early stages of discussion (see *Annex 1*). The aim of this paper is to consider some of the issues that may need to be considered and evaluated in the development of such an Implementation Agreement, in the medium-term. However, short-term actions such as the creation and reform of Regional Fisheries Management Organisations (RFMOs), the implementation of measures to avoid adverse impacts on vulnerable marine ecosystems caused by deep-sea bottom trawling, and initiatives in other sectors should continue to be addressed by the international community in the relevant fora. While an Implementation Agreement could significantly improve the coordination and integration of conservation and protection measures to ensure sustainable and equitable use of resources, it should not be considered a panacea.

Considering the development of an Implementation Agreement for conservation and sustainable use of marine biological diversity in ABNJ provides an opportunity to identify gaps and remedies in international ocean governance within the framework of UNCLOS.

2 POTENTIAL ELEMENTS FOR AN IMPLEMENTATION AGREEMENT

Some priorities that might be considered for improving conservation and management of marine ABNJ are:

- In the context of compliance and enforcement, combating Illegal, Unreported and Unregulated (IUU) fishing;
- Means to provide for designation and effective management of a network of MPAs;
- Greater coordination and integration of activities within ABNJ, based on evolving ecosystem-based approaches to conservation and management;
- Measures to ensure sustainable and equitable use of marine genetic resources.

In addition, outlined below are some of the key elements that could be a starting point for discussion of an Implementation Agreement. As noted above, it will also be important to take into account the implications of progress in other international processes affecting marine governance in ABNJ, such as potential reforms to RFMOs, and to consider whether some topics may not yet be ripe for agreement and should be relegated to another discussion.

2.1 Objective

The objective/s of an Implementation Agreement could be:

- To ensure the protection and preservation of biological diversity in marine areas beyond national jurisdiction and to ensure sustainable use of resources through application of an ecosystem-based management approach.

2.2 Guiding principles

The Implementation Agreement could incorporate the following guiding principles:

1. **Application of ecosystem-based approaches:**⁹ The Implementation Agreement could further develop and operationalize ecosystem-based management, to enable the integrated management of the full range of impacts from human activities based on the best available science and the precautionary approach, in order to achieve sustainable use of environmental services and resources and the maintenance of ecosystem integrity (i.e. structure and function).
2. **Precautionary approach:** Decision-making processes and the application of conservation measures should be based on the precautionary ap-

proach.¹⁰ In applying the precautionary approach: the absence of further detailed scientific information should not be a reason to delay or fail to implement management measures to conserve the environment; decisions should be made using conservative estimates and the introduction of new activities in an area should be done on a progressive and precautionary basis.¹¹

3. Adaptive conservation management:

Due to the inherent levels of uncertainty in environmental decision-making and changing nature of ecosystems (and human impacts), there is a need for on-going monitoring, review and adaptation of management regimes.

4. Sustainable and equitable use of marine resources for the benefit of present and future generations:

Management of resources in accordance with an Implementation Agreement could result in such resources being used in a sustainable manner to maintain the biological diversity to meet the needs of present and future generations.¹² The ABNJ represent the 'global commons' and as stated in the Preamble to UNCLOS there should be equitable and efficient utilisation of resources. Presently, some individuals/private entities and States are benefiting from, and impacting on, these common resources more than others. An Implementation Agreement could address a better balance between the rights and interests of individual users and those of the international community as a whole.

5. Application of Area-based conservation measures:

One of the tools that an Implementation Agreement could utilise is the spatial designation (zoning) of certain areas to manage human activities, enhance and restore both habitats and species as well as to maintain ecosystem health and resilience. The Agreement may provide

⁹ Noting the World Summit on Sustainable Development (WSSD) call for 'the application by 2010 of the ecosystem approach for the sustainable development of the oceans.' http://www.un.org/jsummit/html/documents/summit_docs/2009_keyoutcomes_commitments.doc. See also CBD Decision V/6 which outlines the approach.

¹⁰ Article 6 UNFSA, Preamble to CBD

¹¹ As per Article 6(6) UNFSA

¹² Refer to CBD Article 2

a mechanism to deliver international commitments for a network of MPA, to achieve higher levels of protection for key areas, which could then be integrated with other spatial management tools and species-based protection tools.

- 6. Use of the best available scientific information:** Measures in ABNJ and prioritisation of actions should be based on the best available scientific information. This requires an assessment of the gaps in scientific knowledge, a mechanism for collaboration between scientists, sharing of data and information, capacity building and technology transfer as well as a coordinated and strategic approach to developing research priorities.¹³ Scientific research should inform the adaptive application of conservation measures and the development of criteria for monitoring. As conservation measures are applied in areas of resource use with a commercial value, to encourage the effectiveness of compliance and to investigate the application of economic incentives, decisions relating to ABNJ should be supported by socio-economic information.
- 7. Environmental Assessment:** Under UNCLOS and CBD, States are required, as far as practicable, to identify processes or activities under their jurisdiction or control which may pollute or cause significant adverse impacts to the marine environment or marine biological diversity in ABNJ.¹⁴ In some fisheries, application of a precautionary approach for proposed activities is also applied.¹⁵ There is

however scope to improve coordination of such obligations to facilitate a more integrated approach to environmental assessments.

- 8. Principle of Common but Differentiated Responsibilities:**¹⁶ As highlighted there is a common responsibility of all States to protect the marine environment in ABNJ¹⁷ however there are differences in the capacities and current exploitation of the resources in marine ABNJ by different States and private entities. Although the principle provides for asymmetrical rights and obligations between developed and developing countries regarding environmental standards it is critical that developing countries can come into compliance with the regime over time through international assistance, including financial aid and technology transfer.¹⁸
- 9. Polluter pays principle:** The principle is a mechanism by which those benefiting from exploitation of a resource pay for the associated costs of environmental damage or resource depletion. The principle can be implemented through various means: taxes, charges and levies; or liability regimes could be introduced making producers liable for causing environmental damage; or resource users could be required to meet the cost of implementing environmental standards or required to post an 'environmental bond' to utilise a resource; or some costs passed onto the consumer.¹⁹

Such instruments can provide incentives for implementing more environmentally sensitive practices and can generate revenue to recover costs associated with administration of resource management policies.

2.3 Relationship between the existing legal framework and an Implementation Agreement

- 1. Compatible and consistent with international law:** An Agreement should build on the existing legal regime for ABNJ and if it is developed would need to be applied in a manner which is compatible and consistent with, international law in particular the relevant provisions of UNCLOS.²⁰
- 2. Duty to cooperate:** International cooperation is required to achieve an integrated management approach and to effectively achieve the objectives of an Agreement. Therefore the duty to cooperate should be articulated within an Implementation Agreement, along with a mechanism for strengthening coordination, with and between, organisations and institutions that are competent to regulate human activities in the marine environment.

2.4 Other potential elements

- 1. Transparency and accountability:** To minimise the likelihood of disputes and to promote international cooperation it is critical that decision-making processes are conducted in a manner that is transparent and accountable. This could be fostered by the requirement for reporting by key stakeholders and by allowing access to information and participation by observer organisations in meetings.²¹

¹³ The need for a more collaborative approach to scientific research including increased sharing of data and information was stressed by the Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction (A/61/65, 20 March 2006).

¹⁴ See CBD Articles 7(c), 14 and UNCLOS Article 206 which applies specifically to potential risks or effects of pollution to the marine environment and UNCLOS Article 145 which applies to harmful effects with respect to activities in the Area.

¹⁵ Noting Article 6(6) UNFSA. In Antarctica, the Commission for Conservation of Antarctic Living Marine Resources (CCAMLR)

is required to be notified of any 'New Fisheries' and if approved it is allowed to operate as an 'Exploratory Fishery' with requirements for research and data collection to be able to determine sustainable levels of harvest. If approved it is then allowed to operate as an 'Established Fishery' with ongoing requirements regarding assessments and application of conservation measures. Therefore information is required to ensure sustainability of a fishery before exploitation is permitted to minimize the impacts of the fishery on the environment and to encourage sustainable use of the resource.

¹⁶ See Principle 7 of the Rio Declaration, 1992

¹⁷ Article 192 UNCLOS

¹⁸ For example Article 13 of the London Protocol and Articles 202-203 of UNCLOS.

¹⁹ For example Article 16 and the Liability Annex of the Madrid Protocol.

²⁰ See Article 237 UNCLOS. For example application of area-based measures need to be consistent with high seas freedoms. As noted an Agreement could further clarify the implementation of existing obligations under UNCLOS, especially those in Part XII relating to protection and preservation of the marine environment.

²¹ For example reporting under Article 26 CBD; transparency in decision-making Article 12 UNFSA; participation by observer organizations Article 12 UNFSA, Article 169 UNCLOS and Article 23 CBD.

2. Peaceful settlement of Disputes: In accordance with the UN Charter there is an obligation on Parties to settle any dispute between them concerning the interpretation or application of an Implementation Agreement by peaceful means.²²

3 POSSIBLE INSTITUTIONAL AND ADMINISTRATIVE ARRANGEMENTS FOR THE AGREEMENT

If an Implementation Agreement is conceived as simply being an addition to the existing legal framework for marine ABNJ without any consideration to potential reforms to the work and scope of existing organisations this could prematurely limit its potential and effectiveness. Although an Implementation Agreement could provide an overarching legal framework to allow for consideration of the full range of issues and activities affecting ABNJ now and in the future this could stall negotiations making the instrument impotent. As the scope and institutionalisation of the Agreement depends on the progress (or lack of it) regarding other reform processes effecting marine governance in ABNJ, strategic decisions need to be made regarding what issues could be included in the instrument and where issues could be dealt with in other forums. For example in the fisheries sector, it may be considered more appropriate that 1995 Agreement for the Implementation of the Provisions of UNCLOS relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (UNSFSA) be expanded to include discrete high seas fish stocks in its mandate rather than the issue fall under an Implementation Agreement. Discussion is also required as to the most appropriate mechanism to achieve reform to achieve greater coordination and consistency across all RFMOs and to ensure effective conservation measures are being applied.²³ Similarly in other forums

there are ongoing discussions regarding other activities or potential reforms to marine governance in ABNJ.²⁴

Outlined below are a range of ideas regarding the possible scope and institutional arrangements for implementation of the Agreement.

3.1 Scope

International instruments can take many years to develop, therefore it is important that an Implementation Agreement achieves acceptance by an appropriate number of States to allow the agreement to be effective; that it is not stalled or delayed during the developmental process because it is perceived as being too complex; and that the instrument makes an important contribution to conservation and sustainable use of biological diversity in marine ABNJ. Although MPAs are one tool to promote conservation in ABNJ, to have an Agreement that solely focuses on the designation of MPAs, could reflect an overly narrow focus and a lost opportunity for providing legal recognition for other equally important issues.

The key goals of an Implementation Agreement could be:

- to have a clear process to establish regulations and conservation measures for activities that are not sufficiently regulated, especially unregulated, new or emerging activities;
- to provide a coordination mechanism to sectoral organizations to ensure that they are consistent and compatible in their approach for the achievement of conservation goals and sustainable use of marine resources;
- to oversee and allow for the establishment of areas that require protection

tion to conserve marine ecosystems or resources;

- to establish a process for prior environmental impact assessment, monitoring and evaluation of human activities as part of a regime that considers possible cumulative impacts across different sectors, including development of standards in relation to potential impacts of activities that may impact on designated protected areas;
- to oversee and allow for key stakeholders to agree on integrated and holistic environmental protection objectives to inform the management regimes for activities in ABNJ and more particularly in designated marine protected areas;
- to provide a framework for scientific research and assessment to monitor the effectiveness of conservation measures and to determine whether resource use is sustainable on an ongoing basis (ie adaptive management approach);
- to be a repository for information, data and research relating to the status of marine resources and ecosystems;²⁵
- to provide a mechanism to promote collaboration between scientists, sharing of data and information, capacity building and technology transfer; and
- to improve compliance and enforcement of activities in ABNJ.

Possible issues that could be included within the scope of an Implementation Agreement are provided in *Annex 2*.

3.2 Possible institutional arrangements for an Implementation Agreement

Once the scope of an Implementation Agreement is more clearly defined this will better inform the most appropriate institutional arrangement and the interaction of such an institution with existing organisations. The role of coordination at the global level as well as implementation at the regional level, also needs to be considered. Wherever possible the

²² Also Part VIII UNFSA

²³ For the first time, in January 2007 a joint meeting of five Tuna RFMOs was held to discuss common issues and to improve cooperation and coordination. At the recent FAO Committee on Fisheries meeting in March 2007, many members supported the

idea of joint meetings for non-tuna RFMOs. In addition an independent high-level panel is also working on development of a model for improved governance by RFMOs to further the recommendations of the High Seas Taskforce, the final report will be released in April 2007.

(<http://www.chathamhouse.org.uk/pdf/research/sdp/RFMOproject.pdf>)

²⁴ For example work by CBD and FAO regarding identification of high seas MPAs and discussions regarding marine genetic resources through UN forums.

²⁵ As for the Clearinghouse Mechanism under CBD.

role of existing institutions should be considered with regards to implementation of an Agreement.

1. Some options for institutional arrangements for an Implementation Agreement could include:
2. Forum of existing organisations: This forum could be used by States to co-ordinate and monitor the implementation of an Implementation Agreement through various institutional programmes. However such a forum may not be effective in relation to existing bodies if an Implementation Agreement sets out relatively new concepts for ABNJ (ie application of an ecosystem based approach, establishment of MPAs) that would require reforms in the existing bodies. The forum could consider unregulated activities and provide recommendation regarding the institutions charged with follow-up. This could be an existing or a new body. One potential drawback in delegating new responsibilities to an existing organisation is that necessary and urgent actions under an Implementation Agreement may not receive sufficient priority among the full range of that organization's responsibilities.
3. Establishment of a global body [International Oceans Authority] supported by existing global and regional scientific and technical bodies: As there is an urgent need to address the environmental problems it may be more effective and efficient to establish a centralised body with a clear mandate to progress the objectives of an Implementation Agreement and to facilitate coordination and integration between different specialized and/or regional organisations.
 - a) Various institutional structures could be applied, for the global body it could be:
 - i) composed of the Contracting Parties to the Agreement utilising a Conference of the Parties approach; or
 - ii) an international oversight body composed of representatives from international organisa-

tions with competencies in marine ABNJ; or

- iii) an independent authority/auditor that is supranational to manage the 'global commons' and operates as a trustee for ABNJ to monitor activities and to watch out for the global community's interests, to institutionalise and empower environmental and public interest stewardship; or
 - iv) an organisation following the International Labour Organisation model, involving States, Industry and Non-government Organisations.²⁶
- b) Scientific and Technical bodies could include the following structures:
- i) a Scientific and Technical Advisory and Assessment body that could advise governments and existing international bodies with a role in marine ABNJ (i.e., a regular global marine assessment process, building on regional arrangements, as supported in the UNGA (similar to the Intergovernmental Panel on Climate Change)); Recommendations on a framework and options for such a regular process are expected in 2009. These are likely to address i.e. the need for a scientific body to identify uncertainties in scientific knowledge and research needs.
 - ii) A further need may be a scientific committee to review environmental impact assessments, depending on any means developed in an Implementation Agreement for this function.
 - iii) Other functions noted above include further work on how to operationalize ecosystem-

based approaches; and promoting international collaboration and exchange of information on marine scientific research activities and findings in ABNJ.

[or

- iv) a Scientific Committee to advise but also to actively promote research where required, using the model of the Scientific Committee on Antarctic Research (SCAR)²⁷ which investigates, promotes and coordinates research activities in Antarctica and provides independent scientific advice to the Antarctic Treaty system. It is an interdisciplinary non-government organisation that provides a forum for collaborative research with scientists from different countries and disciplines. Therefore its key roles could be to guide research where it is lacking; review conservation measures and minimum standards; review environmental impact statements; collate and synthesise scientific advice from relevant bodies (eg CBD, International Seabed Authority (ISA), International Council for the Exploration of the Sea); and to determine how scientific and technical information can be applied to progress the objectives of an Implementation Agreement. The Committee could advise parties or report to an existing or new institution.]
- c) Regional bodies to implement an Agreement:
 - i) Where current Regional Seas and RFMO jurisdictions overlap an Implementation Agreement could promote collaboration between the two²⁸ and

²⁶ Palmer, G. (1992) New ways to make International Environmental Law. *American Journal of International Law* 86(2): 259-283.

²⁷ www.scar.org

²⁸ For example efforts by the Western and Central Pacific Ocean Fisheries Commission, South Pacific Forum Fisheries

where there are gaps in geographic coverage an Agreement could promote establishment of new organisations to manage biodiversity conservation;

- ii) An alternative is that the relevant stakeholders in a region (States, industry and NGOs) come together to determine shared objectives. Sectoral bodies would be responsible for implementing conservation objectives relevant to their sector however delivery would be based on integrated decisions by those from the region where measures are to be implemented. Requirements for reporting to a global body on outcomes of conservation and area-based measures could provide a useful mechanism for sharing of information and experiences between regions.

d) Revenue-Sharing

If a monetary benefit sharing system (e.g. regarding marine genetic resources) is incorporated into an Implementation Agreement, a body to manage royalties and trust funds may be required. This could be an existing body like the ISA or the GEF or a new one.

encompassing' agreement could be stalled in international negotiations and therefore may not be effective. Therefore discussion is required as to which issues would be best progressed through inclusion in an Implementation Agreement to UNCLOS and those issues that would more effectively be progressed through other means such as an United Nations General Assembly (UNGA) Resolution, through broadening the mandate of existing organisations etc. Once the scope of such an agreement has been determined, the appropriate institutional mechanisms and the extent of interaction required with, and relationship to other organisations will become more easily apparent.

CONCLUSION

The marine environment in ABNJ is subject to a range of threats and the existing legal framework for such areas is fragmented and does not always take conservation of biological diversity into account. Therefore there is a need to develop mechanisms to address this problem. A new instrument such as an Implementation Agreement that attempts to address the range of gaps in governance in ABNJ for biodiversity conservation could improve coordination and provide a focal point for promoting biodiversity conservation objectives. However an 'all-

ANNEX 1:**ARGUMENTS FOR AND AGAINST DEVELOPMENT OF AN IMPLEMENTATION AGREEMENT****1 Arguments for the development of an Implementation Agreement to UNCLOS****1.1 An Implementation Agreement could 'fill' the gaps that currently exist in the regulation of activities in ABNJ**

As highlighted there are a range of gaps in the regulatory framework for activities in ABNJ.²⁹ Even where regulations exist, provisions relating to conservation of biological diversity are lacking or are not being adequately implemented. Where conservation measures are implemented it is usually in an *ad hoc* and fragmented manner. Thus, ecosystems which are threatened are generally not currently protected and the effectiveness of those few conservation measures which have been implemented is impaired due to a lack of coordination across sectors, organisations, and stakeholders. In this light, an Implementation Agreement could *inter alia* provide a mechanism for regulation and establishment of conservation measures for unregulated, new and emerging activities³⁰ within the context of UNCLOS and allow for improved coordination across sectors.

1.2 An Implementation Agreement could provide a mechanism to coordinate an ecosystem-based approach for the sustainable use of resources in ABNJ

An ecosystem-based and multi-disciplinary approach is broadly recognized as necessary in the successful

regulation of human activities within the environment.³¹ Currently, sectoral organisations, such as the ISA or RFMOs, regulate specific activities, species or geographical areas/zones. These bodies operate through adoption of measures which are binding for their members, and limited in accordance to the mandate of the body and the sector for which they were established to regulate. The collection of supporting scientific information is usually specific to the activity. With the exception of deep seabed mining in the Area, there is usually little or no mandate to assess indirect impacts of a given activity on habitats or species, though some RFMOs are revising their mandates to consider in some fashion a broader ecosystem approach. Although there is scope for some of these mechanisms to take protection of marine biodiversity into account, there is currently no global instrument or organisation that is charged with considering the full range of threats and cumulative impacts effecting biodiversity in ABNJ, with few linkages across geographic regions. Given the current legal framework based on the regulation of specific activities, it is very difficult to manage cumulative impacts across all activities operating in ABNJ in an integrated or coordinated manner. In this light, an Implementation Agreement could, *inter alia*, provide the necessary governance structure to facilitate cooperation and coordination in assessing and managing potentially harmful human activities within ABNJ.

1.3 A specific instrument to augment UNCLOS in relation to ABNJ may be required

Although ABNJ are considered to be the 'global commons,' currently some individuals/private entities and States are benefiting from, and impacting on, these common access resources more so than

others, with long-lasting consequences. Thus, an instrument may be needed to balance the rights and interests of individual users with those of the greater humankind.

In addition, ABNJ are remote and pose logistical challenges, and the predominant role of flag States in relation to activities under their jurisdiction or control mean that monitoring and enforcement poses unique challenges. In this light, an Implementation Agreement could, *inter alia*, provide a mechanism to further clarify how activities in ABNJ are to be regulated as new uses evolve and to strengthen compliance and enforcement.

1.4 An Implementation Agreement is required to augment UNCLOS in relation to regulation of ABNJ

The United Nations Open-ended Informal Consultative Process on Oceans and Law of the Sea (UNICPOLOS) was established as a consultative mechanism to facilitate discussions relating to developments in ocean affairs and the law of the sea; however, it cannot take decisions that would change the UNCLOS framework. The Meetings of States Parties to UNCLOS largely deal with procedural issues relating to UNCLOS; they are not equivalent to some of the Multilateral Environment Agreements which have processes for ongoing convention development through Conferences of the Parties. Therefore the evolution of UNCLOS has been through development of Implementation Agreements which are interpreted and applied in the context of the Convention. There are currently two Implementation Agreements: the 1994 Agreement relating to the Implementation of Part XI ('1994 Part XI Agreement') and the 1995 Agreement for the Implementation of the Provisions of UNCLOS relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (UNSFSA).

Since the original drafting of UNCLOS there have been significant changes with how the marine environment is utilised and may potentially be utilised in the future, especially in relation to ABNJ. There has also been much greater rec-

²⁹ For example although referred to in UNCLOS, for marine scientific research, cable and pipeline laying, and the construction of artificial installations, there is no international framework governing operation or their potential impact on the marine environment or biodiversity in ABNJ. Similarly for new and emerging issues there is no regulatory structure in place.

³⁰ Potential future uses include carbon sequestration, tourism, open-sea aquaculture or extraction of gas hydrates for energy production.

³¹ Vierros, M., Douvère, F. and Arico, S (2006) Implementing the Ecosystem Approach in Open Ocean and Deep Sea Environments: An Analysis of Stakeholders, Their Interests, and Existing Approaches. United Nations University Institute of Advanced Studies. http://www.ias.unu.edu/binaries2/DeepSea_Stakeholders.pdf

ognition by the international community of the threats our actions pose to the environment and the need to conserve biodiversity and to protect ecosystem services as evidenced, *inter alia*, by Agenda 21, the Rio Declaration and the World Summit on Sustainable Development (WSSD) Joint Plan of Implementation. Therefore there is also a need within the UNCLOS framework to reflect these developments, particularly within ABNJ. An Implementation Agreement could, *inter alia*, focus on the conservation of marine biodiversity and resources in ABNJ, accurately reflecting current international concerns, recognitions and goals.

2 Responses to arguments against development of an Implementation Agreement to UNCLOS

2.1 There is no need for an additional agreement; what is required is that current instruments are implemented effectively

Response: Agreed, current instruments should be better implemented. However, there are gaps in the current legal framework and intensifying uses in ABNJ are likely to exacerbate threats to conservation and sustainable use of ocean resources and ecosystems.³² As highlighted above, the sectoral nature of regulation hinders management of cumulative impacts across sectors and application of an ecosystem based approach. The scope of current regulation does not always consider conservation of biological diversity and where conservation measures are stipulated (including area-based measures) coordination is lacking. In addition not all instruments are necessarily widely ratified and therefore are only binding on a small number of States, although this may also be the case with any new Implementation

Agreement.³³ However, the development of an Implementation Agreement should not affect efforts to more effectively implement current instruments, and indeed may spur them on.

2.2 Some States are not yet Party to UNCLOS therefore an Implementation Agreement could not be binding on all States

Response: This is true for all conventions and regional management organizations. That said, ABNJ are a concern of the international community and therefore mechanisms under international law should be utilized to their fullest extent possible. Obviously the more States that are a party to an international agreement, the more effective it can be in achieving its objectives. However as demonstrated by initiatives by the private sector and non-State actors relating to climate change mitigation, even if some States do not consent to be bound by international instruments, there would still be scope for those undertaking activities in ABNJ to voluntarily implement conservation measures in accordance with an Implementation Agreement. In addition as for UNFSA, it could be possible that States could be party to an Implementation Agreement without being a party to UNCLOS. Therefore States that may not yet be a party to UNCLOS need not be excluded from the right to be involved in the development of, or be a party to, an Implementation Agreement.³⁴

2.3 The Agreement should be placed within the regime of the Convention of Biological Diversity

Response: As highlighted in the report of the *Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond*

areas of national jurisdiction, the jurisdictional scope of CBD applies to processes and activities carried out under the control of States and does not extend to the conservation and sustainable use of components of marine biological diversity beyond areas of national jurisdiction.³⁵ Nevertheless, it was recognized that certain CBD provisions are applicable, such as the obligation to identify and monitor.³⁶ Therefore if an Implementation Agreement to the CBD was developed, its scope would be limited to activities and processes under national jurisdiction and control³⁷ whereas under UNCLOS this would not necessarily be the case. Parties to CBD also recognised that UNCLOS provides the legal framework for regulation of activities in marine ABNJ³⁸ but that there is scope for collaboration between the Conventions for example with issues such as mechanisms for the identification, establishment and effective management of MPAs³⁹ and deep seabed genetic resources⁴⁰ and conservation and sustainable use of biodiversity.⁴¹ In addition work currently being undertaken under CBD relating to an ecosystem-based approach and criteria for MPAs can provide principles that could be applied

³² *Conservation: Challenges and Opportunities for Meeting the 2010 and 2012 Targets*, Background Paper for the European Expert Workshop 'Countdown 2010 and Marine Ecosystems' April 18-20 2007, Berlin, Germany. For a discussion regarding gaps specific to high seas fisheries: Moleenaar, E.J. (2005) Addressing Regulatory Gaps in High Seas Fisheries. *IJMCL* 20(3-4): 533-570.

³³ For example the 1996 Protocol to the London Convention has currently only been ratified by 29 countries.

³⁴ Article 4 Part XI Agreement to the Convention specifies that States or entities that consent to be bound by the Part XI Agreement must also consent to be bound by the Convention. There is no equivalent provision in UNFSA.

³⁵ Report of the Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction. A/61/65, 20 March 2006.

³⁶ Article 7(c) CBD

³⁷ See Kimball, L. A. (2005) *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*. Secretariat of the Convention on Biological Diversity, Montreal, Technical Series no. 19.

³⁸ Article 22(2) CBD The law of the sea prevails in instances where the implementation of CBD conflicts with it (Glowka *et al* (1994) *A Guide to the Convention on Biological Diversity*, IUCN Gland and Cambridge, 3rd edition 1999). However, Article 22(1) provides an important exception where the exercise of those rights and obligations would cause a serious damage or threat to biological diversity, the CBD prevails.

³⁹ Paragraph 31, Decision VII/5 of CBD.

⁴⁰ Paragraphs 54-56, Decision VII/5 and Decision VIII/21 of CBD.

⁴¹ Paragraphs 30, 59-62, Decision VII/5 of CBD.

within the UNCLOS framework through an Implementation Agreement.⁴²

An Implementation Agreement would need to be coherent with the provisions in the existing UNCLOS Implementation Agreements (UNFSA and Part XI Agreement) and the work of their respective bodies (RFMOs and the ISA) which further emphasises the need for an Implementation Agreement to be placed within the UNCLOS context. Therefore although the focus of the CBD is the conservation of biodiversity it seems more appropriate that a regime for biodiversity conservation in marine ABNJ be incorporated into the UNCLOS regime which is the overarching framework for regulation of activities in the marine environment.

2.4 Agreements take years to develop and there are short-term priorities

Response: Development of an Implementation Agreement should not impinge on the current progress being made by different initiatives in sectoral bodies and organisations. To successfully achieve conservation of marine biodiversity in ABNJ requires effective implementation of a range of instruments and mechanisms. The aim of an Implementation Agreement is to provide a framework for more effective coordination and integration of current activities and where necessary to fill the gaps in governance in ABNJ. It is not the intention of the Agreement to override current processes and therefore in the interim period before an Implementation Agreement is developed, parties to UNCLOS, CBD and the Regional Seas Conventions should continue to strengthen and improve implementation of their activities within the existing framework, which in turn could inform the gaps to be addressed in an

Implementation Agreement. Immediate actions such as improved implementation of existing instruments, the halting of destructive practices such as bottom trawling and application of a precautionary approach in decision-making processes should remain as priorities.⁴³

CONCLUSION

As highlighted by the range of recent activities through UNGA, FAO, CBD and other bodies, States are recognising the threat faced by marine ecosystems in ABNJ. There is a need for improved implementation of and better coordination between current instruments. Additionally, there are gaps and shortcomings in the current legal framework for ABNJ and in the institutional governance structures. The aim of an Implementation Agreement is to clarify and augment existing obligations in UNCLOS for international cooperation with respect to the protection of marine ecosystems in ABNJ. It could provide a mechanism for coordination to assist sectoral bodies more effectively achieve their goals while also bringing a more holistic and integrated approach to management of ABNJ. An Implementation Agreement could also facilitate cross-sectoral and multi-disciplinary monitoring and evaluation of impacts to assess the effectiveness of conservation initiatives and to oversee the progress of agreed environmental objectives. The Agreement could provide a mechanism for regulation of those activities in ABNJ that have arisen since the development of UN-

CLOS. It could also apply current thinking relating to biodiversity conservation such as the environmental principles of CBD, application of an ecosystem-based approach and take into consideration the use of recently developed technological or economic instruments.

There should continue to be an ongoing discussion in the international community as to short-term and long-term actions required for improvements and reforms to marine governance.

⁴² Convention on Biological Diversity (CBD) Ad Hoc Open-ended Working Group on Protected Areas (2005) 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. Montecatini, Italy 13-17 June 2005. UNEP/CBD/WG-PA/1/INF/2 28 April 2005.

⁴³ As highlighted in UNGA Resolution 61/105, urgent action is required to address destructive fishing practices and to protect marine biodiversity and particularly vulnerable marine ecosystems, however further work is required for RFMOs to consistently put this resolution into practice. This Resolution reaffirms (paragraphs 66-69) of resolution 59/25. Some RFMOs have taken the initiative to halt bottom trawling, for example the North East Atlantic Fisheries Commission (NEAFC) has closed certain areas for three years to bottom trawling and static gear to protect vulnerable deep-water habitats NEAFC Recommendation for the Protection of Vulnerable Deep-water Habitats, Decided at the 23rd Annual Meeting, November 2004 and effective from 1st January 2005 until 31st December 2007. http://www.neafc.org/measures/measures-2007/deep-water_05-07.htm

ANNEX 2:

POSSIBLE ISSUES THAT COULD BE INCLUDED WITHIN THE SCOPE OF THE IMPLEMENTATION AGREEMENT

Outlined below are some proposed issues that could be included within the scope of an Implementation Agreement as a starting point for the discussion.

Area-based measures

A range of area-based measures are currently in use or could be further developed for broader use in ABNJ. At a sectoral level, the International Maritime Organisation (IMO) has established 'Special Areas' and 'Particularly Sensitive Sea Areas' and once such areas are designated, special protective measures can be adopted, which must be respected by vessels flying the flag of all IMO members.⁴⁴ In the fisheries sector, some RFMOs are applying area-based conservation measures where areas are designated for closure or activities are restricted.⁴⁵ Application of an area-based measure at a sectoral level however may not achieve conservation and sustainable use objectives if the effects of other activities in an area are also not considered, reinforcing the need for an integrated ecosystem-based approach.

MPAs have been established in marine areas within national jurisdiction and in deepsea habitats and can provide a useful tool for sustainable management of marine ABNJ across a range of sectors if they are well-planned, funded and man-

aged effectively.⁴⁶ The WSSD in 2002 called for action to maintain the productivity and biodiversity of important and vulnerable marine areas both within and beyond national jurisdiction. It also set a timetable for action calling for adoption of the ecosystem approach by 2010 and the establishment of representative networks of MPAs by 2012. Parties to CBD have committed to a work programme that includes the establishment by 2012 of a global network of MPAs.⁴⁷

Currently work through a number of fora has considered development of ecological criteria to underpin a scientific basis for identification of a network of high seas MPAs (HSMPAs).⁴⁸ The question is whether a focussed agreement on HSMPAs between competent bodies should be developed or whether this issue could be included within the scope of an Implementation Agreement? In terms of identification of HSMPAs, CBD could provide a central focal point to consolidate the efforts on development of identification criteria. The Implementation Agreement could potentially provide a mechanism to oversee and coordinate the establishment of areas that require special protections to conserve marine ecosystems or resources, promoting international cooperation and collaboration at global and regional levels in this effort. This mechanism could consider and promote the implementation of other area-based measures in ABNJ [such as spatial planning] as these tools evolve, to further support coordinated and integrated ocean management.

Marine genetic resources

With increasing scientific and commercial interest in living organisms found in association with active hydrothermal vents and cold water seeps, there is concern to manage bioprospecting for deep seabed genetic resources in ABNJ to ensure sustainable use of resources and to minimise potential adverse environmental impacts. The diversity of genetic resources in the water column of the high seas has been investigated to a lesser extent although sampling research indicates that the potential of such resources is yet to be realised.⁴⁹ There is also concern to promote scientific investigation and to manage potential threats to Marine Genetic Resources (MGR) such as destructive fishing practices, deep seabed mining, tourism, marine pollution and MSR (which may include bioprospecting, see below).⁵⁰ Most of these issues have been discussed in several international fora, notably in the last three years, together with the issue of potential sharing of benefits arising from the exploitation and utilisation of these genetic resources with the international community.⁵¹

A recent study has identified at least 14 companies actively involved in product development and/or collaboration with research institutions in relation to derivatives of deep-sea genetic resources in deep-sea areas both within and beyond

⁴⁴ IMO Res. A.982(24) Revised (2005) Guidelines For The Identification And Designation Of Particularly Sensitive Sea Areas; IMO Res. A.927(22) Guidelines for the Designation of Special Areas.

⁴⁵ For example: CCAMLR Schedule of Conservation Measures in Force for 2005/06 http://www.ccamlr.org/pu/E/e_pubs/cm/05-06/all.pdf and closures within a defined area and for a specific time period, see Inter-American Tropical Tuna Commission Ad hoc meeting, La Jolla, California, USA, 5-6 February 2007, Document AH-05, *Review of IATTC Management Measures for Tunas in the Eastern Pacific Ocean, and Current Management Options* <http://www.iattc.org/PDFFiles2/AH-05-Review-of-management-measures.pdf> and the closure of certain areas to bottom trawling (see example in note 44).

⁴⁶ For example see Leary, D. (2005) Conservation and management of vulnerable deep-water ecosystems in areas beyond national jurisdiction: are marine protected areas sufficient? *PARKS* 15(3): 57-64.

⁴⁷ See <http://www.biodiv.org/programmes/cross-cutting/protected/default.asp>

⁴⁸ As per note 43 CBD (2005) (and outcomes arising from this workshop); Guidelines for the Identification and Selection of MPAs in the OSPAR Maritime Area and Guidelines for the Management of MPAs in the OSPAR Maritime Area, see www.ospar.org; and results arising from the FAO Workshop held in June 2006 to improve guidance concerning the role of MPAs in fisheries management. As a result of the workshop technical guidelines on the design, implementation and review of MPAs are being developed.

⁴⁹ A study in the Sargasso Sea study discovered 1.2 million previously unknown genes through its sampling in the high seas water column. Venter, J.C., Remington, K., Heidelberg, J.F., Halpern, A.L., Rusch, D., Eisen, J.A., Wu, D., Paulsen, I., Nelson, K.E., Nelson, W., Fouts, D.E., Levy, S., Knap, A.H., Lomas, M.W., Nealson, K., White, O., Peterson, J., Hoffman, J., Parsons, R., Baden-Tillson, H., Pfannkoch, C., Rogers, Y. and Smith, H.O. (2004) Environmental Genome Shotgun Sequencing of the Sargasso Sea Science 304(5667): pp. 66 – 74. <http://www.sciencemag.org/cgi/content/abstract/304/5667/66>

⁵⁰ Noting also potential impacts from proposed future activities such as storage of carbon dioxide in the sea bed.

⁵¹ Such benefit sharing could be non-monetary, focused on, for example, exchange of information, training and capacity building, access to and transfer of technology. It could also encompass financial benefits from exploitation and commercialization of MGR.

national jurisdiction.⁵² These companies are predominately based in North America and Europe and include some of the world's largest biotechnology companies. Six of these companies market products derived from deep-sea genetic resources sourced from areas within and beyond national jurisdiction. In addition, the study reported that from a search of European and US Patent databases at least 37 patents have been granted with respect to products derived from these deep-sea genetic resources.

Current status of regulation of MGRs of the deep seabed

In ABNJ, the ISA was established under UNCLOS as the organisation through which States organise and control all activities relating to exploration and exploitation of the resources of the Area,⁵³ specifically mineral resources.⁵⁴ The ISA is also to provide for the equitable sharing of financial and other economic benefits derived from these activities, as the Convention provides that minerals-related activities are to be carried out for the benefit of mankind as a whole.⁵⁵ However the ISA under Part XI has no direct authority to regulate the exploitation of living resources in the Area because as it is defined the term 'resources' refers to non-living resources.⁵⁶ Although the scope of the CBD applies to the 'fair and equitable sharing of the

benefits arising out of the utilization of genetic resources', in ABNJ it only applies to the extent that States regulate the processes and activities of their nationals. To date no State regulates the activities of its nationals with respect to the MGR of the deep-sea beyond national jurisdiction.⁵⁷ Therefore access, sharing of benefits and environmental impacts from exploitation of MGR in ABNJ are currently unregulated.

Marine scientific research activities in the Area do not constitute the legal basis for any claim to any part of the marine environment or its resources,⁵⁸ and such research is to be carried out for the benefit of mankind as a whole.⁵⁹ Furthermore Parties are to promote international cooperation with a view to strengthening the research capacity of developing countries and less technologically developed States. They are to effectively disseminate research results and analyses and promote and encourage the transfer to developing countries of marine technology and scientific knowledge related to mining in the Area.⁶⁰ The ISA may also carry out MSR concerning the Area and its resources; shall promote and encourage the conduct of MSR in the Area, and shall coordinate and disseminate the results of such research and analysis when available.⁶¹ The ISA carries out this responsibility through workshops, seminars, and there are proposals for a trust fund to promote participation by developing countries in MSR.⁶²

Role of the ISA

It is argued that financial and economic benefits derived from exploitation of MGR, should be shared on an equitable basis rather than kept for the benefit of the few technologically advanced States that are in a position to extract these resources. The Group of 77 and China have suggested that a benefit sharing regime for deep-seabed genetic resources could be included in the mandate of the ISA given the symbiotic relationship of the biodiversity with the deep seabed and its mineral resources.⁶³

The ISA is considering how within its existing mandate, the work of the ISA could be broadened to take on a greater conservation role with respect to deep seabed areas. For example, greater application of paragraph 2(x) of Article 162 of UNCLOS allows the Council of the ISA to disapprove specific areas for exploitation in cases where substantial evidence indicates the risk of serious harm to the marine environment, empowering the ISA to establish 'protected areas'.⁶⁴ However it has been proposed that the mandate of the ISA, under Article 145 of UNCLOS, could potentially be expanded to deal with all issues relating to deep-sea biodiversity, including genetic resources.⁶⁵ Article 145 provides for development of environmental protection regulations relating to the exploration for and exploitation of the mineral resources of the seabed beyond national

⁵² See Leary, D. (2006) *Bioprospecting And The Genetic Resources Of The Deep-Sea Beyond National Jurisdiction-An Overview Of Commercial Interest And The Main Legal Issues Involved*, Briefing Note for the 3rd Global Oceans Forum, UNESCO Paris 23-28 January 2006, Centre for Environmental Law, Macquarie University, Sydney, Australia. pp 2.

⁵³ Articles 1(1)(3); 157 UNCLOS

⁵⁴ *In situ* in the Area at or beneath the seabed. Article 133, para. A, UNCLOS

⁵⁵ Article 140 UNCLOS

⁵⁶ Article 133 UNCLOS: 'resources' means all solid, liquid or gaseous mineral resources *in situ* in the Area at or beneath the seabed, including polymetallic nodules and when recovered from the Area are referred to as 'minerals.' It should be noted that in accordance with Article 145 the ISA does have the mandate to regulate mining activities in order to protect the environment and to prevent damage to flora and fauna of the Area from mining activities, however that is the extent to which it currently deals with the conservation and management of living natural resources.

⁵⁷ Leary, D. (2006) *Bioprospecting And The Genetic Resources Of The Deep-Sea Beyond National Jurisdiction-An Overview Of Commercial Interest And The Main Legal Issues Involved*, Briefing Note for the 3rd Global Oceans Forum, UNESCO Paris 23-28 January 2006, Centre for Environmental Law, Macquarie University, Sydney, Australia. pp 3.

⁵⁸ Article 241 UNCLOS

⁵⁹ Article 143(1) UNCLOS

⁶⁰ Articles 143(3) UNCLOS, noting also the requirements on States under Articles 242-244.

⁶¹ Article 143(2) UNCLOS

⁶² Statement of Satya N. Nandan, Secretary General of the International Seabed Authority. Agenda Item 71: Oceans and the Law of the Sea. 61st Session of the General Assembly of the United Nations. 7 December 2006. pp 8-9.

http://www.isa.org.jm/files/documents/EN/Press/UNGA/2006_unga_fin.pdf

⁶³ Statement on behalf of the Group of 77 and China at the meeting of the *Ad hoc open-ended informal working group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction*, February 2006.

⁶⁴ Nandan, S. (2003) *The International Seabed Authority and the governance of High Seas Biodiversity*, Cairns Workshop, 2003, pp 3
<http://www.highseasconservation.org/documents/nandan.pdf>

⁶⁵ Report of the *Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction* (2006) A/61/65 20 March 2006, UNGA Oceans and the law of the sea. paragraph 29.
<http://daccessdds.un.org/doc/UNDOC/GE/N/N06/277/50/PDF/N0627750.pdf?OpenElement>

jurisdiction, however the ISA does not currently have jurisdiction regarding other activities which may threaten the flora and fauna of the seabed, to do so would require negotiation of an expanded mandate through an Implementation Agreement, Protocol (or amendment to the Convention).⁶⁶ Although earlier proposals to extend the mandate of the ISA have not been pursued⁶⁷, more recently the UNGA has reiterated the importance of the ongoing formulation by the ISA of rules, regulations and procedures to ensure the effective protection of the marine environment, the protection and conservation of the natural resources of the Area and the prevention of damage to its flora and fauna from harmful effects that may arise from activities in the Area, suggesting that a future proposal may achieve wider acceptance.⁶⁸

If MGRs are to be included within an Implementation Agreement, the potential role of the ISA in such a regime also needs to be discussed. Whilst legally it would be possible to broaden the mandate of the ISA which would reduce the need for development of a new institutional structure for regulation of MGRs, it will be a political decision by the States

as to whether this will occur. It is also argued that an organization designed to satisfy a mix of seabed and land-based mining States would not be the most appropriate organization to take on a greater conservation role.⁶⁹ Furthermore the current institutional system for the management of the Area by the ISA to date is largely untested in practice.

Potential inclusion of MGRs within the scope of an Implementation Agreement

As discussed the issue of MGR in ABNJ can be divided into a number of aspects relating to:

- The need to manage potential adverse environmental impacts to MGR from human activities eg destructive fishing practices, deep seabed mining, pollution, bioprospecting and MSR;
- The need to ensure sustainable use of MGR;
- The sharing of knowledge, access to and transfer of technology and training and capacity building; and
- The sharing of financial benefits arising from the exploitation and utilisation of MGR.

These issues could be dealt with by a range of different mechanisms and not necessarily in the one instrument (eg there are currently some initiatives by RFMOs to address the impacts of destructive fishing practices, while potential impacts from deep seabed mining in ABNJ already fall under the mandate of the ISA), although politically it may be difficult to discuss the conservation and sustainable use of MGRs without the issue of financial benefits being raised. In terms of stakeholders, the biotechnology industry requires a level of legal certainty, developing countries are seeking sharing of benefits and technology transfer, scientific researchers require a system that does not unnecessarily hinder

their work and those interested in conservation would like to see environmental impacts minimized and that some level of the financial benefits can be used to fund conservation activities.

As mentioned, discussions relating to MGR are still ongoing in international fora,⁷⁰ and the issue will be discussed in further detail at the next UNICPOLOS meeting in June 2007 and the 2008 *Ad hoc Working Group* meeting.⁷¹ The outcomes of these discussions should shed some light as to the extent to which an Implementation Agreement could include the issue within its scope and whether there will be a different regime for deep seabed MGRs and those in the water column.⁷² Some options and further issues are outlined below.⁷³

Potential management of environmental impacts

To address potential adverse environmental impacts on MGRs through an Implementation Agreement this can be delivered through a combination of:⁷⁴

1. Prior EIA can be used to ensure that MGRs are used sustainably and that activities will not have broader impacts on ecosystems. In terms of bioprospecting it is difficult to differentiate

⁶⁶ Expanding the mandate of the ISA would require amendment or interpretation of UNCLOS so that MGRs of the seabed are considered as 'common heritage of mankind' as per the mineral resources of the Area. The sharing of benefits from their exploitation could be governed in accordance with the Part XI principles of UNCLOS, with some adaptation for the specific features of exploitation of genetic resources. Reopening the debate on the regime of the Area (ie amending the Convention) is not considered a viable option as the discussions relating to the seabed regime proved to be one of the most complex questions in the context of the adoption of UNCLOS. Background Paper No. 12 on *Reflections on the Management of Genetic Resources in Areas Beyond National Jurisdiction* of the Background Documents for the Green Paper Towards a Future Maritime Policy for the Union: A European Vision for the Oceans and Seas, 11 July 2006, Council of the European Union, Brussels. pp 8. http://ec.europa.eu/maritimeaffairs/suppdoc_en.html

⁶⁷ Birnie, P.W. and Boyle, A.E. (2002) *International Law and the Environment*, 2nd edition, Oxford University Press, Oxford. pp 213.

⁶⁸ UNGA Resolution 61/222, paragraph 28.

⁷⁰ Such as the United Nations, CBD and under the ATS.

⁷¹ The topic of 'marine genetic resources' is on the agenda for UNICPOLOS8 (June 2007) and 'genetic resources beyond areas of national jurisdiction' for the 2008 meeting of the *Ad hoc Working Group* and it is hoped that this will include presentations and discussions relating to issues for genetic resources of both the deep seabed and the high seas water column.

⁷² It is thought that exploitation of MGRs in the water column falls under the regime of the High Seas, whereas there is debate as to the extent that the UNCLOS Part XI regime for the Area applies to MGRs of the deepsea bed, potentially resulting in a fragmented regime for MGR (Arico, S and Salpin, C. (2005) *Bioprospecting of Genetic Resources in the Deep Seabed: Scientific, Legal and Policy Aspects*, United Nations University- Institute of Advanced Studies, pp 56).

⁷³ It will also be important to keep track of the CITES discussions regarding 'Introduction from the Sea' and whether there is scope for listing species that are exploited for their MGRs.

⁷⁴ It will be useful to identify the range of threatening processes to MGRs and to allow scope in the provisions for potential future activities which may threaten MGRs.

⁶⁹ Breide, C. and Saunders, P. (2005). *Legal challenges for the conservation and management of the high seas and areas of national jurisdiction*. WWF International, Gland, Switzerland. pp 88. <http://assets.panda.org/downloads/legalchallengesreport2005.pdf>

between it and 'pure' scientific research as the methods are similar (or the same), and because samples recovered purely for research purposes could later be analyzed and utilized for potential commercial applications (ie can be used for more than one purpose). However if EIA is required for all activities regardless of purpose as per the Madrid Protocol (see *section 3.2.2(c)*), a distinction between the two activities may not be necessary.⁷⁵ Under the Protocol bioprospecting is subject to the same provisions as MSR, including requirements for advance notification, EIA, international cooperation in research planning, exchange of personnel and transparency through circulation of scientific observations and results.⁷⁶

2. Through marine spatial planning there is potentially scope for establishment of MPA for the sustainable management of vulnerable deep-sea or other ecosystems and recognition of unregulated activities eg destructive fishing practices.
3. Another option is self-regulation by industry and research-associated groups such as the *Code of practice for scientific activities at and near hydrothermal vents* developed by the InterRidge community of marine researchers could contribute to minimizing environmental impacts. This is a voluntary instrument only at this stage but such initiatives could inform development of regulations.⁷⁷

Sharing of knowledge, technology transfer and capacity building

The sharing of knowledge and technology transfer in treaty negotiations such as UNCLOS has been controversial due

to the reluctance of governments to compel companies and private parties to transfer technologies that may not be commercially available; objections to the terms of transfer (especially if not at market prices) and issues relating to intellectual property rights.⁷⁸ The CBD has attempted to deal with some of these issues through Articles 16-19, which could inform development of provisions under an Implementation Agreement, bearing in mind that the effectiveness of the CBD provisions will be revealed through their implementation and development of state practice.⁷⁹

Capacity building through scientific, educational, technical and other assistance is an important component of technology transfer. UNCLOS provides for capacity building activities relating to technology transfer including facilitating access of developing States to relevant technology (under fair and reasonable terms and conditions) and providing opportunities for developing States with regarding to training so that they can fully participate in activities.⁸⁰ International cooperation in MSR in the Area is also promoted to ensure that there is strengthening of research capabilities, training and fostering of employment for developing and technologically less developed States.⁸¹ If a regime for MGRs is developed, it could stipulate provisions to facilitate capacity building programmes relating to scientific research and transfer of technology.

Consideration regarding sharing of financial benefits

If MGRs are considered within the scope of an Implementation Agreement, the interests of developing countries regarding the sharing of financial benefits arise

from the exploitation and utilisation of such resources should be considered, while recognizing the need to also stimulate investment and innovation in scientific research. In the [special] case of a financial benefit sharing system, as might be developed under an Implementation Agreement, it might be necessary to draw a distinction between 'pure' scientific research and applied scientific research (bioprospecting), although this distinction may prove difficult. Another option would be to simply provide for financial or profit-sharing arrangements if and when commercial products are ultimately developed from MGR in ABNJ.

If the source of the genetic material is presumed to be difficult to trace, the International Treaty on Plant Genetic Resources for Food and Agriculture (Standard Material Transfer Agreement) provides an example of benefit sharing system through, *inter alia*, payment into an international fund to help farmers to conserve and sustainably utilize the source material.⁸² On the other hand, if it is possible to trace the origin of genetic material to ABNJ, applicable instruments are the conventions on intellectual property rights ie Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) and the Budapest Treaty on the International Recognition of the Deposit

⁷⁵ For example Articles 3, 8 and Annex 1 Madrid Protocol

⁷⁶ 2005, Resolution 7 on bioprospecting under the Antarctic Treaty (June 2005), which refers to 'scientific research activities relating to biological prospecting.'

⁷⁷ OSPAR are also developing a '*Code of Conduct for responsible marine scientific research in the high seas/deep seas*' (the proposal to do so was approved by the OSPAR Biodiversity Committee, March 2007).

⁷⁸ Birnie, P.W. and Boyle, A.E. (2002) *International Law and the Environment*, 2nd edition, Oxford University Press, Oxford. pp 585.

⁷⁹ In developing provisions relating to technology transfer, World Intellectual Property Organisation and WTO requirements would need to be considered.

⁸⁰ See Article 266 UNCLOS relating to promotion of the development and transfer of marine technology and Article 144 specifically relating to the transfer of technology in relation to activities in the Area.

⁸¹ Article 143(3) UNCLOS

⁸² Moore, G. and Tymowski, W. (2005) *Explanatory Guide to the International Treaty on Plant Genetic Resources for Food and Agriculture*. IUCN Environmental Law and Policy Paper No. 57. IUCN, Gland, Switzerland and Cambridge, UK. The funding strategy for the treaty is still under discussion but could inform development of a process under an Implementation Agreement (see Commission on Genetic Resources for Food and Agriculture acting as Interim Committee for the International Treaty on Plant Genetic Resources for Food and Agriculture Open-ended Working Group on the Rules of Procedure and the Financial Rules of the Governing Body, Compliance, and the Funding Strategy (2005) Rome, Italy, 14 – 17 December 2005 CGRFA/IC/OWG-1/05/REP <http://www.fao.org/AG/cgrfa/compfs.htm> Note The Treaty also provides for sharing the benefits of using plant genetic resources for food and agriculture through information-exchange, access to and the transfer of technology, and capacity-building and therefore could inform development of other benefit sharing provisions <http://www.fao.org/AG/cgrfa/itpgr.htm>

of Microorganisms for the Purposes of Patent Procedure and Regulations.⁸³

The grant of a patent is determined by the domestic law of the State in which the patent was granted. Some adjustments in intellectual property rights law may be necessary to link an Implementation Agreement with international and domestic regimes regarding the granting of patents for MGRs (eg provisions regarding requirements of seekers of patents to cite the origin of the materials on which they base their invention and to state what country or region it is from). This adjustment may also be required for the purposes of the CBD regime on access to and benefit sharing of genetic resources within national jurisdiction. It has been proposed that a condition of the grant of a patent could be that a percentage of royalties from profitable commercial products derived from MGRs could be allocated to a 'conservation trust fund.' The trust fund could be administered by an organization like the GEF to promote MSR and conservation.⁸⁴

Environmental Assessments

The Madrid Protocol provides for a notification procedure and prior environmental impact assessment of all activities, governmental and non-governmental, undertaken in the Antarctic Treaty area, which includes marine areas south of 60 degrees South latitude. These procedures thus apply to scientific research and, by association, bioprospecting. A particularly useful aspect of the environmental impact assessment approach is the differentiation of the nature of the impact assessment required, and the process for review of the assessment, according to whether a proposed activity is ex-

pected to have a) less than a minor or transitory impact; (b) a minor or transitory impact; or (c) more than a minor or transitory impact. In addition, the assessment must take into account not only the potential impacts of a proposed activity but *inter alia* cumulative impacts of activities in an area.

The Madrid Protocol also requires regular and effective monitoring to ensure early detection of unforeseen impacts and the development of contingency plans to respond to environmental emergencies. There are also rules relating to liability for environmental damage.

Although the range of activities to be included within an Implementation Agreement is under discussion, one option is to provide for a robust environmental impact assessment regime. The Madrid Protocol provides a useful approach that could be applied. It has been suggested that at February 2008 United Nations *Ad hoc open-ended Informal Working Group* meeting, EU Member States or the EC could foster the elaboration of standards for environmental assessment of activities and processes that may impact on high seas biodiversity and ecosystems.⁸⁵

Marine Scientific Research

Scientific research is critical for informed decision-making in biodiversity conservation. Research activities under the scope of an Agreement would need to be conducted in compliance with the principles outlined in UNCLOS⁸⁶ and the duty on States and competent organisations to publish and disseminate information.⁸⁷ As suggested above, an Implementation Agreement could further define requirements for environmental impact assessment for marine scientific research and elaborate on UNCLOS provisions on knowledge sharing, collaboration and coordination relating to research.

Fisheries

Avenues for promoting high seas governance were highlighted by the Ministerial High Seas Task Force on Illegal, Unreported and Unregulated Fishing through:⁸⁸

- a) A model for improved governance by RFMOs;
- b) Independent performance assessments of RFMOs;
- c) Better coordination and use of port and trade-related measures by RFMOs;
- d) Bringing all unregulated high seas fisheries under effective governance.

Reforms to RFMOs would require renegotiation of some RFMO mandates to achieve greater consistency between RFMOs, comprehensive geographic coverage and broadening of the scope to include conservation of biological diversity and application of the precautionary approach. As highlighted there are some efforts underway in an attempt to progress reform of RFMOs, however it is uncertain whether such action will be sufficient. This process could potentially be assisted through a mechanism for global oversight of RFMOs so as to promote a more systematic approach on an ongoing basis to the implementation of the UNFSA. One option is to provide for this through an Implementation Agreement.⁸⁹ Other options include providing for such a periodic review at meetings of States Parties to the UNFSA or at FAO/COFI. It may be useful to bear in mind that if an Implementation Agreement were to encompass fisheries issues, this would be likely to increase the

⁸³ The TRIPS Agreement is Annex 1C of the Marrakesh Agreement Establishing the World Trade Organization, signed in Marrakesh, Morocco on 15 April 1994. http://www.wto.org/english/tratop_e/trips_e/t_agm0_e.htm and the Budapest Treaty <http://www.dsmz.de/patents/bptreaty.htm>

⁸⁴ For example see Leary, D. (2005) Conservation and management of vulnerable deep-water ecosystems in areas beyond national jurisdiction: are marine protected areas sufficient? *PARKS* 15(3): 57-64. pp 57.

⁸⁵ See note 33 Gjerde (2007)

⁸⁶ Article 240 *et sequitur* UNCLOS

⁸⁷ Articles 143, 244 UNCLOS; Article 14(3) UNFSA

⁸⁸ As recommended by the Ministerial High Seas Task Force on Illegal, Unreported and Unregulated Fishing: High Seas Task Force (2006) Closing the net: Stopping illegal fishing on the high seas. Governments of Australia, Canada, Chile, Namibia, New Zealand, and the United Kingdom, WWF, IUCN and the Earth Institute at Columbia University. <http://www.iucn.org/themes/marine/pdf/hstf06.pdf>

⁸⁹ As UNFSA is the instrument which regulates high seas fisheries anything negotiated within the context of an Implementation Agreement has to be consistent with the provisions of UNFSA.

time required for negotiating the instrument.

Compliance and enforcement

Compliance and enforcement is a critical component of governance in ABNJ and there is a need to consider those activities in ABNJ that may currently be illegal or unregulated, and whether an elaboration of relevant UNCLOS provisions to take into account new instruments, new technologies, and new approaches might be warranted. For example the provisions in UNCLOS relating to the responsibilities of flag States (including the 'genuine link' obligation) are general and somewhat limited and could be elaborated in an Implementation Agreement. The role of port States in promoting compliance and enforcement has been elaborated in several regional and global instruments, which might be drawn on in elaborating UNCLOS provisions. Further clarification could be provided regarding the criteria for establishing failure to meet obligations and measures that may be taken in response to such failure (eg grounds and procedures for declaring vessels to be 'stateless' and therefore subject to boarding by others). Current IMO and FAO initiatives regarding flag State implementation to improve compliance and enforcement relating to fishing activities⁹⁰ could be used to inform the development of such provisions. Consideration also needs to be given to other areas of compliance and enforcement that could be effectively progressed through an Implementation Agreement.

* * *

⁹⁰ The IMO Sub-committee on Flag State Implementation has initiated a draft action plan to consider promotion of global coordination of port State activities. The Joint IMO/Food and Agriculture Organisation (FAO) Working Group on IUU Fishing and Related Matters will meet in July 2007 to discuss mechanisms for cooperation and collaboration between IMO and FAO, such as the FAO Global Fishing Vessel Record; vessel tracking and detection systems; port State controls; marine pollution and use of the FAO Fisheries Global Information System and IMO's Global Integrated Shipping Information System.

COUNTDOWN 2010 for Marine Ecosystems

European Expert Workshop

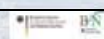
Berlin, Germany

18 – 20 April 2007

Final Agenda

18 April 07	Session	Session activities
13:00	Registration	Workshop Venue: Hotel Sylter Hof Berlin, Kurfürstenstraße 114-116, 10787 Berlin, Germany
14:00	Opening of the Workshop: Key Notes	Astrid Klug (State Secretary, German Federal Ministry for the Environment – BMU) Purificació Canals (Vice-President, The World Conservation Union – IUCN) Patrick Murphy (Head of Unit for Nature Conservation and Biodiversity, European Commission, DG Environment) Saskia Richartz (EU Marine Policy Adviser, Greenpeace European Unit) Chair: Jochen Flasbarth (Head of Department for Nature Conservation and Sustainable Use of Natural Resources, BMU)
15:00	Background and Context	Meinhard Schulz-Baldes (Secretary-General, German Advisory Council on Global Change WBGU): <i>The future oceans – climate impacts on the marine Ecosystem</i> Placido Hernandez Aguilar (Administrator, European Commission, DG ENV): <i>Natura 2000 – State of implementation and next steps</i>
15:30		Coffee Break
		Leticia Martinez-Aguilar (Administrator, European Commission, DG FISH): <i>Fisheries measures in Natura 2000 sites</i> Carl Gustaf Lundin (Head, IUCN Global Marine Programme): <i>High Seas Biodiversity</i> Chair: Henning von Nordheim (Head of Department for Marine and Coastal Nature Conservation, BfN) Introduction to Working Groups and Workshop Methodology
17:30	Side Event	The importance of EU Overseas Territories and Outermost Regions for marine conservation (IUCN-led "Bioverseas" initiative)
17:30	Side Event	The marine conservation work of European NGOs: Presentations of NGO programmes • WWF North-East Atlantic Marine Ecoregion (NEAME) • BirdLife International: <i>Seabird conservation in Europe: extending the IBA Programme at sea</i> • Greenpeace
20:00		Conference Dinner in the Berlin traditional style restaurant "Zillemarkt", Bleibtreustrasse 48a, 10623 Berlin (Charlottenburg)

Gefördert durch das Bundesamt für Naturschutz mit Mitteln des Bundesministeriums für Umwelt, Naturschutz und Reaktorsicherheit



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19 April 07	Session	Session activities
09:00 – 18:00	Working Groups	<u>Working Group 1:</u> Conservation of Marine Biodiversity in the European Context • Natura 2000: Enhancing Identification, Designation and Management • EU Marine Policies Co-Chairs: Henning von Nordheim, Daniel Owen <u>Working Group 2:</u> High Seas Biodiversity • Conservation of High Seas Biodiversity – Challenges and Opportunities for meeting the 2010 and 2012 targets Co-Chairs: Carl Gustaf Lundin, Dan Laffoley
10:30 Coffee break		
12:30 – 14:00 Lunch		
15:30 Coffee break		
18:30		Stand-up reception in the Workshop venue restaurant: presentation of the cartoon movie <i>The BioDaVersity Code</i>
20 April 07	Session	Session activities
09:00	Working Group Wrap-up Session	• Presentation of Summary by Documentation Team • Continued discussion in Working Groups • Conclusions by the co-chairs
10:30 Coffee Break		
11:00 Plenary room	Plenary	• Presentation of working group conclusions in Plenary • Plenary discussion and adoption of summary • Conclusions • Closing Statements from the German and Portuguese Delegation • End of the Workshop Chair: Carl Gustaf Lundin , Head of IUCN Marine Programme
13:00	Lunch	
		<i>End of Workshop</i>

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