



Developing a Framework for Marine Protected Areas in the North-East Atlantic

*Report from the Workshop held
13-14 November 1999 in Brest, France*



DEVELOPING A FRAMEWORK FOR
MARINE PROTECTED AREAS
IN THE NORTH-EAST ATLANTIC

Report of the Workshop held
13-14 November 1999 in Brest, France

Commissioned by:

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Cover photo: A view on the deep sea floor – no “sticky mud”!
B. Christiansen, GEOMAR

Prepared by Meg Gawler

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Thanks are due too to Dan Laffoley, Duncan Huggett, Thomas Merck, and all of the presenters and participants who ensured a diverse and lively debate.

The person who really made it all possible was Maria Elard, responsible for IUEM's communications department. Her kindness and superb organizational skills were appreciated by everyone.

Stephan Lutter
Sabine Christiansen
Meg Gawler

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LIST OF ACRONYMS

BSPA	Baltic Sea Protected Areas
EEZ	Exclusive Economic Zone
EU	European Union
EU HD	EU Habitat Directive
EUNIS	European Nature Information System
HELCOM	Helsinki Commission - Baltic Marine Environment Protection Commission
IUEM	Institut Universitaire Européen de la Mer (Université de Bretagne Occidentale, Brest)
LME	Large Marine Ecosystem
MPA	Marine Protected Areas
NEA	North-East Atlantic
NGO	Non-Governmental Organization
NP	National Park
OSPAR	Convention for the Protection of the Marine Environment of the North-East Atlantic
SAC	Special Area of Conservation
SCI	Sites of Common Interest
SPA	Special Protection Area (for birds)
WWF	WorldWide Fund for Nature (in North America: World Wildlife Fund)

Workshop on Marine Protected Areas in the North-East Atlantic

13-14 November 1999
Brest, France

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Workshop on Marine Protected Areas in the North-East Atlantic 13-14 November 1999

FINAL AGENDA

Saturday, 13 November 1999

Session 1: *State of the Art: Where are we now? Examples of national and international efforts in the North-East Atlantic to fulfil the requirements of the Biodiversity Convention and the EU Habitats Directive.*

Chair: Stephan Lutter (WWF)

- 9.30 Welcome (Paul Tréguer, Director, Institut Universitaire Européen de la Mer (IUEM), University of Brest)
- 9.50 Workshop Methodology (Meg Gawler, *ARTEMIS Services*)
- 9.55 Introduction of Participants, and Expectations for the Workshop
- 10.30 Introduction to the Workshop (Sabine Christiansen, WWF)
- 11.00 Parc National Marin Mer d'Iroise (Christian Hily, IUEM)

11.20 Coffee break

- 11.45 MPA Proposals for Norway (Mai Britt Knoph, WWF)
- 12.05 EU Habitats Directive and MPAs in the UK (Dan Laffoley, English Nature)
- 12.35 State of the OSPAR work with respect to MPAs (Stefan Lutter, WWF)
- 12.50 Discussion on national possibilities, preferences, and obstacles in the establishment of MPAs

13.15-14.00 Lunch break

Session 2: *Building consensus on the outlines of WWF's position towards the setting up of Marine Protected Areas in the North-East Atlantic under OSPAR*
Chair: Sarah Jones (WWF)

- 14.00 A Framework for the Classification of Habitats for the Development of a Representative Network of MPAs in Canadian Waters (Sarah Jones, WWF)
- 14.20 Discussion
- 15.00 Coffee break**
- 15.30 Developing an Overall Framework for WWF's Position on setting up MPAs in the North-East Atlantic under OSPAR (Sabine Christiansen, WWF)
- 16.00 Discussion
- 17.30 End of day 1**

Sunday, November 14, 1999

Session 3: *Test of the OSPAR Selection Criteria and improvement/development of possible Application Schemes*

Chair: Duncan Huggett (BirdLife)

- 9.30 Introduction of new participants
9.40 Summary of the work of day one, and overview of the goals for day two
(Meg Gawler, *ARTEMIS Services*)
9.55 Results of the Azores 1999 OSPAR Workshop on Selection Criteria for
Species and Habitats (Duncan Huggett, BirdLife)
10.00 Test of criteria and application scheme on example cases: Birds, *Lophelia*,
fish, maerl beds, sea mounts
- 11.00 Coffee break**
- 11.20 Reports back to plenary of test cases for species and habitat selection
criteria
- 13.00 Lunch break**
- 14.00 Results of the Vilm 1999 OSPAR Workshop on Selection Criteria for
Marine Protected Areas, and Subsequent Developments (Thomas Merck,
BfN Vilm)
14.20 Discussion
14.40 Proposal for Application of the MPA Selection Criteria agreed at Vilm,
1998 (Sabine Christiansen, WWF)
14.55 Discussion
15.45 Summary of the results achieved (Meg Gawler, *ARTEMIS Services*)
- 16.00 End of workshop**

WORKSHOP REPORT

WORKSHOP OBJECTIVE

Build consensus on an overall framework for setting up marine protected areas in the North-East Atlantic under OSPAR Annex V.

BACKGROUND

The WWF/IUCN marine policy, *Creating a Sea Change* (WWF/IUCN 1998) identifies the following broad goals for marine conservation:

- *to maintain the biodiversity and ecological processes of marine and coastal ecosystems*
- *to ensure that any use of marine resources is both sustainable and equitable*
- *to restore marine and coastal ecosystems where their functioning has been impaired.*

The first objective of the marine policy is:

The establishment and implementation of a comprehensive, global network of ecologically representative, well managed marine protected areas (MPAs) designed to conserve areas of high biological importance and productivity.

In line with this objective, WWF will try to influence international bodies like the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) to give high priority to the conservation of biodiversity through a system of ecologically representative MPAs in its waters. Further information on WWF's North-East Atlantic Programme can be found at <http://www.ngo.grida.no/wwfneap>.

The sea area covered by the OSPAR Convention is the North-East Atlantic (NEA). This is defined as extending westwards to the east coast of Greenland, eastwards to the continental North Sea coast, south to the Straits of Gibraltar and northwards to the North Pole. This maritime area does not include the Baltic or Mediterranean seas, and the Helsinki and Barcelona Conventions apply in these sea areas. A map of the North-East Atlantic, its catchment and priority ecoregions is given below in Figure 1.

In Annex V of the OSPAR Convention, two sets of obligations to the convention are stated:

1. (arising from the OSPAR Convention of 1992): *protection of the maritime area against the adverse effects of human activities ..., to conserve marine ecosystems and ... restore marine areas,*
2. (arising from the Convention on Biological Diversity of 1992): *to develop strategies ... for the conservation and sustainable use of biological diversity.*

Thus, strategies have to be developed to tackle both obligations. Some of the contracting parties to OSPAR, in order to gather forces for quicker action, give top priority to the development of lists of species and habitats under threat or subject to rapid decline. As a result of this attention to more short-term priorities, no strategy has been developed so far, in the context of OSPAR, to establish an ecologically representative network of MPAs.

Figure 1. OSPAR Maritime Area, Catchment Area, and Priority Marine Ecoregions



As described in the report on MPA planning prepared for WWF Canada (Day and Roff, 1999), the process of identifying, selecting and establishing a truly comprehensive MPA network is a long-term undertaking, and procedures to move towards this goal are urgently needed. This workshop was designed to respond to that need, and to contribute to the current debate of designing, with as much scientific rigour as possible, a representative network of marine protected areas.

This work becomes all the more urgent in the light of WWF's new commitment for marine protected areas. At its meeting in September 1999, the WWF Marine Advisory Group endorsed the following target:

As a first step towards a global system of ecologically representative MPAs, WWF will work with all stakeholders, to establish effectively managed MPAs covering at least 10% of the world's oceans by the year 2010.

To date the majority of MPAs have been established close, if not adjacent, to shore, but many offshore areas are equally diverse, productive, and important. Designating MPAs in international waters presents particular legal and institutional challenges, as nations can regulate only the activities of their own citizens and flagged vessels in waters beyond their territorial limits or exclusive economic zone (EEZ) (Wells, ed., 1998).

This workshop provided the opportunity to discuss and refine WWF's strategy with regard to MPAs in the North-East Atlantic. The proposal put forth for discussion is that WWF should influence OSPAR to:

1. develop a strategy to set up a representative network of MPAs in parallel to the finalization of lists of threatened species and habitats, and special features and unique areas.
2. develop a consistent framework for the systematic classification of all habitats in the OSPAR area, including inshore to offshore, benthic and pelagic habitats and features.
3. develop the criteria for the selection of MPAs to ensure a representative network of sites.

Participants were asked in advance to consider the following questions:

1. Is there agreement on the fact that:
 - as a long-term goal, a representative network of MPAs needs to be established?
 - a consistent classification framework is the best basis for assessing representativeness of habitats?
 - parallel to the selection of threatened species and habitats, the process for selecting, evaluating and establishing a representative network of MPAs should be started?
2. Is it useful to consider that there are three broad categories of MPAs that take different time scales to establish:
 - individual, rather small areas protected against human abuse
 - special features and unique habitats to be protected as an entity for ecological reasons, and
 - a representative network of MPAs, involving a large number of sites and/or large areas?
3. How to proceed with the target formulated by the WWF Marine Advisory Group in September 1999 to have effectively managed MPAs covering at least 10% of the North-East Atlantic by 2010?
4. Is it possible/desirable to integrate the concept of a representative network of MPAs and the ecoregion concept _ for example by locating strictly protected MPAs, which will need various buffer zones, in strategic areas of ecoregions?

EXPECTATIONS

The expectations of the twenty workshop participants came together into five broad objectives:

1. Learn more: overview of current thinking, insights into ocean management, etc.
2. Get some action! MPAs now!!

3. Agree on a strategy for the OSPAR IMPACT meeting to take place in Brest 15-19 November 1999, immediately after the workshop.
4. Make progress towards a strategy for an MPA network in the North-East Atlantic.
5. Lay the basis for future collaboration.

RESULTS

This report does not reproduce the substantial papers prepared in advance of the workshop. For further information on each of the workshop topics, the reader is referred to the workshop documentation prepared by the WWF North-East Atlantic Programme (WWF, 1999a).

STATE OF THE ART

Marine Protected Areas in the North East Atlantic - The Background for Future Concepts (Sabine Christiansen, WWF)

The Convention on Biological Diversity (CBD), first signed in 1992 and now ratified by 176 countries, is a comprehensive, international, legally binding agreement committing governments to protect the earth's biological resources. In 1995, through the Jakarta Mandate, the parties to the convention agreed on a set of actions to protect coastal and marine environments, including establishing (or consolidating) representative systems of marine and coastal protected areas, and emphasizing the protection of ecosystem functioning.

The Convention for the Protection of the Marine Environment of the North-East Atlantic ("OSPAR Convention") has been signed and ratified by all of the Contracting Parties to the Oslo or Paris Conventions (Belgium, Denmark, the Commission of the European Communities, Finland, France, Germany, Iceland, Ireland, the Netherlands, Norway, Portugal, Spain, Sweden and the United Kingdom of Great Britain and Northern Ireland) and by Luxembourg and Switzerland. The OSPAR Convention entered into force on 25 March 1998. It replaces the Oslo and Paris Conventions, but decisions, recommendations and all other agreements adopted under those conventions continue to be applicable.

As mentioned above, Annex V of the OSPAR Convention sets out important obligations of the contracting parties with respect to MPAs:

- *protection of the maritime area against the adverse effects of human activities ..., to conserve marine ecosystems and ... restore marine areas,*
- *to develop strategies ... for the conservation and sustainable use of biological diversity.*

In addition, OSPAR's Strategy and Sintra Statement states the need to promote the establishment of a network of marine protected areas.

Furthermore, the European Union (EU) Habitat Directive of 1992 legally obliges EU member states to designate and establish protected areas when specified selection criteria are fulfilled. National lists of proposed Sites of Common Interest (SCIs) have to be approved by regional biogeographic meetings. Once selected, a site is given the status of a Special Area of Conservation (SAC). The EU Habitat Directive (EU HD) envisages a comprehensive network of protected areas, Natura 2000, made up of SACs and Special Protection Areas (SPAs) for

birds. Under Natura 2000, species and habitats under threat or in rapid decline are the main priority for the protected area system. Until recently the EU HD was applied to the 12 nm territorial waters; however, following the successful suit of Greenpeace against the UK government, the EU HD can now cover waters within the 200 nm EEZ. The EU HD has the potential to be a strong legal instrument, but the selection criteria for marine habitats and species are not appropriate for protected areas in offshore waters.

The Arctic Council, established in 1996, provides a high level intergovernmental forum to address common concerns faced by the Arctic governments and people. The members of the Council are Canada, Denmark, Finland, Iceland, Norway, the Russian Federation, Sweden, and the United States of America, with indigenous peoples associations as permanent participants. Under the auspices of the Council, a Circumpolar Protected Areas Network (CPAN) has been initiated, with the goal to:

establish ... an adequate and well-managed network of protected areas that has a high probability of maintaining the dynamic biological diversity of the Arctic Region in perpetuity.

Although 15% of the Arctic territory is under protection, no MPAs (except strips of coast associated with land) have been created.

The Helsinki Convention on the Protection of the Marine Environment of the Baltic Sea Area provides a nearby example of a regional initiative to promote the establishment of MPAs. The governing body of the Convention is the Helsinki Commission - Baltic Marine Environment Protection Commission (HELCOM), with Denmark, Estonia, European Community, Finland, Germany, Latvia, Lithuania, Poland, Russia and Sweden as contracting parties. HELCOM recommendation 15.5 states:

desiring to protect representative ecosystems of the Baltic as well as ... to ensure ample provident protection of environment and of biodiversity, recommends that the Contracting Parties take all appropriate measures to establish a system of coastal and marine Baltic Sea Protected Areas (BSPA).

WWF and IUCN define a Marine Protected Area as "any area of intertidal or subtidal terrain, together with its overlying water and associated flora, fauna, and cultural features, that has been reserved by law or other effective means to protect part of all of the enclosed environment" (Kelleher and Kenchington, 1991). MPAs can serve different purposes, such as:

- protecting marine biodiversity through a representative subset of marine ecosystems
- protecting unique, outstanding ecological features, and
- promoting the recovery of degraded areas.

MPAs are regarded as an important tool for ecosystem management. When well managed, they: protect the structure, function, and integrity of a segment of the ecosystem; increase knowledge and understanding of marine ecosystems; and function as a buffer against human exploitation, mismanagement, pollution, and disruption of ecological integrity.

A major lesson to date from MPA initiatives across the globe is that marine protected areas contribute most to ecosystem-based management if they are set up as a network. Ideally this network should be incorporated into an integrated coastal or large marine ecosystem (LME) management plan – this requires transboundary cooperation of nations, which must be guided by intergovernmental bodies, such as OSPAR, HELCOM, or the Arctic Council.

Another key concept is integrating the water column with the benthos in MPA planning, which is essential for a functional approach to LME management.

The recognition of the necessity of ecosystem-based management led to the concept of ecoregion-based conservation which is now being developed by IUCN, WWF and UNEP and other political forums. Planning at the ecoregion scale can help to advance the goal of establishing representative networks of protected areas. Ecoregions address the large-scale dynamics and requirements of ecological processes that are unique to that ecoregion, or critical for maintaining biological communities. Because they encompass similar biological communities, ecoregions can function effectively as conservation units at regional scales.

At present, an enquiry among the OSPAR member states resulted in approximately 100 areas of various sizes in the Northeast Atlantic, protected under national law, which at least border the sea. They include areas protected under the RAMSAR Convention and other sites designated only for bird protection. The type and the actual enforcement of any management measures foreseen by law were not validated in this enquiry, and it may be that many of the so-called MPAs hardly benefit from any protection in reality.

Iroise Marine National Park Project (Christian Hily, IUEM)

The Mer d'Iroise NP covers 2000 km² off the coast of Brittany, and is very well studied, especially by the Institut Universitaire Européen de la Mer (IUEM). The overall objective of the park is the integrated management of the entire area, but protected core areas still remain to be defined. Obtaining a consensual status for the park has remained challenging because of divergent user interests, conflicts between conservation and some current forms of use, and a highly politicized context with substantial economic stakes involved. Researchers from IUEM have identified three sensitive, threatened habitats of high biodiversity in the park:

- Maerl beds (*Lithothamnion corralioides*)
- Eel grass meadows (*Zostera marina*)
- Intertidal boulder flats.

The Mer d'Iroise is distinguished by strong environmental gradients (temperature, salinity, current, substrate, bathymetry), creating a diversity of habitats, and consequently high biodiversity. In addition, the pelagic and benthic systems are very productive, and the trophic network and interactions are correspondingly complex, as revealed by the abundance of superpredators such as seals, dolphins, birds, fish, and otters. The Mer d'Iroise is a valuable conservation area on many fronts as: a representative area of the habitats and communities of the French Atlantic and Channel coasts, a refuge area for threatened species, a source area for recruits for other down-current areas, and also as a reference area for global climatic change and for modelling, research, and education.

A multidisciplinary scientific team is helping the National Park authorities to identify and prioritize the economic development and conservation interests in the park area. The proposed zoning would create:

- a multiple use area for most of the park, managed to conserve ecosystem functioning
- no-take zones (harvest refugia which may be spatial or seasonal), targeting spawning areas, nurseries, and some sedentary species
- protected areas for special features and habitats: maerl beds, *Zostera* meadows, subtidal cliffs (submarine landscapes), intertidal resting areas for seals, bird nesting areas, etc.

- selective use areas, where fishing tackle destructive of the habitat is prohibited.
- Adaptive management will be the key concept in the establishment and implementation of protected areas within the Mer d'Iroise NP.

Since the workshop, the Erika, a tanker carrying heavy fuel oil, broke in two after being lashed by gale-force winds, and several thousands tons of oil were spilled 70 km off the coast of Brittany, threatening the area and its wildlife. In the wake of this and previous oil spills on this stretch of coastline WWF has called for a formal risk assessment of Europe's western seaboard.

MPA Proposals for Norway (Mai Britt Knoph, WWF)

Norway alone has over 300 protected areas involving some marine elements, most of which are nature reserves for birds. In 1995, an analysis of the entire coast was undertaken, and areas suitable for marine protection were mapped. After conflicts between fisheries and protection interests, the government produced a white paper on the coastal zone, featuring:

- conflict resolution by local influence
- local management
- a working group comprising government, fisheries / aquaculture interests, and environmental organizations (including WWF)
- use of protection categories best suited to the purpose of protection in the area.

Although this white paper was a step forward in creating a network of MPAs, it had certain weaknesses, particularly concerning the willingness to put restrictions on fishing and aquaculture. There was little focus on the precautionary principle, so that – in theory – damage could be done before protection would be conferred. OSPAR Annex V was mentioned only very briefly, and the focus was limited to coastal areas, with little attention to the sea beyond the territorial limit of 4 nm. The white paper will be presented to the Norwegian parliament, probably in the spring of 2000. Once adopted by parliament, a working group on MPAs in Norway will be established, in which WWF Norway will be invited to participate.

One of the highest priority marine habitats in Norway are the reefs of *Lophelia pertusa*, and the country's Sea Fisheries Act prohibits the destruction of known reefs. Special protection is afforded to the Sula reef, the world's largest known deepwater coral reef. Unfortunately, according to reports by fishers, these reefs are undergoing massive destruction from bottom trawling, and the associated line and net fisheries (redfish, saithe, ling, blueling, tusk) are declining. Next steps will involve mapping, suggesting new areas for protection, and promoting regulations on fishing gear in addition to the establishment of MPAs.

EU Habitats Directive and MPAs in the UK (Dan Laffoley, English Nature)

The key objectives of the EU Habitats Directive are to:

- contribute towards ensuring biodiversity through the conservation of natural habitats of wild fauna and flora, and
- maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of Community interest.

Measures taken pursuant to the EU HD are to take account of economic, social, and cultural requirements and regional and local characteristics.

In the UK, the EU HD has been transposed into law, and English Nature is charged with advising the government on implementation. To date, special habitats for birds have been protected under the Birds Directive, and 36 Special Areas of Conservation have been established, 16 of which are coastal. SACs now cover one third of the coast in England, making conservation the majority stakeholder in coastal management.

Implementing the EU HD in England provides some useful lessons for MPA planning in general, for example:

- One of the biggest jobs in the process was identifying all of the legal powers responsible for managing the coast, and this aspect should not be underestimated.
- Getting stakeholder input requires time _ often more than originally anticipated.
- Coastal MPAs must be linked with terrestrial areas.
- MPAs require buffer zones, rather than tight boundaries.
- Adequate funding is essential. The provision of £4 million over four years to produce management schemes for 12 sites allowed the initiative to move from theory to reality.

State of the OSPAR work with respect to MPAs (Stephan Lutter, WWF)

The OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic provides a mechanism for the parties to the convention to take legally binding decisions, formulate recommendations, develop action plans, report on implementation, and assess and monitor the status of the North-East Atlantic. Key players in the OSPAR deliberations are the contracting parties, intergovernmental organizations, and NGOs. Under the OSPAR Commission are two major committees on Environmental Assessment and Monitoring and Programmes and Measures, and each committee oversees a number of working groups on specific topics. As a result of the 1998 OSPAR Ministerial Meeting, NGO access to the working groups and committees has been greatly expanded.

OSPAR has undergone several milestones over the last two years:

- Entry into force of the convention (March 1998, Paris)
- Adoption of Annex V and Strategy (July 1998, Sintra, Portugal)
- Workshop on MPAs (September 1998, Vilm, Germany)
- Workshop on Selection Criteria for Species and Habitats (July 1999, Horta, Portugal)
- Workshop on Habitat Classification and Biogeographic Regions (Sept. 1999, Oban, UK)
- Meeting of Working Group on Impacts on the Marine Environment (IMPACT, 15-19 Nov. 1999, Brest, France).

The next annual meeting of the OSPAR Commission will take place in June 2000 in Copenhagen.

With regard to MPAs, OSPAR/IMPACT has identified two key tasks for the 1999/2000 period: the assessment of species and habitats in need of protection, and the assessment of existing protection programmes for marine species and habitats, together with an inventory of marine areas already protected. The inventory of existing MPAs prepared by the Dutch government raises a number of questions, such as the criteria used in listing a site as an MPA. For example, in France, most of the "MPAs" listed are simply areas where birds are protected

from hunting. Furthermore, in its present state, the inventory does not indicate which MPAs are under active management and which are still essentially paper parks.

WWF has identified a first tranche of potential offshore MPAs for the North-East Atlantic:

1. Dogger Bank
2. Sylt-Amrum Cetacean Sanctuary
3. Sula Ridge
4. Western Irish Sea Front
5. Rockall Bank and Trough
6. Celtic Shelf Break

In addition to these more specific sites, ecoregion-based conservation offers the opportunity of conceptualizing and implementing marine conservation on a much larger scale. According to WWF classification, the North-East Atlantic includes four globally important marine ecoregions (see Figure 1 above):

- Barents Sea
- Celtic Sea
- Wadden Sea
- Icelandic marine ecoregion.

One of the biggest challenges ahead remains the question of a delivery mechanism for MPAs on the high seas. To begin with, national jurisdiction should be extended to the 200 nm boundary of each country's EEZ. Beyond that, an intergovernmental mechanism will be needed for MPA establishment and management.

BUILDING CONSENSUS ON THE OUTLINES OF WWF'S POSITION TOWARDS THE SETTING UP OF MPAs IN THE NORTH-EAST ATLANTIC UNDER OSPAR

A Framework for the Classification of Habitats for the Development of a Representative Network of MPAs in Canadian Waters (Sarah Jones, WWF)

A representative network of marine protected areas in the North-East Atlantic is a WWF goal, but not yet adopted as a goal of OSPAR. The WWF Canada report on planning for representative MPAs in Canadian waters (Day and Roff, 1999) provides a solid conceptual framework, which could be applied to the North-East Atlantic. This approach requires a systematic identification of marine habitat types and the delineation of their boundaries in a consistent classification. Representativeness, based on good science and careful planning, is the essence of a protected area network that fulfils the requirements of the CBD.

The framework for MPA planning proposed by Day and Roff is based on ecological principles and the enduring geophysical and oceanographic features of the marine environment. This classification system uses physical attributes alone to predict the expected species assemblages on the basis of habitat characteristics. A major advantage of this approach is that the range of conditions influencing the distribution of marine organisms can be delineated into geographic units ("seascapes") by using remote sensing or geographical features that are already mapped. Thus, habitat boundaries can be defined functionally even where biological data are lacking. A good classification system must have predictive power, and describe the relationships between physical environments and biotic communities. A biocoenosis approach, on the other hand (ranking the presence/absence of species), would

require an impossible amount of survey work, and for this reason, Day and Roff consider the physical approach as the only one practicable in Canadian waters. This is probably true for most other marine systems as well. A basic principle of this approach is that equivalent biotopes may differ in species composition, but the species assemblages within them play equivalent ecological roles.

An important characteristic of seascapes is that they include the whole water column, incorporating both the benthic and the pelagic realms.

The Canadian framework defines a representative system of MPAs as one that:

- samples the full range of environmental gradients, or habitat types, at a given scale
- is based on a systematic, scientific framework for site selection and subsequent monitoring.

However, Day and Roff recognize that MPAs chosen on the basis of representativeness will not automatically include all of the unique or special marine features worthy of protection. Indeed, MPAs chosen to protect special marine features will contribute to a representative system – provided they are designed on sound ecological criteria, e.g. size, level of protection, connectivity, etc.

MPAs should exist within the context of large sustainable-use management areas, rather than isolated, highly protected enclaves within otherwise unmanaged areas. MPAs can make a contribution to the long-term viability and maintenance of marine ecosystems *if* they are adequate in size and connectivity, and *if* they are part of a system of integrated coastal or marine management.

Selecting MPAs without a robust classification system for determining representative marine areas is likely to be arbitrary. Five axioms provide the foundations of the Canadian approach:

- Biological communities can be differentiated and delimited as a function of geophysical factors.
- Geophysical factors (physiographic and oceanographic) can be regarded as "enduring" or "recurrent" and characterize a region on some spatial/temporal scale.
- Each physical factor exerts a predominant effect on biological communities at a particular scale.
- These scales can be ranked hierarchically.
- Based on these physical factors, biological communities can be hierarchically classified.

Day and Roff recommend the following steps to achieve a representative network of MPAs:

1. Systematically classify all marine habitat types using a consistent framework.
2. Systematically choose a network of MPAs using the framework to incorporate representative elements of each seascape.
3. Further assess the candidate MPAs for special features, socio-economic and legal aspects, feasibility, etc.
4. Develop a zoning plan to ensure that the essential elements of ecological diversity are adequately protected.

Maps are necessary to begin the classification process. In Canada, the natural regions of the Scotian shelf have been mapped. Using physical properties to predict biological communities has also been done in the UK, with good results. It was agreed that using physical properties is a good way to start developing a representative MPA network.

Developing an Overall Framework for WWF's Position on setting up MPAs in the North-East Atlantic under OSPAR (Sabine Christiansen, WWF)

OSPAR recognizes marine protected areas as one of the measures appropriate for the protection of marine species and habitats in the Northeast Atlantic. The work of the OSPAR working group on IMPACTS has focused so far, in a series of workshops, on the development of tools for the protection of threatened and endangered species and habitats, as well as outstanding features, like *Lophelia* reefs or mearl beds. However, OSPAR is also obliged to "promote the establishment of a network of marine protected areas to ensure the sustainable use and protection and conservation of marine biological diversity and its ecosystems. (Sintra Statement of OSPAR environmental ministers, 1998). This has not been tackled at all yet. Therefore, WWF asks OSPAR/IMPACT to develop concepts for the future establishment of a network of Marine Protected areas in parallel to its ongoing work (see submission to IMPACT 1999 in Workshop Documents). Figure 2 below illustrates the mechanisms to be developed in order to achieve the goals of:

- protecting marine biodiversity by protecting a representative subset of ecological subunits
- protecting unique and outstanding ecological features, such as coral reefs, hydrothermal vents, etc., and
- allowing for recovery of degraded sites by regulating human impact.

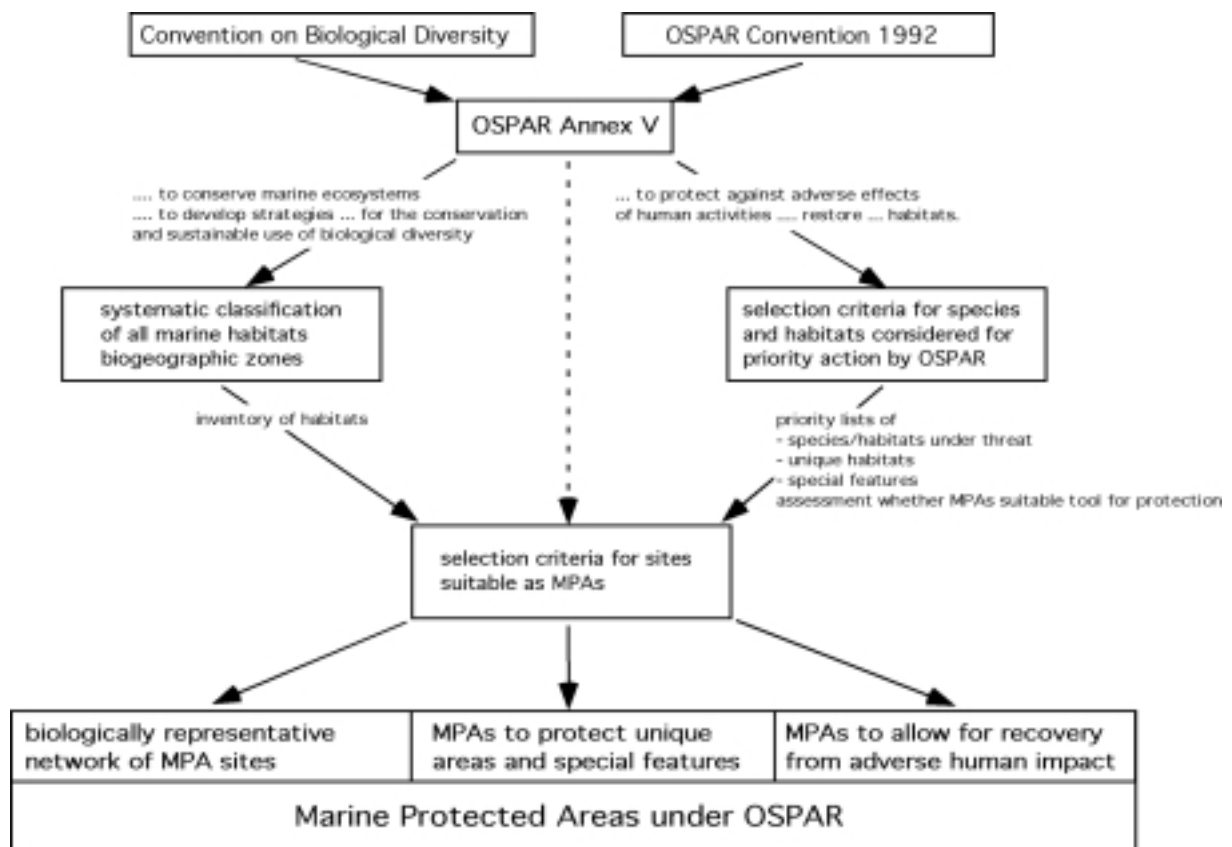


Figure 2. Working procedures leading to the designation of MPAs under OSPAR

WWF's initiative to promote a system of marine protected areas in the North-East Atlantic is based on these broad goals. It is proposed that the three goals would require different types of marine protected areas in terms of both selection criteria and management.

In order to integrate the goal of establishing a representative network of MPAs in the Northeast Atlantic in the current work of OSPAR/IMPACT, some modifications to the tools developed so far (habitat classification, species and habitat selection, site selection) are proposed:

Habitat classification and biogeographic regions

OSPAR held a workshop on habitat classification and biogeographic regions in September 1999 in Oban, Scotland, which focused on benthic coastal and deep seabed habitats. A zonation of the OSPAR area in biogeographic regions and subregions was agreed. Although the objective was to create an inventory of habitats from the classification developed, this workshop did not address pelagic habitats, nor did it provide a framework for a systematic classification of all marine habitats in the OSPAR areas.

It is proposed that for the North-East Atlantic, OSPAR should adopt a strategy similar to the framework proposed by WWF Canada to the Canadian government to develop a national system of representative marine protected areas. A consistent, hierarchical classification of all pelagic and benthic habitats is the prerequisite for giving protection to the full range of environmental gradients or habitat types. The classification proposed by WWF Canada (Day and Roff, 1999) is based on the physical environmental attributes and essentially predicts the expected species assemblages on the basis of documented enduring or recurrent habitat characteristics. These recognizable patterns in marine community types linked to recurrent physical habitat characteristics do exist and almost the same set of physical parameters is used by Longhurst (1998) to determine the biogeographic zonation of the world's oceans according to their pelagic production regimes. Using modern mapping techniques, this would provide a feasible approach to inventory all NEA habitats.

WWF considers it essential to design the selection processes for a representative system of MPAs based on the dynamics of the ecosystems as a whole. At a minimum, benthos and pelagos have to be considered as one unit, defined as a natural region (the integration of all classification levels of down to level 6 in Table 1 below) or seascapes (the integration of all classification levels down to level 8 in Table 1) in the classification of WWF Canada. Only the ecosystem approach – which is still in its infancy – allows for the determination of larger ecological units, defined by their production regimes on a scientific basis. These ecological units, which may in the end be comparable to Large Marine Ecosystems or ecoregions, are the prerequisites indispensable for selecting sites in a representative network of MPAs in the North-East Atlantic.

As shown in Table 1 (centre column), the benthic classification as agreed by the OSPAR workshop in Oban (EUNIS classification) could be integrated in such a comprehensive classification: Levels 2 (Biogeographic zone), 3 (type of water mass and duration of ice cover) and 4 (type of ice cover) are inserted before actually classifying benthic and pelagic habitats. Levels 2-4 integrate the information on solar radiation, temperature and mixing (wind - nutrients), which are the triggers for the production regime (see Longhurst 1998).

Table 1. Comparison between EUNIS classification (left), WWF Canada classification (right) and the integration of both in a proposed classification for OSPAR (middle).

Level	EUNIS classification (Oct. 1999)		Proposed classification framework for OSPAR		WWF Canada classification	
1	Environment type: - marine (A)		Environment type: - estuarine - brackish - fully marine		Environment type: - estuarine - brackish - fully marine	
2	<i>Benthos</i>	<i>Pelagos</i>	Biogeographic zone: A: Shelf and upper Continental slope and pelagic waters - East Atlantic temperate realm - Arctic realm B: Deep Sea - Atlantic realm subdivision according to - subregions - provinces		Geographic range: - Arctic Ocean Basin - Atlantic Ocean basin - Pacific Ocean basin	
	Proximity to coast and substrate: - littoral rock and other hard substrata (A1) - Littoral sediments (A2) - sublittoral rock and other hard substrata (A3) - sublittoral sediments (A4) Depth - deep sea bed (A5 and A6)	Pelagic water column (A7)				
3	<i>Benthic habitats,</i>	<i>Pelagic habitats</i>	Water temperature and duration of ice cover: - arctic waters - subarctic waters - boreal waters - temperate waters - subtropical waters		Water temperature and duration of ice cover: - arctic waters - subarctic waters - boreal waters - temperate waters - subtropical waters	
	taking account of - wave action - exposure - tidal streams	taking account of - ice - oxygen - mixing - enclosure - above/below compensation level - other criteria				
4	Biotopes (defined by biological communities) - not finalized yet		Type of sea ice cover: - permanent - seasonal - variable - absent - polynya		Type of sea ice cover: - permanent - seasonal - variable - absent	
5			<i>Pelagos</i>	<i>Benthos</i>	<i>Pelagos</i>	<i>Benthos</i>
6			Depth: - shelf and coastal water - continental slope and deep ocean - islands, - seamounts - plumes	Depth and substrate: - littoral - sub-littoral - deep sea bed	Depth: - generally recognized depth zones in bio ocean literature	Depth: - littoral/ sub-littoral/de ep sea
			stratification - stratified non-stratified frontal	- slope - exposure	stratification - stratified non-stratified frontal	- slope - exposure
7						
8					Substrate	

Other than in the classification of Day and Roff (1999), who consider benthic substrates on level 8, substrate and depth are linked on level 2 in the EUNIS classification and level 5 in the proposed integrated classification. Biogeographic regions are thought to become a modifying factor on the biotope-level (EUNIS level 4, not yet finalized).

Selection criteria for species and habitats

OSPAR also recently held a workshop on the selection of species and habitats in Horta, the Azores in July 1999. Here, sets of selection criteria for species and for habitats were agreed, and several procedures for their application were proposed but not finally adopted. The procedures differed on the point of whether only those habitats and species which are already considered threatened or endangered should be selected (Netherlands, Norway, UK), or whether, in the interest of representativeness, the selection should start with all habitats and species of the area (BirdLife). The latter approach is supported by WWF because it also allows for validating criteria such as sensitivity and ecological significance. The application of "real" data to the various application procedures was further tested in the course of the Brest workshop (see below).

Selection criteria for MPAs

In September 1998 the OSPAR workshop in Vilm arrived at a 3-step procedure to select MPAs essentially by: identifying sites according to ecological criteria, prioritizing, and considering practical constraints. Criteria were agreed for evaluating the candidate sites during the process, but a representative network of MPAs was not envisaged (see contribution by Thomas Merck below).

In order to allow for the development of a representative network of MPAs in the OSPAR area, it is proposed that the selection criteria for MPAs be adapted to this goal.

TEST OF THE OSPAR SELECTION CRITERIA AND IMPROVEMENT/ DEVELOPMENT OF POSSIBLE APPLICATION SCHEMES

Results of the Azores 1999 OSPAR Workshop on Selection Criteria for Species and Habitats (Duncan Huggett, BirdLife)

The OSPAR selection criteria for species are:

1. Global importance, when a high proportion (>75% when known) of the species, at any point in its life cycle, occurs in the OSPAR area
2. Locally important, where a high proportion of the total population is restricted to a small number of locations in the OSPAR area
3. Rarity, if the species occurs in a limited number of locations in the OSPAR area, and in small numbers
4. Sensitivity, if the species is very easily affected by human activity, and if it is expected to recover over a long (>25 years) period, or not at all
5. Keystone, if the species has a controlling influence on a community
6. Decline in numbers, extent, or quality (life history parameters).

Likewise, the OSPAR selection criteria for habitats are similarly defined:

1. Global importance, when a high proportion (>75% when known) of the habitat occurs in the OSPAR area
2. Regional importance, where a high proportion (>75% when known) of the habitat occurs in a specific biogeographic region in the OSPAR area
3. Rarity, if the habitat is restricted to few, small, and scattered locations in the OSPAR area
4. Sensitivity: very sensitive if the habitat is very easily affected by human activity, and if it is expected to recover over a very long (>25 years) period; sensitive if it is easily adversely affected and would be expected to require 5-25 years to recover
5. Ecological significance, if the habitat is very important for the ecological processes, functions, and species that it supports (e.g., spawning, breeding, reproduction, feeding, resting areas; high natural productivity or diversity; endemic species; migratory routes, etc.
6. Decline in extent or quality.

The last criterion (decline) indicates the priority for action, and is divided into four categories for both species and habitats:

- Extirpated
- Severely declined ($\leq 25\%$) remaining
- Significantly declined (25-75%) remaining
- Probability of significant decline if no protection or management measures are taken.

The application scheme suggested by BirdLife to apply these criteria is a three-step process. First, the species or habitat is classified as "green", "amber", or "red" by applying criteria 2, 3, 4, and 5 above. Species and habitats are scored according to local importance (0 or 1), rarity (0 or 1), sensitivity (0, 1, or 2), and keystone/ecological importance (0 or 1). The aggregate score then places the species or habitat in the green, amber, or red category. Second, the decline criteria are applied as in the following table to determine the priority for conservation action. Third, global importance is considered.

Table 2.

SUGGESTED SCHEME TO APPLY THE HORTA SELECTION CRITERIA TO DETERMINE CONSERVATION PRIORITY (L=low; M=medium; H=high)						
Species / Habitat	State of Decline					
	Not Known	Stable	Probable	Significant	Severe	Extinct
GREEN	L	L	M	L	H	H
AMBER	M	M	M	H	H	H
RED	H	H	H	H	H	H

BirdLife compared the results of applying the OSPAR selection criteria for sea birds in the OSPAR area, with their known rankings as Species of European Conservation Concern, which are based on:

1. whether they are species of global conservation concern
2. conservation status (endangered, vulnerable, rare, declining, localized, insufficiently known, or secure)
3. whether or not the species is concentrated in Europe.

The overlap of the two sets of criteria, in terms of conservation priorities, is poor. For birds, there is a much better overlap with known conservation priorities if global importance is given more weight, and if the decline criteria are considered earlier in the analysis, and then

the other criteria are applied. Based on this examination, BirdLife is requesting that OSPAR IMPACT consider:

- changing the criteria to recognize globally important and threatened species as the highest conservation priority for the OSPAR area
- testing the sensitivity of the order of application of the criteria to assess whether an earlier consideration of decline would result in a list of species that better reflects conservation priorities in the OSPAR area
- how best to ensure that the criteria adequately reflect differences between subspecies and races unique to parts of the whole of the OSPAR area.

Workshop participants pointed out that, contrary to the situation for birds, population data for most other species are barely known. Using “decline” as a first order criterion would mean that most species classified as “unknown” although their population biology and ecological function would select them for special protection measures. This is why the first step in the selection procedure was designed to take into account factors that could endanger the species, such as sensitivity to disturbance (e.g., because of their life cycle strategy), generally small populations, or patchy/local occurrence, which may prevent repopulation of disturbed sites. This ranking of criteria allows for a precautionary selection of potentially vulnerable species on a priority list for conservation concern.

Test of Criteria and Application Scheme on example cases: Birds, *Lophelia*, fish, maerl beds, and sea mounts

The discussion of species criteria raised a number of important points, e.g.:

- It is important to know what fundamental philosophy is behind the selection process.
- Decline does not adequately account for species that are data deficient. If a species is poorly known, it is treated as stable.
- Distribution criteria are also problematic for data-poor marine species.
- There is a danger that the criteria do not work as well for invertebrates.
- With the exception of keystone species, or species that are also habitats (maerl, *Lophelia*, etc.), it may be better to assess communities than individual species.
- Beware of blind number crunching. Opinion and common sense can also appropriately come into play. At the same time, one should be extremely cautious to avoid trying to get the criteria to come out with a common sense view of what is important. A clear and structured process is essential.

The participants tested the criteria and application scheme on other species and habitats with the following results (Table 3 below). The resulting conservation priority is determined according to the first stage classification (green, amber or red), together with the state of decline as shown in Table 2 above.

Table 3.

TEST RESULTS OF APPLYING THE OSPAR CRITERIA TO OTHER SPECIES								
Species / Habitat	Local/ Reg. Imptce.	Rarity	Sensitivity	Keystone/ Ecol Imp.	1st Stage Classif.	State of Decline	Conserv. Priority	Global Imptce.
Orange Roughy	0	0	1	0	AMBER	Probable	M	Y
<i>Lophelia</i>	0	0	0	1	AMBER	If Probable	M	
<i>Lophelia</i>	0	0	0	1	AMBER	If Signif.	H	
<i>L. corralioides</i> (Maerl)	0	1	2	1	RED	Severe	H	
Atlantic Salmon	0	0	1	1	RED	Severe	H	Y
TEST RESULTS OF APPLYING THE OSPAR CRITERIA TO HABITATS								
<i>Lophelia</i>	0	0	0	1	AMBER	Probable	M	
Maerl	0	1	-	1	RED	Severe	H	
Sea Mounts	?	0	1 ?	1	AMBER	Probable	H	

Results of the Vilm 1999 OSPAR Workshop on Selection Criteria for Marine Protected Areas, and Subsequent Developments (Thomas Merck, BfN Vilm)

The Vilm workshop produced Draft Guidelines for the Identification and Selection of Marine Protected Areas in the OSPAR Maritime Area, which identifies a three-stage process, and criteria for each stage:

1. Identification of sites according to ecological criteria
 - High natural biological diversity
 - Representativeness
 - Productivity
 - Important for a species
2. Prioritization of sites for designation
 - Species or habitats endangered, declining, or threatened with extinction
 - Important for a habitat/biotope according to criteria of the 1997 OSPAR workshop in Texel on Species and Habitats
 - Important for a species according to criteria of the Texel workshop
 - Sensitivity
 - Naturalness
3. Practical considerations
 - Size
 - Potential for restoration
 - Degree of acceptance
 - Potential for success of management measures.

Proposal for Application of the MPA Selection Criteria agreed at Vilm, 1998
(Sabine Christiansen, WWF)

WWF suggested the following approach to the process of designating selected areas as Marine Protected Areas in the Northeast Atlantic:

- Define the goals to be achieved by protection measures.
- Define the categories of MPAs required.
- Define the selection criteria relevant to the different MPA categories.
- Apply selection criteria (scientific and practical) in hierarchical way.
- Determine and designate preliminary list of sites as candidates for MPA categories.
- Raise public awareness and find partners interested in the protection of the chosen areas.
- Develop common interests with partners, and work out boundaries, reserve shape and size, regulations and management.
- Implement the MPA management plan.
- Monitor the ecological state and the effectiveness of management.

Figure 3 below presents a proposal for the application of the MPA selection criteria agreed at Vilm to the different categories of marine protected areas.

A number of questions were raised with respect to this proposal, for example:

- Would this process work for MPAs for small cetaceans?
- How information-dependent is the process?

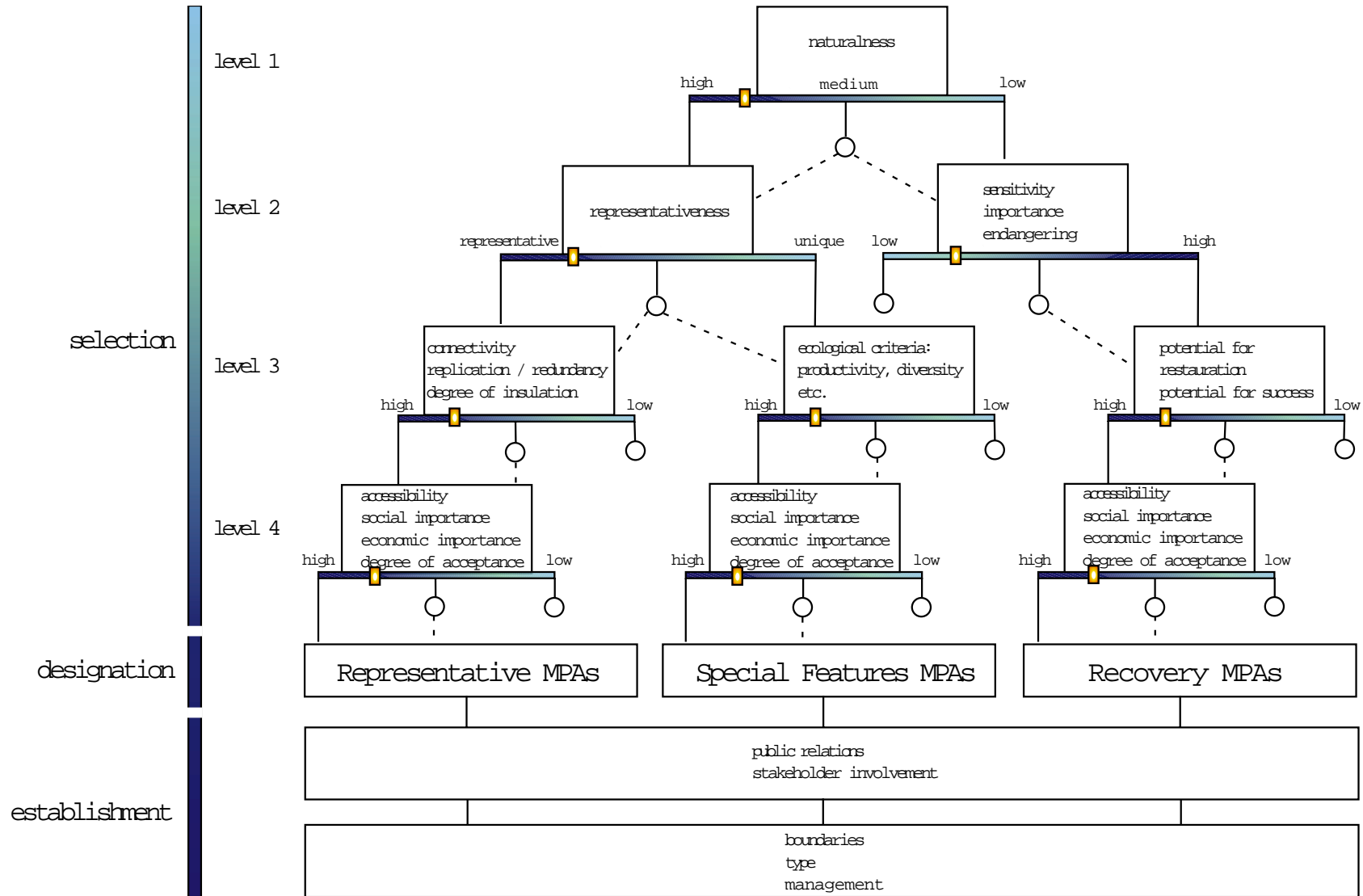
Participants felt that the distinction of several types of MPAs may not be a very useful process, and may even lead to confusion with the managing administrations and to time lost in the decision-making process.

The three objectives of representativeness, special features, and restoration could well be nested into one single, large, multiple-use marine protected area that is zoned accordingly. Likewise, management regimes of strict protection or sustainable use could apply to more than one type of MPA. It was suggested that it would be good to use one term (not three) that expresses what a marine protected area is in the OSPAR context.

It was also recommended that MPAs should be designated first and foremost on purely ecological criteria, *i.e.* on a scientific basis (levels 1-3 in the scheme below) to determine a preliminary list of sites. Practical considerations should come into play only as modifying parameter to the proposed list of sites (level 4).

Some participants felt that the selection process should be kept as simple as possible, and that a four-level hierarchy of selection criteria would be too much. The development of selection criteria should not be afforded too much effort, as the ultimate priority is to get some OSPAR MPAs declared. This was debated as procedures have to be commonly agreed and replicable for not being open to arbitrariness.

Figure 3. Proposal for the Application of the MPA Selection Criteria agreed at Vilm to the different categories of MPAs



The application process suggested in Figure 3 was tested in the case of Sula Ridge, but this did not produce a clear result. Two practical improvements were suggested to improve the proposal for applying the MPA criteria:

- Remove degree of insulation as a criterion.
- Re-word "replication" as "not replicated elsewhere as MPA" to avoid confusion.

This brief exercise provided a good reality check, indicating that more work will be needed to translate this application scheme from theory into practice in the NEA.

CONCLUSIONS AND RECOMMENDATIONS

Participants raised serious concerns about WWF's 10% target for marine protected areas, and questioned its scientific basis, its adequacy, its realism given the absence of an implementation mechanism on the high seas, and whether it really captures the WWF vision. It was noted that 10% coverage is of little value if it is inconsistent with the design criteria, or if the purpose of the MPA is not known.

While past methods for selecting protected areas, on both land and sea, have been mostly *ad hoc* or opportunistic, there has been considerable scientific debate over the last few years in MPA site selection methodologies. Laffoley *et al.* (1997) provide recommendations to add rigor and scientific credibility to the site selection process. One of the clear lessons to date is the importance of clearly defining the goals of an MPA programme, or network, *in advance* of the selection criteria or ranking process.

It was generally accepted that an MPA network based on biogeographic representation would be the most effective way to protect marine biodiversity. Representation can be based on habitat types, ecological processes, biological communities, oceanographic phenomena, etc. While biogeographic representation deals with common features of the marine environment, special elements protection – the focus of OSPAR to date – targets atypical elements of marine ecosystems, such as threatened species, unique biological assemblages, or special habitat, oceanographic, geological, physical, or chemical features. When taken together, special elements and biogeographic representation portray overall biodiversity, and provide for the incorporation of hot spots within a larger MPA system (Laffoley *et al.*, 1997).

A number of important questions were raised with respect to WWF's focus on a representative network, such as:

- How are cultural aspects included?
- Can a representative network protect all habitats and processes upon which species depend?
- How can the deep sea be included in Europe's Special Areas of Conservation?
- Will selecting MPAs on the basis on physical attributes conserve all that we value?
- Will selecting sites on the basis of representativeness deliver the objectives of a protected area network?
- Is a functional ecosystem approach realistic?

The workshop made the following recommendations to move the process forward:

1. Test the WWF Canada classification scheme in at least one place with limited biotope sampling.
2. It is important to bear in mind that the results of biological inventories do not necessarily reflect natural conditions.
3. Better use should be made of amateurs and non-scientists in data collection. Divers, fishers, and other stakeholders can help with mapping, and this helps to build the ethic of stewardship.
4. Make sure that adequate fisheries regulations and controls are in place before publishing high resolution maps, which carry the risk of greatly enhancing exploitation before conservation measures can be implemented.
5. Different selection criteria are needed for different goals.
6. MPAs are not the right approach for all habitats and species, and representativeness is only one of many reasons to select an MPA. Representative MPAs may not be sufficient to protect all habitats and processes upon which species depend.
7. WWF needs to continue raising awareness on the importance of MPAs. In so doing, it should draw lessons from previous experiences (e.g., Wadden Sea) on how to best approach the subject, and how to motivate people in favour of MPAs.
8. Involve stakeholders convinced of protection goals, and use them as multipliers.
9. There is a danger of getting lost in endless discussions of criteria, and it is of capital importance to keep the focus on getting MPAs designated and implemented without delay.

There was a strong consensus that it is important to keep the OSPAR process on track. WWF should propose to modify (not overthrow) the shortcomings. Most of all, it was emphasized that to promote MPAs in the North-East Atlantic, WWF needs an overall vision, together with both short-term and long-term strategies, and this is illustrated in Figure 4 below. Some participants felt that current knowledge is sufficient for both the first tranche and for designing a representative network, and that the real difficulty is communication.

One danger of the pragmatic approach, though, is that the process gets stuck with what is first proposed. Thus, it is important to keep the long-term goal in the minds of decision-makers.

It was agreed that WWF should focus now on moving forward to promote the first tranche of priority MPAs that have been proposed. In particular, hard coral reefs need action immediately. It is very important that the short list of MPAs is implementable.

The overwhelming recommendation is that action is needed now, and that – although pursuing a truly representative network, with all the steps required, is the ideal long-term goal – care must be taken not to let politicians misuse the concept to claim that ever more studies are needed before any action can be taken to establish MPAs.

It was strongly felt that WWF should clearly define its vision for the North-East Atlantic, and the management tools it recommends.

An environmental baseline for the NEA is needed now. However, until more information is available, the precautionary approach should apply. It was agreed that the physical classification scheme proposed by WWF Canada would be very useful, and in fact the most practicable way of gathering the scientific information necessary to design an MPA network.

There was strong support for the concept of representativeness, and caution about relying primarily on threatened species and habitats to prioritize sites for protection. The "sticky muds" are perhaps less attractive to the conservation fundraisers, but no less important for marine biodiversity than the beautiful coral reefs.

It was agreed that precautionary considerations are important regardless of the selection process. The ultimate vision is that the entire North-East Atlantic is zoned and managed as a large-scale, multiple-use marine protected area.

The vast amount of offshore areas in the OSPAR area distinguishes it from other regional agreements such as HELCOM. A procedure for designating offshore areas as MPAs in the North-East Atlantic is a clear priority, and WWF should push for a breakthrough in this.

The discussions and experiments carried out at this workshop, which brought perspectives from different organizations and individuals to bear on the subject, revealed some of the pitfalls in the OSPAR selection process as it has evolved to date. The workshop brought home the challenges and complexities of planning a comprehensive MPA network, and underscored the need to generate support for MPAs through more targeted communications, and to keep the issue of a comprehensive network of MPAs in the North-East Atlantic alive in the minds of policy- and decision-makers.

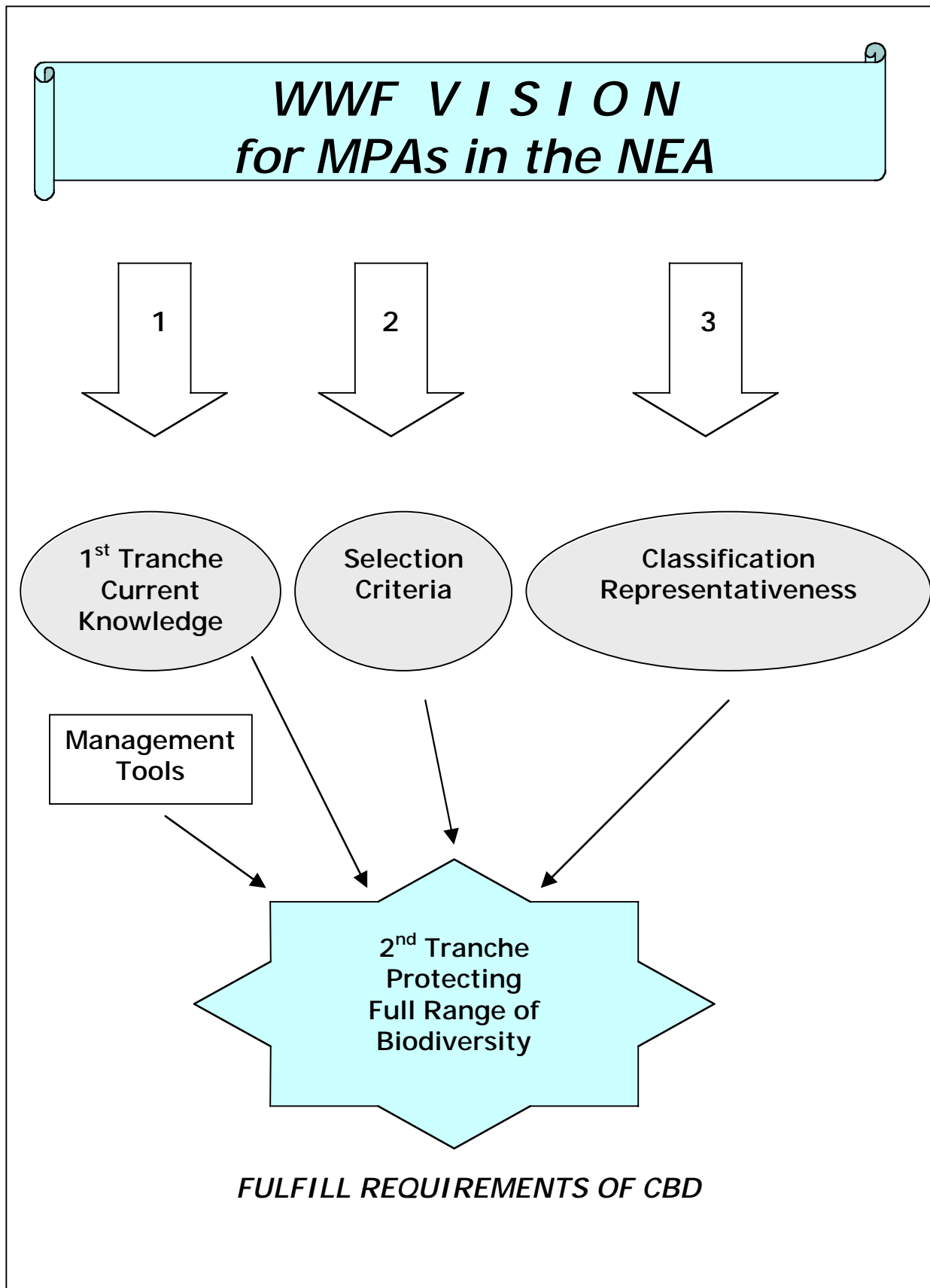
It was agreed that WWF should pursue a parallel, three-pronged approach is outlined below and in Figure 4.

WWF should influence OSPAR to:

- 1. Finalize lists of threatened species and habitats, special features, and unique areas and move forward with the first tranche of MPAs based on current knowledge.**
- 2. In parallel, develop a strategy to set up a representative network of MPAs, beginning with a consistent framework for the classification of all habitats (inshore to offshore, and benthic to pelagic) and criteria for the selection of MPAs for a representative network.**
- 3. Promote the designation and implementation of a representative network of MPAs protecting the full range of biodiversity in the NEA.**

Last but not least, the workshop laid a platform and basis for further communication and collaboration on this and related issues.

Figure 4. Process for Setting Up MPAs in the North-East Atlantic



AFTERWARD

The results of the Brest workshop put the WWF North-East Atlantic Programme into a position to develop a medium-term strategy towards an ecologically representative network of Marine Protected Areas in the maritime region covered by the OSPAR Convention. Moreover, the discussions influenced the outcome of the OSPAR Working Group Meeting (IMPACT) which was held in Brest from 15-19 November with several workshop participants involved as NGO observers and/or government representatives. For further information on WWF's contribution to the OSPAR IMPACT meeting, the reader is referred to WWF's presentation to the meeting "The Outcome of the OSPAR Workshops on Selection Criteria for Species and Habitats and/or Habitat Classification and Biogeographic Regions in the Light of Annex V and the Strategy" (WWF, 1999b).

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