Guidelines for the Development of Marine Protected Areas (MPAs) within the Falkland Islands

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1. Introduction and History of MPAs

A marine protected area (MPA) is broadly defined by the World Conservation Union (IUCN) as:

“any area of the intertidal or subtidal terrain, together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment.”

(IUCN 1988)

Such areas of protection are tools that, in tandem with other marine conservation methods, can fulfill the internationally agreed upon goal of:

“providing for the protection, restoration, wise use, understanding, and enjoyment of the marine heritage of the world in perpetuity through the creation of a global, representative system of marine protected areas and through the management in accordance with the principles of the World Conservation Strategy of human activities that use or affect the marine environment.”

(IUCN 1988)

Terms within this goal provide clues to the successful design, implementation, and long-term success of an MPA (Box 1).

With sustained conservation as the overriding goal, an individual MPA can be established for a variety of specific purposes. As such, they can vary dramatically in location, size, ecology, and level of protection. It is this flexibility, combined with effectiveness, that has helped MPAs become a commonly used tool in marine ecosystem management.

Box 1

Protection: The hallmark of an MPA is protection, whether of natural or cultural diversity. Items of biodiversity to be protected might include ecosystems and the species they contain, critical habitats for endangered or economically important species, genetic diversity and particular species. It is most important to prevent outside activities from harming the MPA.

Restoration: To restore threatened species and degraded ecosystems.

Wise use: As used in the definition, this term means for the use of people on an ecologically sustainable basis. This includes providing for the continued welfare of people affected by the creation of the MPA. It also usually involves accommodating a broad spectrum of human activities compatible with the primary goal of conservation.

Understanding: otherwise we shall not know how to manage it. Monitoring and research will be required to see if the protection is working.

Enjoyment: If the public are not able to enjoy the MPA, they will not support it. Interpretation facilities may be needed to explain the significance and interest of the MPA.

Marine heritage. This includes:

- Biodiversity, including the abundance and diversity of marine organisms
- Productivity, principally the ability of the system to produce organisms that can be harvested
- Cultural and historical elements

In perpetuity: The aim is to ensure that the protection lasts and is not undermined by insidious and cumulative degradation.

Representative: e.g. of every significant ecosystem type in a country or region. The conservation of biodiversity can only be achieved if together the MPAs include examples of all ecosystems and species.

(taken from Kelleher 1999)

Benefits of MPAs include:

- Maintaining biodiversity and associated ecosystems
- Protecting important habitats from human activities and allowing damaged areas to recover
- Protecting cultural or historical diversity
- Providing areas where species are able to find refuge, spawn, and grow to their adult size
- Increasing fish catches (both size and quantity) in surrounding fishing grounds
- Building resilience to protect against damaging external impacts such as climate change
- Helping to maintain local cultures, economies, and livelihoods which are intricately linked to the marine environment
- Providing focal points for educating the public about marine ecosystems and human impacts upon them
- Enhancing nature-based recreation and tourism
- Serving as benchmarks for undisturbed natural ecosystems that can be used to measure the effects of human activities in other areas, and thereby help improve resource management
- Providing a legal framework for remediation of environmental degradation

The idea of protecting areas of the sea from extractive uses has roots as old as early civilisations. But it was the Ramsar and World Heritage Conventions in the 1970s that galvanised more extensive protection programmes (Figure 1).

Further gains in protected areas have resulted from numerous resolutions by international bodies over the past thirty years to increase the extent of the marine environment that falls under federal or international protection (Figure 2).

(compiled from IUCN-WCPA 2008, WWF 2009)
Figure 2: A timeline of MPA resolutions by international parties (selected passages in Appendix II)
2. Current Status of World MPAs

The area protected by MPAs is an accumulation of a few large reserves and thousands of small ones (Figure 3, Table 1). Though the number of reserves and the area protected both continue to rise, only 0.7% of the world’s oceans currently lie within an MPA. Additionally, this protection is not evenly distributed among habitats or geographic regions (Figure 4).

There is no such thing as a “typical MPA.” MPAs vary extensively not only in size and geographic location, but also in their level of protection and their management regimes.

Table 1: Number of marine protected areas falling under different designations as of October 2005 (Secretariat of the Convention on Biological Diversity 2006)

<table>
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<th>Designation Status</th>
<th>National</th>
<th>International</th>
</tr>
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<tr>
<td>Formally (statutorily) designated</td>
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<td>955</td>
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<tr>
<td>Informally (non-statutorily) designated</td>
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<tr>
<td>Unknown</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>5127</td>
<td>965</td>
</tr>
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</table>

Figure 3: Existing marine protected areas as of September 2009 (from WDPA 2009)
Regulation of human activities is the staple of a marine protected area. However, very few MPAs are set up to exclude all anthropogenic effects; instead, the vast majority allow human access and some usage. Usage can be limited to non-extractive activities but can also include mineral extraction, recreational harvesting, or even limited commercial fishing. An area that is protected year-round from all extractive activities is generally termed a marine reserve, but these cover less than 0.01% of the world's oceans.

MPAs are managed at a variety of levels, often depending on the culture and wealth of the country. The managing body can be volunteers, the local community, the private sector, or a government agency. In addition, a number of sites have international designations such as Ramsar or UNESCO World Heritage status.

Different international agreements have proposed targets for protecting a proportion of the ocean. These vary, but at the current rate of MPA designation, none of the targets will be met (Figure 5).

Figure 4: Percentage of marine ecosystems protected at a regional level as of October 2005. (Secretariat of the Convention on Biological Diversity 2006)

Figure 5: Existing and predicted designation of MPAs as of October 2005. Predicted achievement of protected area goals set out by the World Parks Congresses and the Convention on Biological Diversity are forecast for 50 to 80 years after target dates. (Secretariat of the Convention on Biological Diversity 2006)


3. MPA Legislation in the Falklands

The Falkland Islands have not yet established any marine protected areas, nor are they signatories to any international agreements to do so.

The Falklands are represented in the IUCN through the membership of both Falklands Conservation and the UK’s Department for Environment, Food, and Rural Affairs (DEFRA). IUCN resolutions towards MPAs are thus relevant to the Falklands, but are non-binding.

Additionally, though the UK is a signatory to the Convention for Biological Diversity (1993) that recommends the forward progress of providing protection to marine environments, the territories are not bound to this. While six of the UK Overseas Territories have ratified the CBD on their own, the Falklands are not one of these, though steps have been taken to meet the obligations laid out by the treaty (Otley et al. 2008).

Though non-binding, the Falkland Islands Environment Charter, signed in 2001, advises, but does not legally mandate, that the government of the Falkland Islands will:

"Ensure the protection and restoration of key habitats, species and landscape features through legislation and appropriate management structures and mechanisms, including a protected areas policy..."

(Falkland Islands Environment Charter 2001)

Legislation to aid this commitment has been enacted, and the establishment of terrestrial National Nature Reserves (NNR) has occurred. Similar marine reserves have not been nominated, but existing legislation allows for such designation, which could bring the Falklands into international accord in terms of marine protection.

The Falklands' coastline is already protected from large-scale commercial fishing to a distance of 3 nautical miles seaward of the territorial baselines (Figure 6), though inshore fishing licenses can be issued by the Director of Fisheries (Inshore Fishing Regulations 1988), and the commercial harvest of kelp can be licensed by the Governor (Control of Kelp Ordinance 1970).

A formal MPA could be declared under the Conservation of Wildlife and Nature Bill (1999).

Figure 6: Territorial baselines. Points of contact with land are designated at the low-water line. Islands outside the baseline have territorial seas measured from their own low water lines. (FIG Fisheries Department 2010)
This bill declares that (Part III: 13.1):

_The Governor may by order declare any marine area to be a national nature reserve with a marine area defined as any area from land to a distance of 15 nautical miles._

Such a declaration could (Part III: 16.2):

a) provide for prohibiting or restricting the entry into, or movement within, the reserve of persons and vessels

b) prohibit the killing, taking, destruction, molestation or disturbance of animals, birds or plants of any description...or the doing of anything within the reserve which interferes with the seabed or the bed of any water

Such a declaration could not (Part III: 16.3):

a) prohibit or restrict, except with respect to particular parts of the reserve at particular times of year in relation to a pleasure boat, the exercise of any right of passage by a vessel

b) render unlawful anything done for the purpose of securing the safety of any vessel, or of preventing damage to any vessel or cargo, or saving life

c) render unlawful anything done more than 30 metres below the sea bed
4. Siting an MPA

Among the thousands of MPAs set up throughout the world, there have been grand successes as well as grand failures. Numerous methods of site selection, stakeholder involvement, implementation, and enforcement have been tried, and the amalgamation of these case studies can provide a set of best practices that can build on successes and avoid pitfalls.

MPAs are one of only many tools that should be used in conjunction to achieve an effective policy of sustainable marine ecosystem protection. A comprehensive policy that takes into account the goals and available resources for the considered environment should form the framework into which MPA designation fits.

In forming a plan for the designation and management of MPAs, a first step is to determine whether one strategy can be applied to all present and future MPA plans, or whether each MPA should develop its own protocols as the situation warrants. The parties ultimately responsible for the MPAs, the potential differences in MPA function, and the designation process will largely determine the extent to which an umbrella strategy can be applied.

The process for establishing an MPA can generally be broken down into a series of steps:

1. Establish management goals
2. Establish the process
3. Use best science to determine potential site, size, etc.
4. Involve stakeholders
5. Create and revise a management plan
6. Implement
7. Enforce and monitor

4.1 Establish management goals

Each decision made regarding an MPA will be dependent on the goals behind it. Is the MPA addressing an immediate threat or planning for future threats? Is it focused on protecting a particular species, preserving biodiversity and habitats through a representative areas plan, or highlighting a particular cultural or historical feature? Is it sited to improve an economy such as fishing or tourism? Is it part of a broader MPA network or comprehensive marine and coastal management plan?

Identifying the goals of the MPA at an early stage, including threats and context within a larger management picture, have been repeatedly proven to aid in the ultimate success of the MPA.

Depending on the objectives, an MPA can be classified among the seven categories set up by the IUCN (Box 2). As part of establishing management goals, some countries, such as Australia, require every MPA to fit into one of these categories (Australia et al. 2003).

Other countries do not require such a categorical placement, but still formally lay out objectives that can then be used to site, manage, and monitor the area. As an example, a proposed MPA around the Prince Edward Islands of South Africa identified the following four objectives:

- Contribute to a national and global representative system of Marine Protected Areas by providing protection for unique species, habitats and ecosystem processes (e.g. foraging grounds, shelf areas with increased nutrients, etc.)


**Box 2**

| IUCN la | Strict Nature Reserve: managed mainly for science | Area of land and/or sea possessing some outstanding or representative ecosystems, geological or physiological features and/or species, available primarily for scientific research and/or environmental monitoring. |
| IUCN lb | Wilderness Area: managed mainly for wilderness protection | Large area of unmodified or slightly modified land and/or sea, retaining its natural character and influence, without permanent or significant habitation, which is protected and managed so as to preserve its natural condition. |
| IUCN II | National Park: managed mainly for ecosystem conservation and recreation | Natural area of land and/or sea, designated to (a) protect the ecological integrity of one or more ecosystems for this and future generations, (b) exclude exploitation or occupation inimical to the purposes of designation of the area and (c) provide a foundation for spiritual, scientific, educational, recreational and visitor opportunities, all of which must be environmentally and culturally compatible. |
| IUCN III | Natural Monument: managed for conservation of specific natural features | Area containing one or more specific natural or natural/cultural feature which is of outstanding value because of its inherent rarity, representative or aesthetic qualities or cultural significance. |
| IUCN IV | Habitat/Species Management Area: managed mainly for conservation through management intervention | Area of land and/or sea subject to active intervention for management purposes so as to ensure the maintenance of habitats and/or to meet the requirements of specific species. |
| IUCN V | Protected Landscape/ Seascape: managed mainly for landscape/seascape conservation and recreation | Area of land, with coast and seas as appropriate, where the interaction of people and nature over time has produced an area of distinct character with significant aesthetic, cultural and/or ecological value, and often with high biological diversity. Safeguarding the integrity of this traditional interaction is vital to the protection, maintenance and evolution of such an area. |
| IUCN VI | Managed Resource Protected Areas: managed mainly for the sustainable use of natural ecosystems | Area containing predominantly unmodified natural systems, managed to ensure long term protection and maintenance of biological diversity, while providing at the same time a sustainable flow of natural products and services to meet community needs. |

(taken from IUCN 1994)

- Serve as a scientific reference point that can inform the future management of the area
- Contribute to the recovery of the Patagonian toothfish
- Aim to reduce the bycatch of the toothfish fishery, particularly of albatrosses and petrels

(Lombard et al. 2007)

These objectives then guided all subsequent decisions regarding the MPA.

### 4.2 Establish the process

The process of creating an MPA may be covered by an umbrella plan applicable to all of the nation’s past and future MPAs. Or, each MPA may go through an individualised set of steps. Either way, the full process should be laid out at the beginning of the project.

Important points to consider in establishing the process are:

- What formal mechanism will initiate the process of establishment?
- How will the public and different stakeholders be included in the process?
- What is the formal mechanism for implementation?
- How will continued maintenance/enforcement/monitoring occur?
- Are funding mechanisms required?

#### 4.3 Identify a potential site

In order to best site an MPA, the location, size, shape, and type of protection should all be considered. These decisions should all take into account the scientific data, but also consider stakeholder interests as well as an understanding of bias in each decision.

There are two common approaches to selecting sites:

- A mechanistic approach in which a numerical value is assigned to each site based on predetermined criteria
- A Delphi approach in which human judgment is used in every aspect of the selection process

A 1995 NOAA workshop showed that the Delphi approach can produce results that are more consistent and likely to lead to success. The assumptions made in the Delphi approach can readily be identified, analysed, and if necessary, changed. In contrast, numerical scores mask what
are essentially subjective judgements with a misleading aura of objectivity (Kelleher 1999).

4.3.1 MPA Location

The management goals and objectives will be the primary guidance for siting the MPA, but many of the following factors should be considered:

**Biogeographic criteria**
- Representation of a biogeographic type, or the presence of rare biogeographic qualities
- Unique or unusual geological features
- Oceanographic features, such as linkages created by ocean currents

**Ecological criteria**
- Locations inhabited by rare, geographically restricted, or otherwise interesting species
- Presence of nursery or juvenile areas
- Presence of feeding, breeding, or rest areas
- Degree of genetic diversity within species
- Variety of habitats
- Existence of rare or unique habitat for any species
- Ecological processes or life-support systems (high productivity, larval exportation)
- Integrity, or the degree to which the area, either alone or in association with other protected areas, encompasses a complete ecosystem

**Naturalness**
- Extent to which the area has been protected from, or has not been subject to, human-induced change
- Prior habitat damage and potential for recovery
- Vulnerability to natural and human impacts, including those from which marine reserves do not offer protection, such as pollution or climate change

**Economic importance**
- Existing or potential economic contribution due to protection (e.g. protection of an area for recreation by tourists and others, or as a refuge, nursery area, or source of economically important species)
- Location of human activities such as fishing, tourism, transportation, scientific research, and cultural resources

**Social importance**
- Existing or potential value because of heritage, historical, cultural, traditional, aesthetic, educational, or recreational qualities
- Perceptions and preferences of local communities and policy makers

**Scientific importance**
- Value for research and monitoring

**International or national significance**
- Existence of any national or international designation
- Potential for listing on a national or international system

**Practicality or feasibility**
- Degree of insulation from external destructive influences
- Social and political acceptability, degree of community support
- Accessibility for education, tourism, recreation
- Compatibility with existing uses, particularly by locals
- Ease of management or compatibility with existing management regimes
- Zones that match with other protected areas, either on land or at sea, that allow for collaborative efforts.

(Kelleher 1999, PISCO 2007)

4.3.2 MPA Size

MPAs range dramatically in size, from the .015 km² Echo Bay Marine Park in Canada to the 410,500 km² Phoenix Islands MPA set up by Kiribati.

The ideal and actual size of an MPA will relate directly to the management goals. If the feature being protected is a cultural or historical one, the MPA may be appropriately tiny. But if the intention is to protect a species, habitat, or ecological process, the reserve must necessarily be much larger.

The following considerations can help guide decisions on the appropriate size of a proposed MPA:

- To ensure self-seeding of a target species, an MPA
should be as large as the mean larval dispersal distance (Botsford et al. 2001, Shanks 2003).

* An offshore area 10-20 km across the alongshore span will protect the majority of benthic species (McLeod et al. 2009).
* Where a defined habitat such as a reef or kelp bed is incorporated into a no-take area, the whole habitat should be included (IUCN-WCPA 2008).
* Larger zones will ease enforcement by more easily clarifying if a user is within an area (IUCN-WCPA 2008).

### 4.3.3 MPA Shape

The shape of an MPA will relate to the management goals, but successes within other MPAs worldwide can suggest some guidelines:

* While boundaries that conform to natural habitat edges can better protect species that bisect habitats (Bartholomew et al. 2007), ease of compliance and enforcement make easily distinguished boundaries preferable.
* The most desirable shapes are squares or rectangles because they can be delineated by lines of latitude and longitude and are thus more easily identified by user groups (Meester et al. 2004). N/S and E/W orientation, whole number lat/long, and square corners (Bernstein et al. 2004) will make it easier for users to know if they are within the MPA and ease enforcement.
* For inshore zones, clear sight lines to major onshore landmarks or other fixed objects are an alternative to zones defined by coordinates.
* Within the range of possible rectangular shapes for MPAs, compact MPAs are preferred. For example, a 16 km² MPA can be designed as a 4 km square or a 64 x 0.25 km rectangle. The latter shape has 8 times the perimeter and is harder to implement, utilise, and enforce (Meester et al. 2004).
* Avoid boundaries delineated by depth contours, distances-to-shore, or marker buoys which are not practical for long boundaries (DFG 2007).

### 4.3.4 MPA Zoning

Depending on the management goals of an MPA, human activities within the area may be constant throughout, or usage may be regulated via a zoning mechanism. Particularly in terms of extractive uses, a core area of protection with less-stringent take limits surrounding it (buffer zones) can be beneficial, though harder to enforce than a single-zone reserve.

### 4.3.5 MPA Networks

"The benefits of individual well-managed MPAs are significant while networks of MPAs, when well-planned, can add up to more than the sum of their individual MPA parts."

(IUCN-WCPA 2008)

While an MPA can protect resources at a small scale, a series of strategically chosen MPAs can dramatically increase the benefits of protected areas. A coordinated multitude of such areas is referred to as an MPA network.

Benefits of uniting MPAs together into a cohesive network include:

**Enhanced Conservation**

* Representativeness – A network can guarantee that the protection of the diverse characteristics of the marine environment are addressed in a systematic way.
* Source-Sink for Larvae – If the sites are properly designed and located, they may function as sources and sinks for larvae of many marine organisms. Recognition of such sites could translate into direct economic benefits to fisheries.
* Insurance – Designation to a network can serve as insurance to protect an MPA. Through enhanced coordination, public awareness, and management campacity, threats can be more effectively identified and addressed.

**Social and Economic Benefits**

* Increased Tourism Revenues – Creation and announcement of a national network can be an incentive for increased tourism and visitation at both a site- and network-wide level.
Enhanced Resource Extraction Opportunities – Network-level coordination and management can help support sustainable harvests through species recovery, spillover and seeding effects, habitat protection, conservation of old-growth age structure, reference sites to examine the regional effects of fishing, and better information on access.

Maintain Coastal Community Identity – A network system can foster social stability by helping to maintain cultural heritage and economic viability.

Non-Consumptive Uses – A network can create additional system-wide non-consumptive benefits, such as aesthetic values, existence values, and spiritual values.

Recognition, Public Understanding, and Education

Increased Visibility for Marine Conservation – A network system can boost marine protection and social valuation of the ocean by elevating the profile of marine areas to that of terrestrial reserves. Including worthy, but currently little known, sites in the network can bring increased recognition to those areas.

Promotion of Cultural Heritage – Networks can increase public recognition and appreciation for the multitude of marine cultural heritage sites.

Enhanced Educational Opportunities – A network can be a tool for increased public understanding of the importance of marine resources, biodiversity, ecosystem processes, conservation efforts, and cultural resources.

Enhanced Research Opportunities – A network can provide more opportunities to understand marine ecosystems and human interactions with them under different management regimes.

Increased Political Will – Designation within a national network can increase political willingness to support and invest in MPAs, much as designation of protected area sites to systems like UNESCO and Ramsar does.

Enhanced Coordination and Strategic Direction

Recognition of the National Objectives for Marine Resource Conservation – A national network should be guided by a set of priority objectives. The process of determining these objectives is beneficial in requiring managers and the public to engage in debate and reach consensus about the priorities for marine conservation.

Improved Gap Analysis – The formation of a network may help highlight gaps in MPA coverage at a geographical or ecological level.

Improved Cooperation and Resource Use – A network can encourage cooperative efforts in planning, research and monitoring, sharing of equipment and personnel, enforcement efforts, and educational campaigns.

(adopted from MPA-FAC 2008)

Site selections of MPAs in a network scenario can differ from those under a shotgun approach due to considerations of geographic separation, combined protective efforts, and overall goals of the network. Just as an individual MPA requires a set of objectives, a network benefits from a plan of acquisition. Such a plan will chart the course of the MPA network.

Some goals and recommendations of MPA networks have included:

- Have sufficient no-take areas to insure against negative impacts on some parts of a bioregion
- Represent at least 20% of each bioregion in no-take areas
- Be geographically representative
- Represent a minimum amount of each community type and physical environment type in the overall network
- Maximize the use of environmental information to determine the configuration of no-take areas to form viable networks
- Replicate (3-5) protective areas for each habitat within each bioregion
- Represent every key marine habitat, including centres of endemism and rare habitats
- In order to create a network that maximises
larval connectivity, create MPAs 50-100 km apart

- Create an adequate and viable network, which may require replication and management of adjacent marine/terrestrial areas
- Utilise the precautionary principle
- Consult with the public and make decisions based on all considerations
- Demonstrate adaptive management with regular monitoring, evaluation, and reviewing of the progress of the network towards the goals
- Address natural heritage, cultural heritage, and sustainable production


Once the goals for the network are established, selection of appropriate MPAs, and the order in which they should be incorporated, can be eased by identifying important criteria. These criteria may not be purely ecological, as social and political aspects may also need to be considered. The use of a GIS incorporating these different aspects as layers may be beneficial (Lombard et al. 2007).

Potential selection criteria could include:
- Prioritisation (internationally recognized sites, habitat for endangered species, species diversity, use as a nursery/feeding/breeding/resting area)
- Representativeness (geographical, ecological, cultural, historical)
- Comprehensiveness (contribution to the overall network goals)
- Replication
- Uniqueness
- Productivity
- Naturalness
- Connectivity
- Vulnerability
- Resilience and viability through natural cycles
- Economic/social/scientific interests
- Availability of necessary data (scientific or otherwise). Sites with readily available data that allow for timely progress might rank higher than those requiring additional research

- Feasibility/effort necessary. Objectives that can be more readily completed with available staffing and funding may be preferable to more long-term and expensive projects

(includes material from Caldwell et al. 2007, MPA-FAC 2008)
5. Involving Stakeholders in an MPA

While establishment of an MPA can be done without involving the public, experience has shown that MPA effectiveness is higher, compliance easier, and ultimate success more likely if stakeholders are involved in the process.

Bringing in stakeholders has the benefits of:

- Harnessing the knowledge of the community
- Increasing voluntary compliance
- Presenting a united front to outside interests
- Minimising problems and disputes
- Increasing conservation awareness
- Making future conservation efforts in surrounding areas or additional MPAs easier
- Being more democratic and participatory

(Kelleher 1999)

Among potential stakeholders to consider involving in the process are those in:

- Fishing
- Shipping
- Tourism
- Aquaculture
- Recreation
- Landbased activities (agriculture, development, military)
- Science

International agreements have highlighted the importance of community participation by encouraging the involvement of stakeholders throughout the development of MPAs (IUCN 2003). Participatory methods vary, but can include a variety of paths, timings of initial public involvement, and participatory levels (Box 3).

Numerous mechanisms can be utilised to reach and involve stakeholders. Web sites, focus groups, charts, surveys, and other participatory techniques have all been used to good effect. Using a combination of participatory mechanisms and providing opportunities to share ideas and views in an informal setting have all been shown to encourage public participation (Beierle and Cayford 2002, Brody et al. 2003, Cocklin et al. 1998).

The following case studies describe examples of stakeholder involvement in the development of MPAs:

- Tasmania created a background report to describe the resources and points of view of the stakeholders, then received comment from the general public. (Tasmania Resource Planning and Development Commission 2005)
- In assessing the present and future of MPAs along the California coast, The Marine Life
Development of Marine Protected Areas within the Falkland Islands

Protection Act Initiative allowed 55 coastal residents to access all available data, develop proposals that went to a science team for evaluation, and then revise the proposals. A task force of community leaders then chose among the final plans, while also incorporating the opinions of stakeholders and scientists (Caldwell et al. 2007).

- Dry Tortugas Ecological Reserve brought in the public to debate the management goals of the park. Once the criteria were agreed on, the stakeholders further participated in drawing the reserve boundaries (Kessler 2003).

- In rezoning the Great Barrier Reef Marine Park, the regulating authority launched an enormous campaign for public and stakeholder input. Australia requires a 30-day public notice period following formal MPA proposals. In the GBR proposal, a variety of mechanisms were used to solicit comment including websites, over 600 meetings in 90 locations, and temporary informal booths where questions could be answered and comments could be formally made. Solicitation of comments through verbal forums, emails, letters, and forms often included a map on which the stakeholder could note potentially good or bad MPA sites (Innes et al. 2005). These comments were used to develop a draft zoning plan which was then reopened for public comment (Great Barrier Reef Marine Park Authority 2004). In the end, the final report, comments, the director’s views on comments, and much other documentation was presented to the authoritative body for final decision and declaration of the reserve.

Notable lessons learned from these stakeholder interactions include:

- Know about the background and concerns of the community, particularly in regards to regulation (Bernstein et al. 2004).

- A neutral facilitator is recommended in stakeholder interactions, but also in helping to develop the process that will be used (Bernstein et al. 2004).

- Leaving the size/location/use of a proposed MPA open for discussion among stakeholders may encourage participation and avoid animosity (Haskell 1999).

- Aiming for consensus allows stakeholders to feel confident that their interests will be represented (Haskell 1999). However, achieving consensus can be difficult, and accepting a majority or super-majority may be preferred (Bernstein et al. 2004).
6. Implementing and Maintaining an MPA

6.1 Creating an MPA Management Plan

Through a pre-determined process of government and public involvement, a management plan for the MPA should be developed. Depending on the process agreed upon at the onset of the project, this plan may go through revisions with the public and/or stakeholders until a final plan is created.

At a minimum, the plan should set out the goals of the MPA, what activities will be allowed within the area, and how the MPA will be managed. The plan may also benefit from a requirement to be revisited, evaluated, and possibly altered. Australia, for example, revisits MPA plans every 10 years.

A model outline for an MPA management plan is offered in Appendix I.

6.2 Implementing the MPA

Once a management plan has been agreed upon, the next step is the designation of the MPA. Declaration can be accomplished through numerous mechanisms, but this should be laid out early in the process. Mechanisms for approval and declaration have included:

- public vote
- non-binding referendum
- full governmental process
  - in the United States, most MPAs must pass the legislative, then the executive branch
  - in Australia, most MPAs go through the Ministry, and then must pass both houses of Parliament
- declaration by a governor following a statutory process involving mandatory public comment
- unilateral declaration by a ruling party

Formal governance of the MPA will be dictated by new legislation. This legislation should include the basics of the management plan, including:

1. Objectives
2. Management rules and penalties applied, including:
   - any special rules and administrative measures that may be needed
   - safeguards to ensure and enhance compliance by Government, including transparency of decision-making and provision for NGOs
3. Delineation of boundaries
4. Adequate statements of authority, precedence, and procedures
5. Advisory and consultation processes
6. Criteria for decision-making
7. Relationship with other authorities and procedures for coordination and conflict resolution
8. Management plans, zoning, and regulation
9. Monitoring and review
10. Compensation

(from Kelleher 1999)

6.3 Managing and Monitoring the MPA

In order to avoid becoming a “paper park,” an MPA needs to have active management and monitoring. As laid out in the management plan, an authority of some sort should be responsible for running the park. This authority could be an existing government body or could be a group formed for such a purpose such as a Sanctuary Advisory Council that is comprised of representatives from the relevant user groups.

Research and monitoring are important for determining whether the goals of the MPA are being met. Such scientific observation should begin before or at the same time as the designation of the MPA so as to establish a baseline for future comparison (Kessler 2003). Such monitoring should be responsible for determining the
pressures affecting the MPA, the state of the MPA throughout its life, and the response of the MPA to its designation and continued enforcement.

Enforcement of the MPA should be public and ongoing. It can be eased by the size, shape, and zoning of the park. Public recognition of the park and its boundaries also eases enforcement. Such recognition is enhanced by buoys, chart markings, and simple and easy to understand regulations.

Management, monitoring, and enforcement will require funding, and the procurement of these costs should be established in the management plan. Costs will include those necessary for enforcement and monitoring to ensure MPA goals are achieved. If the MPA results in a loss of revenue due to cuts in, for example, fishing licenses, those costs should be considered as well.

Funding can come from a variety of sources. Government can finance the MPA, but alternative sources can include NGOs, revenue from users (such as tourist fees), bioprospecting, a “Friends Organisation,” donations, sponsorship, or compensation from unavoidable uses such as pollution.
Waters under the jurisdiction of the Falkland Islands encompass a variety of habitat types, contain species of international concern, and hold resources that both are and have the potential to be exploited. These waters and their ecosystems are to date also relatively pristine due to low population, isolation, and current management regimes.

The Falkland Islands are thus in a position where the establishment of marine protected areas can be viewed as a precautionary strategy. Such forward-thinking designations have the benefits of being more effective than restoration-driven designations at both an ecological and monetary level.

As the Falklands work towards new development and diversification, potential threats to marine areas in the Falklands include pollution (both acute and chronic) from shipping, land-based pollution, and overexploitation of resources. Used in conjunction with already established environmentally-driven legislation, marine protected areas could be a valuable tool in the sustainable protection of the species and habitats of the Falklands' marine environment. Other cultural, economic, and tourism-based benefits are also likely to follow such designations, and such steps would additionally bring the Falklands closer in line with international accords.

By avoiding the pitfalls and adopting the successes of others and adapting MPA designation to the political and cultural environment of the Falklands, the development of a marine protected area network is likely to be a successful and positive experience that protects, preserves, and enhances the marine environment to which the Falklands have such strong economic, cultural, and historical links.

- Determining the process to be followed early on
- Creating a series of management goals by which decisions as well as determinations of successes/failures can be made
- Using all relevant criteria to site the MPA
- Involving the stakeholders
- Committing to follow-through, including monitoring and enforcement

As the legislation for the designation of marine protected areas in the Falklands already exists, it is merely the process and the execution that require determining. Successes and failures from other MPAs have outlined a successful series of steps highlighted in this document. Throughout these experiences, the importance of the following are consistently emphasised:
Acknowledgements

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Appendix I: Sample MPA Management Plan

1. Executive summary
2. Introduction
   2.1 Purpose and scope of plan
   2.2 Legislative authority for the plan (national and international)
3. Description of the site and its features
   3.1 Regional setting: location and access
   3.2 Resources (facts pertinent to management; other data in an appendix or separate document)
      3.2.1 Physical: e.g., marine landscape features, currents, bathymetry, hydrology
      3.2.2 Biological: ecosystems (e.g., kelp forests, submarine cliffs), critical habitats
           (e.g., feeding, spawning), species (e.g., endangered, commercial, charismatic)
      3.2.3 Cultural: archaeological, historical, religious
   3.3 Existing uses (description, facilities, etc.)
      3.3.1 Recreational
      3.3.2 Commercial
      3.3.3 Research and education
      3.3.4 Traditional uses, rights, and management practices
3.4 Existing legal and management framework
3.5 Existing and potential threats and implications for management (i.e. analysis of compatible or
   incompatible uses, solutions)
3.6 Existing gaps of knowledge
4. The plan
   4.1 Goals and objectives (general and specific)
   4.2 Management tactics
      4.2.1 Advisory committees
      4.2.2 Interagency agreements (or arrangements with private organisations, institutions or
           individuals)
      4.2.3 Boundaries
      4.2.4 Zoning plan
      4.2.5 Regulations
      4.2.6 Social, cultural, and resource studies plan
      4.2.7 Resource management plan
      4.2.8 Education and public awareness
   4.3 Administration
      4.3.1 Staffing
      4.3.2 Training
      4.3.3 Facilities and equipment
      4.3.4 Budget and business plan, finance sources
   4.4 Surveillance and enforcement
   4.5 Monitoring and evaluation of plan effectiveness
   4.6 Time table for implementation
5. Appendices
6. References

(Kelleher 1999, Salm et al. 2000)
Appendix II: International Accords

17th IUCN General Assembly (San Jose, 1988)

Resolution 17.38: Protection of the coastal and marine environment

AWARE that the area of sea and seabed is more than two-and-a-half times as great as the total area of land masses of the world, that less than 1% of that marine area is currently within established protected areas and that protection of the marine environment lags far behind that of the terrestrial environment;

RECOGNIZING that the immense diversity of marine and estuarine animals, plants, and communities is a vital component of self-sustaining systems of local, regional, national and international significance and is an integral part of the natural and cultural heritage of the world;

CONCERNED that there are already areas which have become seriously degraded by the direct or indirect effects of human activities and that the rate of degradation is increasing rapidly;

RECOGNIZING that consideration must be given for the continued welfare of people who have customarily used marine areas;

BELIEVING that there are national and international responsibilities for the proper stewardship of the living and non-living resources of coastal and deeper ocean seas and the seabed to ensure their maintenance and appropriate use for the direct benefit and enjoyment of present and future generations;

BELIEVING that the development of such stewardship will require coordination and integrated management of a number of potentially competing uses at international, regional, national and local levels;

RECOGNIZING that a number of initiatives have been taken at international, regional and national levels for the establishment of marine protected areas and for managing the use of marine areas on a sustainable basis, including:
- the Regional Seas Programme of the United Nations Environment Programme (UNEP);
- the Man and the Biosphere Programme of the United Nations Educational, Scientific and Cultural Organization (UNESCO);
- the Marine Science Programme of UNESCO;
- the South Pacific Regional Environment Programme;
- initiatives of the Food and Agriculture Organization of the United Nations (FAO), the International Maritime Organization (IMO), the International Whaling Commission (IWC) and other international organizations;
- the proclamation of marine protected areas by 69 nations;

The General Assembly of IUCN, at its 17th Session in San Jose, Costa Rica, 1-10 February 1988:

1. CALLS upon national governments, international agencies and the non-governmental community to:

   a) Implement integrated management strategies to achieve the objectives of the World Conservation Strategy in the coastal and marine environment and in so doing to consider local resource needs as well as national and international conservation and development responsibilities in the protection of the marine environment;

   b) Involve local people, non-governmental organizations, related industries and other interested parties in the development of these strategies and in the implementation of various marine conservation programmes.

2. DECIDES ITSELF and further RECOMMENDS to FAO, IMO, IWC, the legal instrument bodies of the North Sea, UNEP, UNESCO, other international organizations and all nations, that:

   a) The following primary goal be adopted: “To provide for the protection, restoration, wise use, understanding and enjoyment of the marine heritage of the world in perpetuity through the creation of a global, representative system of marine protected areas and through the management in accordance with the principles of the World Conservation Strategy of human activities that use or affect the marine environment”;

   b) As an integral component of marine conservation and management, each national government should seek cooperative action between the public and all levels of government for development of a national system of marine protected areas. The term “marine protected areas” is defined as: “Any area of intertidal or subtidal terrain, together with its overlying waters and associated flora, fauna, historical and cultural features, which has been reserved by legislation to protect part or all of the enclosed environment”;

   c) Such a system should have the following objectives:
- to protect and manage substantial examples of marine and estuarine systems to ensure their long-term viability and to maintain genetic diversity;
- to protect depleted, threatened, rare or endangered species and populations and, in particular to preserve habitats considered critical for the survival of such species;
- to protect and manage areas of significance to the
life cycles of economically important species;
- to prevent outside activities from detrimentally affecting the marine protected areas;
- to provide for the continued welfare of people affected by the creation of marine protected areas
- to preserve, protect, and manage historical and cultural sites and natural aesthetic values of marine and estuarine areas, for present and future generations;
- to facilitate the interpretation of marine and estuarine systems for the purposes of conservation, education, and tourism;
- to accommodate within appropriate management regimes a broad spectrum of human activities compatible with the primary goal in marine and estuarine settings;
- to provide for research and training, and for monitoring the environmental effects of human activities, including the direct and indirect effects of development and adjacent land-use practices.

d) The development by a nation of such a system will be aided by agreement on a marine and estuarine classification system, including identified biogeographic areas; and by review of existing protected areas, to establish the level of representation of classification categories within those areas, which may require:
- determination of existing and planned levels of use of the marine and estuarine environment and the likely effects of those uses;
- delineation of potential areas consistent with the objectives listed above and determination of priorities for their establishment and management;
- development and implementation of extensive community education programmes aimed at specific groups, to stimulate the necessary community support and awareness and to achieve substantial self-regulation;
- allocation of sufficient resources for the development and implementation of management plans, for regulatory statutory review processes, interpretation, education, training, volunteer programmes, research, monitoring, surveillance and enforcement programmes.
Resolution 19.46: Marine and Coastal Area Conservation

APPRECIATING that the marine realm comprises approximately 70 percent of the Earth’s surface and harbours a major share of the planet’s biological wealth;

AWARE that the coastal zone is the home of an increasing majority of the world’s human population and that the well-being of coastal waters including the maintenance of marine biological diversity is critical to achieving globally sustainable development;

CONCERNED that the world’s oceans are subject to increasing human use and misuse which is resulting in the loss of marine biological diversity, and that growing development in coastal areas is the cause of severe impacts on the marine environment;

FURTHER CONCERNED that efforts devoted to marine conservation, including the establishment and management of marine protected areas, lag far behind those for the terrestrial environment and that present levels of resources and programmes are insufficient to address the urgency and complexity of the tasks at hand;

RECOGNIZING that the need for integrated management of coastal and marine environments has been identified as a global priority in many fora and documents including:
-the World Conservation Strategy (1980);
-Caring for the Earth (1991);
-Chapter 17 of Agenda 21 (UNCED, 1992);
-Parks for Life - the Proceedings of the IV World Congress on National Parks and Protected Areas (1992); and
-Global Marine Biological Diversity: A Strategy for Building Conservation into Decision Making (1993);

RECOGNIZING that the UN Convention on the Law of the Sea (UNCLOS) will come into effect in 1994 and may provide appropriate mechanisms for the management of marine resources, including protected areas, beyond the limits of national jurisdiction;

FURTHER RECOGNIZING that to achieve these aims will require the development of considerable management capacity by nations and institutions; substantial changes in practices for management of catchments and coastal lands; development of conservation tools for coastal areas to safeguard sensitive and fragile habitats; and that marine protected areas will need to operate within these developing management systems;

AWARE of the support of governments and the international community for programmes which promote marine conservation involving marine protected areas and other initiatives, including:
-the Regional Seas Programme of the United Nations Environment Programme (UNEP);
-the Man and Biosphere Programme of the United Nations Educational, Scientific and Cultural Organization (UNESCO);
-the Intergovernmental Oceanographic Commission of UNESCO;
-the Marine Science Programme of UNESCO;
-the South Pacific Regional Environment Programme;
-initiatives of the Food and Agriculture Organization of the United Nations (FAO), the International Maritime Organization (IMO), the International Whaling Commission (IWC), The World Bank, the United Nations Development Programme (UNDP) and other international organizations;

ALSO AWARE that IUCN’s Commission on National Parks and Protected Areas (CNPPA) is promoting the establishment of a global representative system of marine protected areas to implement Resolution 17.38 of the 17th Session of the General Assembly;

NOTING that, in accordance with the revised System of Classification of Terrestrial and Marine Protected Areas adopted by CNPPA following the IVth World Congress on National Parks and Protected Areas in 1992, all marine areas of the world are eligible for consideration for protected area status and that in a global representative system some of these areas should be established with a wilderness classification;

NOTING the support of the Vth World Wilderness Congress, meeting in Tromsø, Norway, in September 1993, for coastal nations to establish representative systems of marine protected areas, including areas with wilderness designation, and the recommendation that appropriate international agencies establish protected areas in international marine waters including areas designated as wilderness;


NOTING that Global Marine Biological Diversity compiles recommendations for marine conservation from Agenda 21, Caring for the Earth, the IVth World Congress on National Parks and Protected Areas and other fora and sources;

The General Assembly of IUCN – The World Conservation Union, at its 19th Session in Buenos Aires, Argentina, 17–26 January 1994:

1. CALLS UPON governments, international agencies and the non-governmental community:
a) to give priority to the establishment and support of conservation programmes to achieve integrated management of coastal lands and waters, shallow sea and marine environments, addressing the long-term sustainable requirements of nations, regions and the global community;
b) to involve all levels and relevant agencies of government, local communities, non-governmental organizations, related industries and other interested parties in the development of
strategies and the implementation of programmes;
c) to encourage coastal nations, where indigenous and traditional use of the sea is to be affected, to include indigenous and local people as partners in the discussions and in any substantial steps involving planning, development, management and maintenance of these areas;
d) to provide resources to build and support in each coastal nation, and in regional communities of nations sharing common waters, the capacity to develop and implement integrated sustainable management of coastal, shallow sea and marine environments and resources;
e) to provide incentives and resources to develop effective global networks of peer support to enhance management capacity and training to maximize the sharing between nations and regions of the global community of experience, research and technical information on integrated management of coastal, shallow sea and marine environments and resources to achieve sustainable development;
f) to define and designate responsibilities and mechanisms for marine conservation and for resolving resource use conflicts;
g) to encourage coastal nations to establish under national legislation representative systems of marine protected areas, including areas with wilderness designation;
h) to encourage, under appropriate international mechanisms, the establishment of protected areas, including areas designated as wilderness, in areas beyond the limits of national jurisdiction;

2. REQUESTS the Director General as soon as practicable and within available resources:
a) to implement the recommendations of the review of the IUCN Marine and Coastal Areas Programme including promotion of marine protected areas beyond the scope of national jurisdictions;
b) to bring to the attention of all governments, the urgent need for rapid development and application of policies and tools specifically for the conservation of their marine areas;
c) to implement a programme of global evaluation of policies and tools specifically for the conservation of the coastal areas of the world;
d) to convene a high profile workshop on the theme of marine and coastal conservation, which covers all marine aspects of IUCN’s programmes, at the next General Assembly of IUCN;

3. DECIDES itself to reiterate and recommends to FAO, IMO, The World Bank, the Global Environment Facility, UNEP, UNDP, UNCLOS and other concerned organizations, the primary goal of IUCN General Assembly Recommendation 17.38:
“...To provide for the protection, restoration, wise use, understanding and enjoyment of the marine heritage of the world in perpetuity through the creation of a global, representative system of marine protected areas and through the management in accordance with the principles of the World Conservation Strategy of human activities that use or affect the marine environment...”;

4. DECIDES itself and further recommends to the above organizations that the following goal be adopted in respect to integration of the management of coastal, shallow sea and marine resources:
“To contribute to the achievement of sustainable development of coastal and marine areas and resources through the establishment and operation of effective mechanisms to manage in an integrated and anticipatory way all human activities which have impacts on coastal and marine environments and associated people”;

5. RECOMMENDS that IUCN join the co-sponsors of Global Marine Biological Diversity, in establishing and participating in the International Marine Conservation Network as a means of promoting attention and cooperation among government, non-governmental and private organizations for marine conservation.
Recommendation 22: Building a Global System of Marine and Coastal Protected Area Networks

The 17th IUCN General Assembly (San Jose, Costa Rica; 1988) adopted Recommendation 17.38 (Protection of the coastal and marine environment), which called on international bodies and all nations to establish a global representative system of marine protected areas (MPAs) to provide for the protection, restoration, wise use, understanding and enjoyment of the marine heritage of the world in perpetuity. Also, delegates attending the IVth World Parks Congress (Caracas, 1992) adopted Recommendation 11 (Marine Protected Areas), which called for the establishment of a global network of marine protected areas.

And, more recently, the 8th meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) of the Convention on Biological Diversity noted in March 2003 that “... the data available indicate that regionally and globally, marine and coastal protected area networks are severely deficient, and probably protect a very small proportion of marine and coastal environments.” The SBSTTA also recommended that the goal for marine and coastal protected areas work under the Convention should be the “establishment and maintenance of marine and coastal protected areas that are effectively managed, ecologically based, and contribute to a permanent representative global network of marine and coastal protected areas, building upon national networks.”

The Ramsar Convention on Wetlands has made a significant contribution to the establishment of marine and coastal protected areas. The Convention also has site criteria in relation to the fish habitat importance of wetland ecosystems, has developed guidelines for managing wetlands within integrated coastal zone management frameworks and has specific guidelines for identifying Wetlands of International Importance.

There are concerns that more than 60 percent of the human population lives in coastal zones and they will increasingly put marine and coastal biodiversity under pressure and undermine the foundation for coastal economies. Thus, continuing loss of marine, estuarine, and other aquatic habitats is one of the greatest long-term threats to biodiversity, dependent species and the viability of commercial and recreational fisheries.

Urgent action is required to restore fisheries that have collapsed, avoid over-fishing of stocks already fully utilised, minimise the ecological effects of by-catch to species and ecosystems and limit habitat destruction. Marine protected areas (MPAs) have been shown to be an effective means to support biodiversity and species conservation as well as supporting ecologically and economically sustainable fisheries when managed in the context of human societies that are dependent on marine ecosystems.

MPAs covering the full range of IUCN categories are widely recognised by coastal nations as flexible and valuable tools for science based, integrated area management (including highly protected marine reserves and areas managed for multiple uses) supporting ecosystem-based management, because they can help conserve critical habitat, foster the recovery of overexploited and endangered species, maintain marine communities, and promote sustainable use.

There are further concerns that climate related global threats cannot be addressed by conventional management measures alone, and will require new and innovative approaches.

The 2002 World Summit on Sustainable Development (WSSD) emphasised the need to maintain the productivity and biodiversity of important marine and coastal areas, and set target dates of:
1. 2012 for the establishment of representative MPA networks based on scientific information and consistent with international law;
2. 2015 for the restoration of depleted fish stocks; and
3. 2010 for the application of the ecosystem approach to ocean and fisheries management.

Also the FAO Code of Conduct for Responsible Fisheries emphasises the integration of MPAs into the sustainable use of marine natural resources.

Therefore, PARTICIPANTS in the Marine Cross-Cutting Theme at the Vth World Parks Congress, in Durban, South Africa (8-17 September 2003):

CALL on the international community as a whole to:

1. Establish by 2012 a global system of effectively managed, representative networks of marine and coastal protected areas, consistent with international law and based on scientific information, that:
   a. Greatly increases the marine and coastal area managed in marine protected areas by 2012; these networks should be extensive and include strictly protected areas that amount to at least 20-30% of each habitat, and contribute to a global target for healthy and productive oceans;
   b. Facilitates and incorporates understanding, support and collaboration at local, national and international levels to design and develop such networks through sharing of knowledge, skills and experience in conservation and the achievement of sustainable socio-economic benefits;
   c. Assists in the implementation of appropriate global and regional agreements, conventions and frameworks;
   d. Is designed to be resilient, particularly in the face of large scale threats linked to global change; this will require building flexibility and adaptation into their design and management;
   e. Incorporates both new and strengthened existing MPA sites with varying purposes and management approaches;
   f. Integrates MPAs with other ocean, coastal, and land governance policies, as recommended by the Jakarta Mandate, to achieve sustainable fisheries, biodiversity conservation, species protection, and integrated watershed,
coastal, ocean and high seas and polar management objectives;
g. Contributes to in situ conservation of threatened and
d endangered species and their habitat;
h. Includes strictly protected marine reserves that contribute
to protection of diverse marine habitats and ecosystem
structure, biodiversity conservation, species protection,
recovery of endangered species, public education, and
sustainable fisheries management;
i. In the sustainable management of fisheries, is an integral
component that can contribute significantly to the
management of species with special management needs. This
may include protection for critical life history stages, such as
through protection of spawning grounds;
j. Can provide a framework that can contribute significantly
to the management of species, with special management
needs including highly migratory species, ecosystems and
habitats;
k. Engages stakeholders including local and traditional
communities through participatory processes in the design,
planning and management, and sharing of benefits of marine
protected areas;
l. Protects and strengthens relatively intact marine and coastal
areas for species and habitats that are not yet significantly
degraded by direct or indirect human impacts and represent
important biodiversity values;
m. Implements best available, science-based measures
reflecting international policy and practice and are consistent
with international law as reflected in the United Nations
Convention on the Law of the Sea and other instruments;
n. Uses management effectiveness assessments to promote
adaptive management, taking into account the approaches,
issues and concepts outlined in WPC Recommendation 5.18;
o. Builds the best available science on connectivity into
marine and coastal protected area network design, in order to
create networks that are ecologically coherent;
p. Provides appropriate incentives and support for the
implementation of diverse portfolios of financing
mechanisms and management approaches which, together
with supportive local and national policies, provide for the
long-term sustainability of MPA networks;
q. Is embedded within wider integrated coastal and marine
management frameworks that include collaboration among
resource management bodies and ensure linkages among
marine coastal and terrestrial protected areas to address
potential threats beyond area boundaries; and
r. Sets performance objectives for global, national and
regional networks of MPAs to meet fisheries, biodiversity,
habitat stabilization and societal needs.

2. Implement an ecosystem-based approach to sustainable
fisheries management and marine biodiversity conservation:
a. Through marine protected areas integrated with other
marine and coastal governance and management actions, as
appropriate, through the application of best available science
and consistent with international law to:
i. Provide sustainable socio-economic returns to local and
traditional communities and industry;
ii. Protect important habitats and areas sensitive to
particular gear impacts and minimise negative impacts on
the food web;
iii. Restore depleted fisheries; and
iv. Build a biogeographic based framework for
maintaining ecosystem structure and function through
MPA networks;
b. Through multilateral consideration of appropriate criteria,
frameworks and incentives for integrated networks of local,
national, and regional marine protected areas, including
transboundary areas, and for effective compliance and
enforcement to effectively address challenges within and
beyond national boundaries, consistent with international
law;
c. Through recognition of MPA networks as an integral
component in sustainable fisheries management which
should complement and not be used as a substitute for normal
fisheries management practice;
d. Through fostering an on-going dialogue with all fisheries
sectors to develop mutual understanding and the transfer of
knowledge in both directions and to ensure the process and
outcomes occur in a transparent and trusting environment.
This may be enhanced by:
i. The ability of Regional Fisheries Management
Organizations to become integral stakeholders in MPAs; and
ii. Elaborating MPA theory and practice to facilitate
dialogue with fishers and fishery management;
e. Through the designation of marine protected areas,
including those within Large Marine Ecosystems, as one of
the strategies applied to the recovery of depleted fish stocks
reduction of coastal pollution and conservation and
restoration of biodiversity;
f. Consistent with the precautionary approach, and which
ensures that the burden of proof that the environment is not
harmed resides with those who commercially benefit from
MPA resources; and
g. Which sets performance objectives for global, national and
regional networks of MPAs to meet the fisheries,
biodiversity, ecosystem stabilization and societal needs.
Decision VII/5: Marine and coastal biological diversity

The Conference of the Parties

1. Takes note that progress has been made in the implementation of the programme of work at the national, regional and global levels and that facilitation of implementation has been undertaken by the Secretariat;

2. Recognizes that the programme of work on marine and coastal biological diversity must incorporate a diverse range of tools and approaches and address the three objectives of the Convention, and notes the need to ensure integration between the programmes of work on protected areas and on marine and coastal biological diversity, and in particular the programme element on marine and coastal protected areas, to ensure effective coordination in their implementation;

3. Agrees that the programme of work on marine and coastal biological diversity should be applied and interpreted consistently with national law, and where applicable, international law, including the United Nations Convention on the Law of the Sea;

4. Decides that the programme elements of the programme of work still correspond to global priorities, which are not fully implemented, and therefore extends the time period of the programme of work by an additional six years, taking into account the multi-year programme of work of the Conference of the Parties up to 2010;

5. Notes that the programme of work has been refined to take into account recent developments and new priorities and endorses for the guidance of Parties and any other relevant organizations or bodies the elaborated programme of work as presented in annex I to the present decision and its appendices 1-5, noting that Parties will implement those suggested activities that are consistent with their national priorities;

6. Welcomes the entry into force of the Agreement on the Conservation of Albatrosses and Petrels, and notes the adoption of the International Convention for the Control and Management of Ships' Ballast Water and Sediments under the International Maritime Organization and encourages Parties to the Convention on Biological Diversity and other Governments to consider ratifying these treaties;

7. Agrees that further technical advice is required to support the implementation of the programme elements related to sustainable use and to support the work of developing countries in achieving sustainable use of their marine and coastal areas, including in relation to tourism and fishing, and requests the Executive Secretary to work with the Food and Agriculture Organization of the United Nations and other relevant organizations to develop that advice and support;

8. Taking into account the report of the Ad Hoc Technical Expert Group on biodiversity and Climate Change and the recommendations of the Subsidiary Body on Scientific, Technical and Technological Advice at its ninth meeting and decision VII/15 of the Conference of the Parties at its seventh meeting on biodiversity and climate change, agrees that the programme of work on marine and coastal biodiversity should address issues related to biodiversity and climate change, and further encourages Parties to make use of it as relevant source of useful information and take measures to manage coastal and marine ecosystems, including mangroves, seagrass beds and coral reefs so as to maintain their resilience to extreme climatic events;

9. Recognizing the particular significance of this programme of work to small island developing States, invites funding institutions, and development agencies to provide financial support for the implementation of the elaborated programme of work on marine and coastal biodiversity, and its annexes and appendices;

Marine and coastal protected areas

10. Welcomes the report of the Ad Hoc Technical Expert Group on Marine and Coastal Protected Areas (UNEP/CBD/SBSTTA/8/INF/7), expresses its gratitude to the Governments of New Zealand and the United States of America, and the World Conservation Union (IUCN), for their financial, organizational and technical support for this work, and expresses its gratitude to the Chair and members of the Ad Hoc Technical Expert Group for their work;

11. Notes that marine and coastal biodiversity is under rapidly increasing and locally acute human pressure, such that globally, regionally and nationally marine and coastal biodiversity is declining or being lost. One of the reasons for this level of threat is the very low level of development of marine and coastal protected areas;

12. Notes that marine and coastal protected areas have been proven to contribute to:
(a) Protecting biodiversity;
(b) Sustainable use of components of biodiversity; and
(c) Managing conflict, enhancing economic well-being and improving the quality of life;

13. Notes that there are increasing numbers of marine and coastal protected areas, but in many cases they have not been effective because of problems related to their management (including as a result of lack of resources), size and habitat coverage;

14. Notes also that according to available data, marine and coastal ecosystems are severely underrepresented as protected areas, and these protected areas probably protect a very small proportion of marine and coastal environments globally and consequently make a relatively small contribution to sustainable management of marine and coastal biodiversity;
15. Takes note with appreciation of the joint note of the International Coral Reef Initiative and the Convention on Biological Diversity (UNEP/CBD/COP/7/INF/26) prepared pursuant to decision VI/3 of the Conference of the Parties on the International Coral Reef Initiative resolutions on small island developing States (annex I to the note) and on cold water coral reefs (see annex II to the note);

**Goals of marine and coastal protected areas**

16. Agrees that marine and coastal protected areas are one of the essential tools and approaches in the conservation and sustainable use of marine and coastal biodiversity;

17. Notes that there is an international body of evidence demonstrating that those marine and coastal protected areas where extractive uses are excluded have benefits for fisheries in surrounding areas, and in many cases for communities, and for sustainable tourism and other economic activities within and outside the marine and coastal protected area;

18. Agrees that the goal for work under the Convention relating to marine and coastal protected areas should be: The establishment and maintenance of marine and coastal protected areas that are effectively managed, ecologically based and contribute to a global network of marine and coastal protected areas, building upon national and regional systems, including a range of levels of protection, where human activities are managed, particularly through national legislation, regional programmes and policies, traditional and cultural practices and international agreements, to maintain the structure and functioning of the full range of marine and coastal ecosystems, in order to provide benefits to both present and future generations.

19. Notes that the Plan of Implementation of the World Summit on Sustainable Development promotes the conservation and management of the oceans, and agreed to develop and facilitate the use of diverse approaches and tools, including the ecosystem approach, the elimination of destructive fishing practices, the establishment of marine protected areas consistent with international law and based on scientific information, including representative networks, by 2012 and time/area closures for the protection of nursery grounds and periods, proper coastal land use, and watershed planning, and the integration of marine and coastal areas management into key sectors; and agrees to adopt this approach for the work of the Convention on marine and coastal protected areas, and to develop a strategy to meet this goal, including indicators of progress;

**National framework of marine and coastal protected areas**

20. Aware that marine and coastal protected areas should be part of a wider marine and coastal management framework, urges Parties and other Governments, as appropriate, to make efforts to adopt, as a matter of high priority (while taking into account the resource limitations of small island developing States), such a framework, taking into account appendix 3 to annex I to the present decision;

21. Agrees that an effective marine and coastal biodiversity management framework as set out in appendix 3 to annex I to the present decision would comprise sustainable management practices and actions to protect biodiversity over the wider marine and coastal environment, including integrated networks of marine and coastal protected areas consisting of: (a) Marine and coastal protected areas, where threats are managed for the purpose of biodiversity conservation and/or sustainable use and where extractive uses may be allowed; and (b) Representative marine and coastal protected areas where extractive uses are excluded, and other significant human pressures are removed or minimized, to enable the integrity, structure and functioning of ecosystems to be maintained or recovered;

22. Agrees that the balance between categories (a) and (b) marine and coastal protected areas, in paragraph 21 above would be selected by the country concerned;

23. Notes that the Ad Hoc Technical Expert Group on marine and coastal protected areas advised that certain objectives of marine and coastal protected areas, such as scientific reference areas can only be accomplished through the establishment of category (b) marine and coastal protected areas, and encourages Parties to take this advice into account when determining an appropriate balance between categories (a) and (b);

24. Notes that there are some benefits of the framework that can be provided with any degree of certainty only by including highly protected areas, and that to achieve the full benefits a network needs to include representative and distinctive areas and contain a sufficient area of the coastal and marine environment to be effective and ecologically viable;

25. Agrees that key factors for achieving effective management of marine and coastal protected areas include effective governance, clear national legal or customary frameworks to prevent damaging activities, effective compliance and enforcement, ability to control external activities that affect the marine and coastal protected area, strategic planning, capacity-building and having a sustainable financing for management;

26. Urges Parties to urgently address, through appropriate integrated marine and coastal management approaches, all threats, including those arising from the land (e.g. water quality, sedimentation) and shipping/transport, in order to maximize the effectiveness of marine and coastal protected areas and networks in achieving their marine and coastal biodiversity objectives taking into account possible effects of climate change such as rising sea levels;

27. Agrees that the full participation of indigenous and local communities and relevant stakeholders is important for achieving the global goal, and for the establishment and maintenance of individual marine and coastal protected areas and national and regional networks in line with decision VII/28 on protected areas;
28. Notes the technical advice provided by the Ad Hoc Technical Expert Group, contained in annex II to the present decision and in its report, relating to marine and coastal protected areas within national jurisdiction, and urges Parties and Governments to utilize that advice in their work to establish marine and coastal protected areas networks;

Marine protected areas in areas beyond national jurisdiction

29. Notes that there are increasing risks to biodiversity in marine areas beyond national jurisdiction and that marine and coastal protected areas are extremely deficient in purpose, numbers and coverage in these areas;

30. Agrees that there is an urgent need for international cooperation and action to improve conservation and sustainable use of biodiversity in marine areas beyond the limits of national jurisdiction, including the establishment of further marine protected areas consistent with international law, and based on scientific information, including areas such as seamounts, hydrothermal vents, cold-water corals and other vulnerable ecosystems;

31. Recognizes that the law of the sea provides a legal framework for regulating activities in marine areas beyond national jurisdiction and requests the Executive Secretary to urgently collaborate with the Secretary-General of the United Nations and relevant international and regional bodies in accordance with their mandates and their rules of procedure on the report called for in General Assembly resolution 58/240, paragraph 52, and to support any work of the General Assembly in identifying appropriate mechanisms for the future establishment and effective management of marine protected areas beyond national jurisdiction;

Assessment, monitoring and research priorities

32. Notes that the research priorities and pilot projects set out in appendix 4 to annex I to the present decision would provide important assistance to national and, where appropriate, regional efforts to establish and maintain marine and coastal protected areas and national and regional networks, and that research programmes on the conservation of marine and coastal biodiversity resources are needed while setting up national biodiversity research priorities;

33. Agrees to incorporate the research priorities and pilot projects contained in appendix 4 to annex I to the present decision into the programme of work on marine and coastal biodiversity, and requests the Executive Secretary to identify partners to adopt the research priorities and undertake these projects as a matter of urgency;

34. Notes that it is necessary to develop research programmes on the conservation of marine biological diversity resources beyond marine and coastal protected areas, with a view to establishing protected-area networks;

International support for the creation of networks of marine and coastal protected areas

35. Urges Parties, other Governments and relevant organizations to provide active financial, technical and other support for the establishment of a global system of marine and coastal protected area networks and the implementation within it of relevant provisions contained in this decision, including identification and removal of barriers to the creation of marine and coastal protected areas, and removal of perverse incentives for unsustainable activities in the marine and coastal environment, pursuant to decision VI/15, on incentive measures, within the framework of relevant marine-related international law;

36. Decides to examine the need for support through the financial mechanism to developing country Parties, in particular the least developed and small island developing States among them, for country-driven activities aimed at enhancing capabilities for activities relating to the establishment and maintenance of marine and coastal protected areas and networks of marine and coastal protected areas and in particular to assist Parties to develop systems to make their marine and coastal protected area networks self-sustaining in the medium to long term;

37. Notes that further technical advice related to network design and in particular ecological coherence of networks may be needed to assist Parties in implementation work, and requests the Executive Secretary, in consultation with the Bureau of Subsidiary Body on Scientific, Technical and Technological Advice, to identify appropriate mechanisms for developing this advice;

Monitoring progress toward the global goal

38. Invites the World Conservation Monitoring Centre of the United Nations Environment Programme, in collaboration with relevant organizations and authorities, to provide and maintain up-to-date information on marine and coastal protected areas, in line with the proposed categories for inventory and contextual information set out in annex III below, to provide a basis for the assessment work under the Convention;

39. Requests the Executive Secretary to provide an assessment of progress toward the global goal, as part of reporting on the programme of work on marine and coastal biological diversity;

Mariculture

40. Welcomes the summary report of the Ad Hoc Technical Expert Group on Mariculture (UNEP/ CBD/ SBSTTA/ 8/ 9/ Add.2) and the full report of the Group as presented as an information document for the eighth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (UNEP/CBD/SBSTTA/8/INF/6);

41. Expresses its appreciation to the Food and Agriculture Organization of the United Nations (FAO) for the technical support and meeting facilities provided for the meeting of the Ad Hoc Technical Expert Group on Mariculture;

42. Takes note of the negative biodiversity effects of mariculture, as described in section II of the summary report of the Ad Hoc Technical Expert Group on Mariculture, and of
the methods and techniques available for their mitigation, as described in section III of that summary report;

43. Notes also that, in section IV of the summary report, the Ad Hoc Technical Expert Group identified some positive effects for biodiversity of some forms of mariculture with native species;

44. Urges Parties and other Governments to adopt the use of relevant methods and techniques for avoiding the adverse effects of mariculture on marine and coastal biological diversity, and incorporate them into their national biodiversity strategies and action plans;

45. Recognizes the complexity of mariculture activities, the highly variable circumstances of different geographical areas, mariculture practices and cultured species, as well as social, cultural and economic conditions, which will influence mitigation options, and, accordingly, taking into account the special needs of and the difficulties faced by stakeholders in developing countries, recommends that Parties and other Governments adopt the use of the following specific methods, techniques or practices for avoiding the adverse biodiversity related effects of mariculture:

(a) The application of environmental impact assessments, or similar assessment and monitoring procedures, for mariculture developments, with due consideration paid to the scale and nature of the operation, as well as carrying capacities of the environment, taking into account the guidelines on the integration of biodiversity considerations in environmental impact assessment legislation and/or processes and in strategic impact assessment, endorsed by the Conference of the Parties in its decision VI/7 A, as well as the recommendations endorsed in decision VI/10, annex II, on the conduct of cultural, environmental and social impact assessments regarding developments proposed to take place on, or which are likely to impact on, sacred sites and on lands and waters traditionally occupied or used by indigenous and local communities. There is a need to address the likely immediate, intermediate and long-term impacts on all levels of biodiversity;
(b) Development of effective site-selection methods, in the framework of integrated marine and coastal area management, taking into account the special needs and difficulties encountered by stakeholders in developing countries;
(c) Development of effective methods for effluent and waste control;
(d) Development of appropriate genetic resource management plans at the hatchery level and in the breeding areas, including cryopreservation techniques, aimed at biodiversity conservation;
(e) Development of controlled low-cost hatchery and genetically sound reproduction methods, made available for widespread use, in order to avoid seed collection from nature, where appropriate. In cases where seed collection from nature cannot be avoided, environmentally sound practices for spat collecting operations should be employed;
(f) Use of selective fishing gear in order to avoid or minimize by-catch in cases where seed are collected from nature;
(g) Use of native species and subspecies in mariculture;
(h) Implementation of effective measures to prevent the inadvertent release of mariculture species and fertile polyploids, including, in the framework of the Cartagena Protocol on Biosafety, living modified organisms (LMOs);
(i) Use of proper methods of breeding and proper places of releasing in order to protect genetic diversity;
(j) Minimizing the use of antibiotics through better husbandry techniques;
(k) Ensuring that fish stocks used for fish meal and fish oil are managed in such a way as to be sustainable and to maintain the trophic web;
(l) Use of selective methods in industrial fisheries to avoid or minimize by-catch;
(m) Considering traditional knowledge, where applicable as a source to develop sustainable mariculture techniques;

46. Urges Parties and other Governments to adopt relevant best management practices and legal and institutional arrangements for sustainable mariculture, taking into account the special needs and difficulties encountered by stakeholders in developing countries, in particular through implementing Article 9 of Code of Conduct on Responsible Fisheries, as well as other provisions in the Code dealing with aquaculture, recognizing that it provides necessary guidance to develop legislative and policy frameworks at the national, regional and international levels;

47. Requests the Executive Secretary to undertake a comprehensive review of relevant documents on best practices relevant to mariculture, and to disseminate the results, as well as relevant case studies, through the clearing-house mechanism prior to the tenth meeting of the Subsidiary Body on Scientific, Technical and technological Advice;

48. Agrees to incorporate the research and monitoring priorities identified by the Ad Hoc Technical Expert Group on Mariculture as outlined in appendix 5 to annex I to the present decision into the programme of work on marine and coastal biological diversity;

49. Recommends that the Executive Secretary, in collaboration with the Food and Agriculture Organization of the United Nations and other relevant organizations, explore ways and means for implementing these research and monitoring priorities, including an evaluation of means through which mariculture can be used to restore or maintain biodiversity;

50. Recommends that the Executive Secretary, in collaboration with the Food and Agriculture Organization of the United Nations and other relevant organizations, harmonize the use of terms in regard to mariculture by further developing and adopting the glossary of the Food and Agriculture Organization of the United Nations;

51. Expresses its support for regional and international collaboration to address transboundary impacts of mariculture on biodiversity, such as spread of disease and
invasive alien species;

52. Decides to promote technical exchange and training programmes, and transfer of tools and technology;

53. Decides to examine the need for support through the financial mechanism to developing country Parties for country-driven activities aimed at enhancing capabilities to mitigate the adverse effects of mariculture on biological diversity;

54. Requests the Executive Secretary, in consultation with Parties and other Governments and the International Seabed Authority, and in collaboration with international organizations, such as the United Nations Division for Ocean Affairs and the Law of the Sea, the United Nations Environment Programme, and the InterGovernmental Oceanographic Commission of the United Nations Educational, Cultural and Scientific Organization, if appropriate, to compile information on the methods for the identification, assessment and monitoring of genetic resources of the seabed and ocean floor and subsoil thereof, in areas beyond the limits of national jurisdiction; compile and synthesize information on their status and trends including identification of threats to such genetic resources and the technical options for their protection; and report on the progress made to the Subsidiary Body on Scientific, Technical and Technological Advice;

55. Welcomes United Nations General Assembly resolution 58/240 of December 2003 and invites the Parties to raise their concerns regarding the issue of conservation and sustainable use of genetic resources of the deep seabed beyond limits of national jurisdiction at the next meeting of the General Assembly and further invites the General Assembly to further coordinate work relating to conservation and sustainable use of genetic resources of the deep seabed beyond the limits of national jurisdiction;

56. Invites Parties and other States to identify activities and processes under their jurisdiction or control which may have significant adverse impact on deep seabed ecosystems and species beyond the limits of national jurisdiction, in order to address Article 3 of the Convention;

Conservation and sustainable use of biological diversity in marine areas beyond the limits of national jurisdiction

57. Recalling paragraph 32 (a) and (c) of the Plan of Implementation from the World Summit on Sustainable Development, that calls on the international community to "maintain the productivity and biodiversity of important and vulnerable marine and coastal areas, including in areas within and beyond national jurisdiction";

58. Notes that United Nations General Assembly in paragraph

51 of its resolution 58/240 has reiterated "its call for urgent consideration of ways to integrate and improve, on a scientific basis, the management of risks to the marine biodiversity of seamounts, cold water coral reefs and certain other underwater features";

59. Recalls paragraph 52 of General Assembly resolution 58/240, in which the Assembly "invites the relevant global and regional bodies, in accordance with their mandate, to investigate urgently how to better address, on a scientific basis, including the application of precaution, the threats and risks to vulnerable and threatened marine ecosystems and biodiversity beyond national jurisdiction; how existing treaties and other relevant instruments can be used in this process consistent with international law, in particular with the Convention, and with the principles of an integrated ecosystem-based approach to management, including the identification of marine ecosystem types that warrant priority attention and to explore a range of potential approaches and tools for the protection and management";

60. Concerned about the serious threats to the biological diversity, stresses the need for rapid action to address these threats on the basis of the precautionary approach and the ecosystem approach, in marine areas beyond the limits of national jurisdiction, in particular areas with seamounts, hydrothermal vents, and cold-water corals, other vulnerable ecosystems and certain other underwater features, resulting from processes and activities in such areas;

61. Calls upon the General Assembly and other relevant international and regional organizations, within their mandate, according to their rules of procedure, to urgently take the necessary short-term, medium-term and long-term measures to eliminate/avoid destructive practices, consistent with international law, on scientific basis, including the application of precaution, for example, consideration on a case by case basis, of interim prohibition of destructive practices adversely impacting the marine biological diversity associated with the areas identified in paragraph 60 above;

62. Recommends Parties to also urgently take the necessary short-term, medium-term and long-term measures to respond to the loss or reduction of marine biological diversity associated with the areas identified in paragraph 60 above.
Decision IX/20 Marine and coastal biodiversity

The Conference of the Parties,

Reiterating the United Nations General Assembly’s central role in addressing issues relating to the conservation and sustainable use of biodiversity in marine areas beyond national jurisdiction,

Recalling that General Assembly resolution 60/30 emphasized the universal and unified character of the United Nations Convention on the Law of the Sea and reaffirmed that the United Nations Convention on the Law of the Sea sets out the legal framework within which all activities in the oceans and seas must be carried out, and that its integrity needs to be maintained, as recognized also by the United Nations Conference on Environment and Development in chapter 17 of Agenda 21,

Recognizing that the principles adopted in the Rio Declaration on Environment and Development play an important role in the conservation and sustainable use of marine biodiversity,

Considering the objectives of the Convention and the principle contained in Article 3, which establishes the responsibility of States to ensure that activities within their jurisdiction or control, do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction,

Recalling the section of its decision VIII/24 on options for cooperation for the establishment of marine protected areas in marine areas beyond the limits of national jurisdiction, in particular paragraph 42, in which the Conference of the Parties recognizes that the Convention on Biological Diversity has a key role in supporting the work of the General Assembly with regard to marine protected areas beyond national jurisdiction, by focusing on the provision of scientific and, as appropriate, technical information and advice relating to marine biological diversity, the application of the ecosystem approach and the precautionary approach, and in delivering the 2010 target,

Recalling also paragraph 38 of decision VIII/24, which recognizes that application of tools beyond and within national jurisdiction need to be coherent, compatible and complementary and without prejudice to the rights and obligations of coastal States under international law,

Recalling that the Joint Statement by the Co-Chairpersons of the second 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, established by General Assembly, registered support for the scientific criteria for the identification of ecologically or biologically significant marine areas in need of protection developed in the context of the Convention on Biological Diversity,

1. Takes note of the synthesis and review of the best available scientific studies on priority areas for biodiversity conservation in marine areas beyond the limits of national jurisdiction, which was undertaken in pursuance of paragraph 44 (a) of decision VIII/24;

2. Taking into account the role of Food and Agriculture Organization of the United Nations, requests the Executive Secretary in collaboration with the Food and Agriculture Organization of the United Nations, Parties, other Governments, and relevant organizations, to compile and synthesize available scientific information on the impacts of destructive fishing practices, unsustainable fishing, and illegal, unreported, and unregulated (IUU) fishing on marine biodiversity and habitats, and make such information available for consideration, at a future meeting of the Subsidiary Body on Scientific, Technical and Technological Advice prior to the tenth meeting of the Conference of the Parties;

3. Taking into account the role of the International Maritime Organization, requests the Executive Secretary to seek the views of Parties and other Governments, and, in consultation with the International Maritime Organization, other relevant organizations, and indigenous and local communities, to compile and synthesize available scientific information on potential impacts of direct human-induced ocean fertilization on marine biodiversity and make such information available for consideration at a future meeting of the Subsidiary Body on Scientific, Technical and Technological Advice prior to the tenth meeting of the Conference of the Parties;

4. Requests the Executive Secretary, in collaboration with Parties, other Governments, and relevant organizations, to compile and synthesize available scientific information on ocean acidification and its impacts on marine biodiversity and habitats, which is identified as a potentially serious threat to cold-water corals and other marine biodiversity, and make such information available for consideration at a future meeting of the Subsidiary Body on Scientific, Technical and Technological Advice prior to the tenth meeting of the Conference of the Parties;

5. Welcomes the review of spatial databases containing information on marine areas beyond the limits of national jurisdiction and the development of an Interactive Map (IMap), which was prepared in collaboration with the United Nations Environment Programme World Conservation Monitoring Centre in pursuance of paragraph 44 (c) of decision VIII/24, and requests the Executive Secretary, in collaboration with the UNEP - WCMD, to invite the International Maritime Organization and other relevant organizations, to promote wide use of the Interactive Map (IMap), including, where appropriate, its integration into the World Database on Protected Areas, and continue, within the mandates of the Convention on Biological Diversity, to

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update relevant information, incorporating information on ecosystem functions and connectivity, threats and habitats in the water column, and further linkages with the Food and Agriculture Organization of the United Nations, and other relevant organizations, as appropriate;

6. Takes note of the report on Global Open Oceans and Deep Seabed (GOODs) Biogeographic Classification, (UNEP/CBD/COP/9/INF/44), and requests the Executive Secretary to make this report available for information at a future meeting of the Subsidiary Body on Scientific, Technical and Technological Advice prior to the tenth meeting of the Conference of the Parties;

7. Takes note of the various options, which are being applied and/or under development to prevent and mitigate the adverse impacts of human activities to selected seabed habitats, as referred to in paragraph 5 of decision VIII/21;

8. Invites Parties, other Governments and relevant organizations, including in the context 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, to cooperate in further developing scientific and technical guidance for the implementation of environmental impact assessments and strategic environmental assessments for activities and processes under their jurisdiction and control which may have significant adverse impacts on marine biodiversity beyond national jurisdiction, taking into consideration the work of Food and Agriculture Organization of the United Nations, the International Maritime Organization, and other relevant organizations, with a view to ensuring such activities are regulated in such a way that they do not compromise ecosystem integrity, and to report to the Conference of the Parties at its tenth meeting on progress made in that regard;

9. Notes the need for capacity-building for developing countries, in order to fully implement existing provisions of environmental impact assessment, as well as the challenges and difficulties in carrying out environmental impact assessment in areas beyond national jurisdiction;

10. For the purpose of paragraphs 8 and 9 of the present decision, taking into account the relevant provisions of the United Nations Convention on the Law of the Sea and the Convention on Biological Diversity, decides to convene an expert workshop, including experts from different relevant organizations, with balanced regional and sectoral representation, to discuss scientific and technical aspects relevant to environmental impact assessment in areas beyond national jurisdiction with a view to contributing to the development of such scientific and technical guidance, building on ongoing relevant sectoral, regional and national environmental impact assessment efforts;

11. Also invites Parties, other Governments and relevant organizations, including the Food and Agriculture Organization of the United Nations, the United Nations Division for Ocean Affairs and Law of the Sea, the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific, and Cultural Organization, and the International Maritime Organization, to cooperate in further developing and applying effective options for preventing and mitigating the adverse impacts of human activities to selected seabed habitats, and make available information on their experiences and casestudies on and lessons learned from developing and applying these options, and requests the Executive Secretary, in collaboration with relevant organizations, to compile and disseminate such information through the clearing-house mechanism and other means of communication;

12. Expresses its gratitude to the Government of Portugal for hosting and providing financial support for the Expert Workshop on Ecological Criteria and Biogeographic Classification Systems for Marine Areas in Need of Protection, held in the Azores, Portugal, from 2 to 4 October 2007, and to other Governments and organizations for sponsoring the participation of their representatives;

13. Welcomes the report of the Expert Workshop on Ecological Criteria and Biogeographic Classification Systems for Marine Areas in Need of Protection;

14. Adopts the scientific criteria, as contained in annex I to the present decision, for identifying ecologically or biologically significant marine areas in need of protection, and the scientific guidance, contained in annex II to the present decision, for designing representative networks of marine protected areas, as recommended by the Expert Workshop on Ecological Criteria and Biogeographic Classification Systems for Marine Areas in Need of Protection, and requests the Executive Secretary to transmit the information contained in annex I and II to the present decision to the relevant General Assembly processes;

15. Recognizes that when new scientific information, as well as experiences and results from the practical application, are made available, there may be a need to scientifically review the criteria in annex I to the present decision and scientific guidance in annex II, and decides to consider the need to establish a mechanism for such a review at a future meeting of the Subsidiary Body on Scientific, Technical and Technological Advice after the tenth meeting of the Conference of the Parties;

16. Takes note of the four initial steps to be considered in the development of representative networks of marine protected areas, in annex III to the present decision, as recommended by the Expert Workshop on Ecological Criteria and Biogeographic Classification Systems for Marine Areas in Need of Protection, and requests the Executive Secretary to transmit this information, to the relevant United Nations General Assembly processes;

17. Invites Parties, other Governments, the Food and Agriculture Organization of the United Nations, and other relevant organizations, to submit to the Executive Secretary
their views on, and experiences from, the use of the scientific criteria in annex I to the present decision, the scientific guidance in annex II, and the four initial steps in annex III, and requests the Executive Secretary to compile these views and make them available to Parties as part of the efforts to further improve the criteria, scientific guidance, and steps;

18. Urges Parties, and invites other Governments, and relevant organizations to apply, as appropriate, the scientific criteria in annex I to the present decision, the scientific guidance in annex II, and initial steps in annex III, to identify ecologically or biologically significant and/or vulnerable marine areas in need of protection, with a view to assist the relevant processes within the General Assembly and implement conservation and management measures, including the establishment of representative networks of marine protected areas in accordance with international law, including the United Nations Convention on the Law of the Sea, and recognizing that these criteria may require adaptation by Parties if they choose to apply them within their national jurisdiction noting that they will do so with regard to national policies and criteria;

19. Further decides to convene an expert workshop, including scientific and technical experts from different Parties, other Governments and relevant organizations, with balanced regional and sectoral participation and using the best available information and data at the time, in order to provide scientific and technical guidance on the use and further development of biogeographic classification systems, and guidance on the identification of areas beyond the national jurisdiction, which meet the scientific criteria in annex I to the present decision. The workshop will review and synthesize progress on the identification of areas beyond national jurisdiction which meet the scientific criteria in annex I to the present decision, and experience with the use of the biogeographic classification system, building upon a compilation of existing sectoral, regional and national efforts, and requests the Executive Secretary to transmit the results of this workshop to a future meeting of the Subsidiary Body on Scientific, Technical and Technological Advice for its consideration prior to the tenth meeting of the Conference of Parties with a view to assisting the United Nations General Assembly. This workshop shall not consider issues relating to management and only provides scientific and technical information and guidance;

20. Invites Parties, other Governments, and relevant organizations to provide relevant information concerning the objectives of the workshop referred to paragraph 19 above and on the progress towards the 2012 target to the Executive Secretary for compilation and provision to the expert workshop;

21. Acknowledges and welcomes the work undertaken by regional agreements and conventions in setting up such networks, in accordance with international law, and encourages cooperation and collaboration and capacity-building amongst existing bodies;

22. Recognizes that strong evidence has been compiled, that emphasizes the need for urgent action to protect biodiversity in selected seabed habitats and marine areas in need of protection in accordance with the precautionary approach and international law, including the United Nations Convention on the Law of the Sea;

23. Urges Parties, other Governments and relevant organizations to undertake further research to improve understanding of marine biodiversity, especially in selected seabed habitats and marine areas in need of protection, including, in particular, elaboration of inventories and baselines to be used for, inter alia, assisting in the assessment of the status and trends of marine biodiversity and habitats, paying special attention to those ecosystems and critical habitats that are relatively unknown;

24. Calls upon Parties, other Governments and relevant organizations to collaborate on capacity development in developing countries, particularly the least developed countries and small island developing States among them, as well as countries with economies in transition, for the application of the scientific criteria in annex I to the present decision and the scientific guidance in annex II, and for the mitigation of the significant adverse impacts of human activities in marine areas;

25. Calls upon Parties, other Governments and relevant organizations to collaborate with developing countries, particularly the least developed countries and small island developing States among them, as well as countries with economies in transition, in enhancing their scientific, technical and technological capacities to engage in activities aimed at conservation and sustainable use of marine biodiversity, including through specialized training, participation in research, and regional and subregional collaborative initiatives;

26. Invites Parties to promote full and effective participation of indigenous and local communities, in accordance with the national legislation and applicable international obligations, when establishing new marine protected areas; also noting the United Nations Declaration on the Rights of Indigenous Peoples;

27. Calls on Parties to integrate the traditional, scientific, technical and technological knowledge of indigenous and local communities, consistent with Article 8(j) of the Convention, and to ensure the integration of social and cultural criteria and other aspects for the identification of marine areas in need of protection as well as the establishment and management of marine protected areas.

28. Welcomes the offer by the Government of Canada to host, and the Government of Federal Republic of Germany to co-fund, the expert workshop referred to in paragraph 19 above.
**Annex II: Scientific guidance for selecting areas to establish a representative network of marine protected areas, including in open ocean waters and deep-sea habitats**

<table>
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<tr>
<th>Required network properties and components</th>
<th>Definition</th>
<th>Applicable site-specific considerations</th>
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| Ecologically and biologically significant areas | Ecologically and biologically significant areas are geographically or oceanographically discrete areas that provide important services to one or more species/populations of an ecosystem or to the ecosystem as a whole, compared to other surrounding areas or areas of similar ecological characteristics, or otherwise meet the criteria as identified in annex I to decision IX/20. | - Uniqueness or rarity  
- Special importance for life history stages of species  
- Importance for threatened, endangered, or declining species and/or habitats  
- Vulnerability, fragility, sensitivity, or slow recovery  
- Biological productivity  
- Biological diversity  
- Naturalness |
| Representativity | Representativity is captured in a network when it consists of areas representing the different biogeographical subdivisions of the global oceans and regional seas that reasonably reflect the full range of ecosystems, including the biotic and habitat diversity of those marine ecosystems. | A full range of examples across a biogeographic habitat, or community classification, relative health of species and communities; relative intactness of habitat(s); naturalness |
| Connectivity | Connectivity in the design of a network allows for linkages whereby protected sites benefit from larval and/or species exchanges, and functional linkages from other network sites. In a connected network individual sites benefit one another. | Currents; gyres; physical bottlenecks; migration routes; species dispersal; detritus; functional linkages; isolated sites, such as isolated seamount communities, may also be included. |
| Replicated ecological features | Replication of ecological features means that more than one site shall contain examples of a given feature in the given biogeographic area. The term "features" means "species, habitats and ecological processes" that naturally occur in the given biogeographic area. | Accounting for uncertainty, natural variation and the possibility of catastrophic events. Features that exhibit less natural variation or are precisely defined may require less replication than features that are inherently highly variable or are only very generally defined. |
| Adequate and viable sites | Adequate and viable sites indicate that all sites within a network should have size and protection sufficient to ensure the ecological viability and integrity of the feature(s) for which they were selected. | Adequacy and viability will depend on size, shape; buffers; persistence of features; threats; surrounding environment (context); physical constraints; scale of features/processes; spillover/compactness. |

**Annex III: Four initial steps to be considered in the development of representative networks of marine protected areas:**

1. Scientific identification of an initial set of ecologically or biologically significant areas. The criteria in annex I to decision IX/20 should be used, considering the best scientific information available, and applying the precautionary approach. This identification should focus on developing an initial set of sites already recognized for their ecological values, with the understanding that other sites could be added as more information becomes available.

2. Develop/choose a biogeographic, habitat, and/or community classification system. This system should reflect the scale of the application and address the key ecological features within the area. This step will entail a separation of at least two realms - pelagic and benthic.

3. Drawing upon steps 1 and 2 above, iteratively use qualitative and/or quantitative techniques to identify sites to include in a network. Their selection for consideration of enhanced management should reflect their recognised ecological importance or vulnerability, and address the requirements of ecological coherence through representativity, connectivity, and replication.

4. Assess the adequacy and viability of the selected sites. Consideration should be given to their size, shape, boundaries, buffering, and appropriateness of the site-management regime.