Guidelines for Protected Areas Legislation

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IUCN Environmental Policy and Law Paper No. 81

Part III, Chapter 2: Special issues for marine protected areas

This chapter provides guidance on key elements in protected areas legislation important to support the special features and needs of marine protected areas (MPAs). It builds on Chapter 1 of this Part and should be read together with those sections. This chapter should also be read with Part I on international best management practice and legal principles, and Part II on governance.

Introduction

This chapter is divided into four sections. Section 1 provides a brief historical perspective on how legislative approaches to MPAs have evolved, while section 2 highlights special features of marine environments that are important to take into account in the MPA provisions of a protected areas legal framework. Section 3 covers elements of international conventions and programmes specifically concerning MPAs, and section 4 lays out special elements and related issues for MPA legal provisions that flow from those considerations. Section 4 generally follows the order of Chapter 1 to help with cross-referencing and integration, as relevant. 1

It was considered essential for these *Guidelines for Protected Areas Legislation* to include a separate chapter on special legal issues for MPAs. Today almost every coastal country has at least one marine and coastal protected area. However, legal tools and techniques for marine biodiversity conservation are much less advanced than for terrestrial environments. In part this is because scientific understanding about the operation of marine ecosystems is in its infancy and the history of experience with MPA law and policy is relatively short. The legal framework for MPAs in many countries continues to be dispersed and fragmented, and is not well tuned to the special threats, scientific knowledge and management challenges involved. Only a few countries have protected areas legislation that is fully responsive to modern MPA needs. 2

Globally, the oceans make up about 70 per cent of our world in terms of surface area and contain 97 per cent of the earth's water. They comprise more than 90 per cent of the planet's biologically useful habitat, containing most of the life on Earth including nearly all of the major groups of animals, plants and microbes (Day, 2006). The oceans drive the planet's climate and weather, and regulate temperature. They generate much of the oxygen in the atmosphere, absorb much of the carbon dioxide, and replenish fresh water for both land and sea through the formation of clouds. They supply food and generate billions of dollars for national economies. Their ecosystem functions and services are critical for human life. Today there is growing recognition that these systems are under ever-increasing threat from activities within and outside these ecosystems. The Millennium Ecosystem Assessment, the first global assessment of the health of the planet's ecosystems, found that marine and coastal systems are among the most threatened on the planet (WRI, 2005, ch. 18, 19). 3

It is now recognized worldwide that MPAs (under a variety of names which may include marine parks, marine reserves, marine sanctuaries) are an essential tool for the conservation of marine and coastal biodiversity, sustaining the productivity of marine ecosystems and restoring economically important living marine resources, including fisheries, through protection in no-take zones. In addition, the latest scientific evidence indicates that several marine and coastal ecosystems play a significant 4

role in carbon management and carbon sequestration, helping mitigate climate change (Laffoley and Grimsditch, 2009). These ecosystems include tidal salt marshes, mangroves, seagrass meadows and kelp forests. Initial studies suggest that the carbon management potential of these key ecosystems compares favourably with and, in some respects, may exceed the potential of carbon sinks on land.

5 However, marine and coastal protected areas cover only about 1 per cent of the surface area of the earth's oceans, as opposed to the 12 per cent of the earth's land area that is under protection. Experts agree that an immediate global need is to rapidly increase effective MPA coverage and scale up ocean management (Laffoley, 2008). The Convention on Biological Diversity (CBD) Programme of Work on Protected Areas calls on Parties to:

> As a matter of urgency, […] by 2008 in the marine environment, take action to address the under-representation of marine and inland water ecosystems in existing national and regional systems of protected areas, taking into account marine ecosystems beyond areas of national jurisdiction in accordance with applicable international law, and transboundary inland water ecosystems (CBD COP 2004 VII/28, programme element 1).

6 In this chapter, the phrase 'marine protected areas' includes marine and coastal protected areas and, depending on the context, may relate to sites that are completely offshore, entirely coastal or a combination of the two. The chapter focuses on MPAs under national jurisdiction. Marine areas beyond national jurisdiction have different legal structures and processes of development and implementation, governed by international treaties and international customary law. Such areas are commonly known as the high seas, one of the ocean zones under the United Nations Convention on the Law of the Sea (UNCLOS) (1982) (see section 3.1.1, below).

1 Historical perspective

7 The use of MPAs as a management tool for fisheries resources and to protect cultural and sacred sites has existed for hundreds of years in the form of traditional and community-driven controls and practices. Gradually, legislation was developed to set up marine reserves and other designated coastal and marine protected areas for fisheries management, and in many countries this continues to be their main purpose. MPAs were established under fisheries legislation to protect fish breeding areas and other areas critical for the life cycle of commercial fisheries. Land use planning laws protected designated coastal areas for fisheries management and as buffers against natural disasters (for example, protecting environmentally sensitive coastal features such as sand dunes, mangroves, near-shore seagrass beds, estuaries and tidal inlets). Early laws were also enacted to protect cultural or historic marine sites (for example, sunken ships and archaeological ruins).

8 With the development of protected areas legislation as a distinct field of environmental law, it was assumed that all ecosystems from land to sea could be accommodated. In practice, protected areas were established mostly on land and management principles were oriented toward terrestrial sites. Formal MPAs were in most cases limited to coastal or near-shore areas and, in many jurisdictions, continued to be delegated or assigned to fisheries agencies because of their expertise in management or co-management.

9 The role of MPAs was gradually expanded to biodiversity conservation, as scientific understanding grew about the important biodiversity and ecosystem values of the oceans. Fisheries management then became an associated objective rather than the primary objective. Interest grew in establishing MPAs further seaward, including in deep waters, and on a larger scale to better reflect the ecosystem approach.

Since the mid-1980s, information in the United Nations Environment Programme (UNEP) World Conservation Monitoring Centre (WCMC) database indicates that the spatial extent of marine areas being protected globally has grown at an annual rate of 4.5 per cent (Laffoley, 2008). As of the beginning of 2009, there were close to 5,700 national MPAs in the World Database on Protected Areas (WDPA). These sites equate to an area of approximately 3 million sq km of ocean currently under some form of protection, or less than 1 per cent of the ocean surface—barely a pinpoint when compared to the scale of global oceans. These figures do not include sites designated under the Convention Concerning the Protection of the World Cultural and Natural Heritage (World Heritage Convention) (1972), or national sites that are proposed but not yet officially declared (UNEP-WCMC, 2009). 10

2 Marine features requiring special attention

Today, scientists and policy experts alike recognize that MPAs require special legal consideration to address their distinct features. In response, states are increasingly enacting legislation to take into account the unique challenges of marine ecosystem management and conservation. 11

Legislative approaches to MPAs vary. In many countries, it is most effective to include MPAs within the principal protected areas legislation, giving the subject a separate chapter or part. This facilitates treatment of the marine component as an integral part of the protected areas system, allowing the integration of land, coastal and marine provisions through cross references to the relevant sections of the principal legislation. In small island states, the protected areas system is essentially marine since even terrestrial sites have evolved and adapted in the context of pervasive marine weather, climate and ecosystem influences. 12

In countries with large expanses of marine areas needing protection, and involving complex jurisdictional issues and extensive regulatory activity, MPAs may require separate legislation (see, for example, the Australia case study accompanying these guidelines: Boer and Gruber, 2010a). Another possibility is for a country to use a mixed approach, where MPAs are authorized under the protected areas legislation but separate marine living resource legislation is used to regulate such areas (see, for example, the South Africa case study: Paterson, 2010). Some countries separate legislative coverage if the site is offshore and not attached to the tidal zone, with distinct legislation for offshore and coastal areas (see France case study: Guignier and Prieur, 2010). Countries may also enact umbrella marine legislation, under which specific MPAs are protected and governed by separate regulations (see the Gully case study: VanderZwaag and Macnab, 2010). In other countries, MPAs are authorized under a number of laws (for example, the Philippines, where the protected areas legislation, fisheries law and the local government code authorize marine protection with respect to matters under those jurisdictions; see Philippines case study: La Viña et al., 2010). 13

Another possibility is where an MPA may be sufficiently large and complex to require its own site-specific law. The first marine park created by this means was the Great Barrier Reef Marine Park in Australia, established in 1975 (see Boer and Gruber, 2010a). Some countries may have coastal conservation laws addressing pollution control and coastal development, which would also play a role in supporting integrated marine and coastal management and associated marine and coastal protected areas. 14

Regardless of the approach, MPAs should be part of the formal system of protected areas. Jurisdictional responsibilities should be clear and compatible, and legislation should be harmonized and integrated into the principal protected areas legal framework, either directly or by cross reference. 15

16 To provide context for the legislative options most appropriate for protected area systems containing existing or potential MPAs, it is important to review aspects of the marine environment that present special challenges which need to be reflected, as appropriate, in legislation.

2.1 Special characteristics

17 A number of characteristics of marine ecosystems make them inherently different from terrestrial systems. These differences, it is now recognized, require special legislative treatment if the legal framework is to be effective in supporting marine and coastal protected areas. The main distinctions are summarized below (for additional information, see Belfiore et al., 2004; Day, 2006; Kelleher, 1999; Salm et al., 2000; Sobel and Dahlgren, 2004). The legal drafter should be familiar with these special features in the context of institutional, management and enforcement mechanisms.

Table III(2)-1: Some of the world's largest MPAs

MPA	Size (sq km)	How legally established
Phoenix Islands Protected Area, Kiribati (established 2006/2008)	410,500 covers most of the EEZ	Regulation of 2008 under the Kiribati Environment Act 1999
Papahanaumokuakea Marine National Monument, Hawaii, US (established 2006)	362,000 covers large parts of EEZ	Presidential Proclamation 8031 of 2006 under the Antiquities Act 1906
Great Barrier Reef Marine Park, Australia (established 1975)	344,400	Great Barrier Reef Marine Park Act 1975
Macquarie Island Marine Reserve, Australia (established 1999)	162,000 covers large parts of EEZ	Declared by Governor General under the National Parks and Wildlife Conservation Act 1975
Marianas Trench Marine National Monument, US (established 2009)	153,620 covers large parts of EEZ	Presidential Proclamation 8335 of 2009 under the Antiquities Act 1906
Pacific Remote Islands Marine National Monument, US (established 2009)	139,889 covers large parts of EEZ	Presidential Proclamation 8336 of 2009 under the Antiquities Act 1906
Galapagos Marine Reserve, Ecuador (established 1998)	133,000 extends 40 nm	Regulation pursuant to the special law for the province of Galapagos (Reglamento a la ley especial para la provincia de Galápagos)
Greenland National Park, Denmark (established 1974)	110,000 extends 3 nm from baseline	In 1974, the Park was declared by the Greenland National Council and in 1980 confirmed as a national park under Greenlandic law through 'Executive Order no. 7 of 17 June 1992 from the Greenland Home Rule Authority concerning the National Park in North and East Greenland, as amended by Executive Order no. 16 of 5 October 1999'.
Seaflower Marine Protected Area, Colombia (established 2005)	65,000	Declared by the Minister of Environment, Housing and Territorial Development
Heard Island and McDonald Islands Marine Reserve, Australia (established 2002)	64,600 extends to 200 nm in places	Declared by Governor General under the Environment Protection and Biodiversity Conservation Act 1999
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Exceptionally large areas. There has been progress in recent years with the establishment of new marine sites for biodiversity conservation covering larger expanses of ocean surface than ever before. Most notably, some of the newest MPAs are more than 100,000 sq km in size (see Table III(2)-1 for some of the world's largest MPAs and their legislative basis). Such areas present new management challenges as well as scientific opportunities never before available. 18

Areas beyond national jurisdiction. The unique feature of marine ecosystems is the vast area of the earth's ocean surface that exists beyond national jurisdiction. In terrestrial environments, almost all areas fall within some national regime. In the marine environment, areas beyond national jurisdiction and areas within national jurisdiction share biophysical processes and living resources, and can influence each other. As such, they cannot be treated as separate and isolated zones for management purposes. 19

There is growing recognition that tools applied to areas within the limits of national jurisdiction need to be coherent, compatible and complementary to those applied to MPAs beyond the limits of national jurisdiction, and vice versa (CBD COP 2006 VIII/24, reaffirmed by CBD COP 2008 IX/20). The United Nations (UN) and the CBD Secretariat increasingly work together within that frame of reference (see Box III(2)-1). IUCN and other international organizations and bodies involved in national marine areas have contributed extensive legal analysis on these subjects for international deliberations (see Gjerde et al., 2008a; Gjerde et al., 2008b; Kimball, 2005). 20

Box III(2)-1: Recognizing ecosystem linkages between marine areas within national jurisdiction and the high seas

The UN in 2006 set up the Ad Hoc Open-ended Informal Working Group to study issues of marine biodiversity conservation beyond national jurisdiction. In 2007, the UN Ad Hoc Working Group generated the Global Open Oceans and Deep Seabed (GOODS) Biogeographic Classification (UNESCO, 2009), which was used by the CBD Ad Hoc Working Group on Protected Areas in its deliberations and was subsequently incorporated in decisions of the Ninth Meeting of the Conference of the Parties to the CBD (COP 9) in Bonn, Germany, in 2008.

Specifically, COP 9 adopted scientific criteria and guidance from the GOODS report as important for identifying MPA sites and networks generally (CBD COP 2008 IX/20, para. 14, and Annex I and II). It also invited the UN Ad Hoc Working Group to continue studying these issues, and to cooperate in further developing scientific and technical guidance in such subjects as environmental impact assessment and strategic environmental assessment in order to ensure that activities in areas beyond national jurisdiction do not compromise marine ecosystem integrity (para. 8).

COP 9 recognized the importance of a common set of scientific guidelines and criteria for MPAs, whether within or outside national jurisdiction, and adopted guidelines for identifying and selecting MPAs within national jurisdiction as well as in the open ocean. It also expressed serious concerns about potential threats from activities within national jurisdiction (CBD COP 2008 IX/20). The Eighth Meeting of the Conference of the Parties to the CBD in Curitiba, Brazil, in 2006, directed special attention to deep seabed ecosystems beyond the limits of national jurisdiction, including hydrothermal vents, cold seeps, seamounts, coldwater coral and sponge reef ecosystems. It requested Parties and urged other states to take measures to urgently manage activities and processes under their jurisdiction and control which may have significant adverse impacts on deep seabed ecosystems and species (CBD COP 2006 VIII/21, para. 3).

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In the coming years, international deliberations and technical input on high seas issues will have increasing relevance for the management of ocean areas under national jurisdiction as well as for national legislation. The CBD Conference of the Parties recognized this in 2006 in the context of efforts to develop scientific criteria and guidance for MPAs beyond national jurisdiction, noting that the "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" (CBD COP 2006 VIII/24, para. 38). Recognizing this connection, the CBD Conference of the 21

Parties in 2008 adopted scientific guidance for identifying and designing representative networks of MPAs, including in open ocean waters and deep-sea habitats (CBD COP 2008 IX/20; see section 3.2.1, below).

22 **Vastly extended areas within national jurisdiction**. Historically, MPAs have largely been established near the shore, most commonly to include coastal and near-shore marine waters. Under UNCLOS (discussed further section 3.1.1, below), coastal states may declare a 200 nm exclusive economic zone (EEZ). In many coastal states, EEZs extend the marine area under national jurisdiction to cover an area that is larger than the entire land area and, in small coastal or island states, many times larger. The new challenges presented by this oceans regime entail costs and capacity requirements never before faced by most countries for management, monitoring and enforcement over large and remote areas (see Box III(2)-2).

Box III(2)-2: South Africa's first offshore MPA

In May 2009, South Africa's Minister of Environmental Affairs and Tourism gazetted a proposal to create one of the largest MPAs in the world, the Prince Edward Islands Marine Protected Area. This proposed MPA is located in the Southern Ocean and will be South Africa's first offshore MPA, totalling some 180,633 sq km and covering one third of South Africa's EEZ around the islands.

Once declared, this MPA will increase protection of South Africa's waters (either fully or partially) from less than 1 per cent to over 10 per cent. The proposal creates a no-take sanctuary zone of 12 nm around the islands (4,400 sq km) and defines other restricted use zones. The design is based on a detailed scientific plan, and supported by a draft management and compliance plan.

With limited additional funding for this new initiative, the Minister emphasized the need for increased reliance on support from stakeholders as well as other countries through international agreements to maintain the no-take zone. The Minister also called for implementing a proposed ban on all bottom-trawling and gillnetting throughout the site. The site has been given interim protection status until its final declaration.

Source: DEAT, 2009c; MPA News, 2009. See also DEAT, 2009a; DEAT, 2009b.

23 **Marine ecosystems less well understood**. Marine systems have not been as thoroughly studied as terrestrial systems. While both have complex mixes of different environments and species diversity, detailed knowledge of the distribution and relative importance of marine biota is missing or incomplete for much of the sea under national jurisdiction. Estimates are that oceans provide more than 90 per cent of the biologically useful habitat for life on Earth, including nearly all the major groups of animals, plants and microbes (Day, 2006; UNEP, 2006). However, much of the marine life and biodiversity of the oceans is yet to be discovered and described. New discoveries are being made in understanding deep ocean processes, sea mounts, hydrothermal vents and cold water corals which support ecosystems and a diversity of life never before known. These systems may be particularly vulnerable to bioprospecting, mineral exploration, bottom trawling and other human activities, and need special protection. In contrast to coastal MPAs, which are focused on relatively fixed ecosystems such as marshes, mangroves and seagrasses, planning processes for offshore MPAs may need to proceed with less scientific data or traditional knowledge to inform decisions.

24 International marine experts urge, however, that uncertainty should not stop action to declare MPAs, especially in the deep ocean. The IUCN Guidelines for Marine Protected Areas identify this point as a key lesson for MPA development:

> It is better to have an MPA which is not ideal in the ecological sense but which meets the primary objective than to strive vainly to create the 'perfect MPA'. It is usually a mistake to postpone action on the establishment of an MPA because biophysical information is incomplete. There will usually be sufficient information to indicate whether the MPA is justified ecologically and to set reasonable boundaries (Kelleher, 1999, p. xiii).

This underscores the need for MPA legislation to provide for incremental implementation, especially with large-scale multiple-use sites, starting with planning and management of those parts of a site that are well understood and allowing time for more data collection on other parts to better understand the biological resources, stakeholder interests and best regulatory tools for the identified area (see Box III(2)-3).

Box III(2)-3: New Zealand's MPAs—coastal versus deepwater zones

New Zealand's MPA Policy was updated in 2005 to emphasize the creation of a network of MPAs that is comprehensive and representative of New Zealand's marine habitats and ecosystems. Under this policy, a distinction is drawn between near-shore and offshore areas, which in implementation has been taken to mean 'coastal zone' and 'deepwater zone'. Guidelines for implementing the policy set the boundary between the two zones as the limit of the territorial sea, or 12 nm from the baseline, and for biogeographical classification, the 200 m depth contour, roughly the continental shelf break.

Implementation is flexibly tailored to the features of the two zones. Most notably, an incremental approach is used. While MPA planning for the coastal waters has already commenced, site-specific planning for the deepwater zone will not begin until 2013 because there is currently insufficient data about the deepwater environment to understand the most high-value sites and the best regulatory approach for their protection, while taking into account stakeholder interests. The government will use this time period to narrow the information gap. Before 2013, the government plans to revisit both the classification system and the protection standard in deepwater areas to make sure they reflect improved knowledge and research conducted between now and 2013.

The two zones are also being treated differently in other respects. Activities in the deepwater region will be implemented at the national level, while in the coastal zone they will be implemented regionally. Coastal implementation will involve the development of an integrated regional approach for each sub-region by community-based Marine Protection Planning Forums. Deepwater implementation will be more centralized, guided through a special panel with specific offshore expertise and representing offshore interests. Different classification systems will also be used: for the coastal zone, biogeographic characteristics (ecological and physical), and for the deepwater zone, a more basic tool using environmental classes drawn from a 2005 Marine Environmental Classification system which identifies general areas for further investigation. This approach is, again, incremental because of the larger scale and the lack of reliable scientific information to conduct biogeographic analysis.

For further information see the MPA Policy (New Zealand Department of Conservation and Ministry of Fisheries, 2005).

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Large-scale connectivity of natural processes. There is high natural connectivity between marine, coastal and inland systems. This precludes the effective management of a marine area independent of its adjoining coastal and inland areas, including coastal estuaries, wetlands and rivers. MPAs may be positively or negatively affected by activities on land, particularly in the case of coastal or near-shore protected areas. Land-based sources of marine pollution represent a broadly shared threat to MPAs worldwide. As climate change impacts increase, issues of sea level rise, advancing salinity, contamination of groundwater, extreme weather events and other coastal changes will pose special challenges for human systems as well as natural ones, and MPAs will be important for adaptation and protection. 25

This strong terrestrial-marine connectivity has implications for the design and management of MPAs because coastal and near-shore areas, and sometimes even inland areas (for example, associated watersheds), may need to be included in the broader management plan. Recognizing this linkage, guidelines and principles under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention) (1971) and under the CBD for marine and coastal protected areas call for such areas to be incorporated into integrated coastal and ocean management regimes (see sections 3.2.1 and 3.2.2, below). 26

Box III(2)-4: Great Australian Bight Marine Park: federal–state cooperation

As a result of legal challenges from Australian states in the 1970s against the Commonwealth government's claim of exclusive sovereignty over all coastal waters, a political agreement was reached in 1979, known as the Offshore Constitutional Settlement, which gave the states a legal and administrative role in offshore areas. The arrangement was implemented principally through the Coastal Waters (State Title) Act 1980 and the Coastal Waters (Northern Territory Title) Act 1980, both of which entered into force in February 1983 and gave the states and the Northern Territory title to the coastal waters out to 3 nm.

This legal arrangement opened the door in the late 1990s for collaborative establishment by the Commonwealth and South Australia governments of the Great Australian Bight Marine Park (GABMP). Covering a marine area of more than 20,000 sq km, the park is one of Australia's largest, though strictly speaking it is comprised of two separate parks. The GABMP is an example of inter-jurisdictional cooperation within a federation and the use of a mixed-zone MPA to achieve multiple conservation objectives over an area covering discrete marine systems.

The **state component**, declared in 1996 under South Australia's National Parks and Wildlife Act 1972 primarily for the protection of the Southern right whale and the Australian sea lion, included a pre-existing whale sanctuary established in 1995 under the state's Fisheries Act 1982 (now replaced by the Fisheries Management Act 2007). This component covers 1,683 sq km of marine area extending 3 nm from the shore along roughly 160 nm of coast. It is divided into two adjoining protection zones: a sanctuary zone (a strict nature reserve) and a conservation zone (a managed-resource protected area).

The **Commonwealth component**, declared in 1998 under the National Parks and Wildlife Conservation Act 1975 (now replaced by the Environment Protection and Biodiversity Conservation Act 1999), adjoins the state park in the shape of a giant 'T', the top of which is adjacent to the state park, beginning 3 nm from the shore. The Commonwealth waters are divided into two overlapping zones: a marine mammal protection zone and a benthic protection zone (both classified as managed-resource protected areas). The Commonwealth portion of the park has two main objectives: to complement the purposes of the adjacent state park, and to protect a representative strip of the unique seafloor (benthic) environment in line with the development of a National Representative System of Marine Protected Areas under Australia's Oceans Policy and international agreements. Together, the two zones cover an area of 19,395 sq km and include the waters, seabed and subsoil to a depth of 1,000 m below the seabed. The benthic zone protects marine life associated with the continental shelf and slope of the bight, and the marine mammal zone is managed especially to provide undisturbed calving for the Southern right whale and protection for the Australian sea lion. Owing to the unique design of the benthic zone, the park is the first in Australia to include an area specially designed to be representative of the region.

Cooperation between state and Commonwealth governments

Although the two adjoining parks have their own management plans, each is managed in a cooperative manner. The appointed park manager is stationed in South Australia, and a cross-jurisdictional steering committee guides day-to-day management of the combined park, consisting of representatives from the Australian government's Department of the Environment, Water, Heritage and the Arts, the South Australian Department for Environment and Heritage, Department of Primary Industries and Resources South Australia, District Council of Ceduna, South Australian Tourism Commission, and Australian Fisheries Management Authority. A service agreement exists between the two levels of government through which the Commonwealth government provides funding each year to the South Australian government in return for management services.

(For further information, see Commonwealth of Australia, 2009; Government of South Australia, 2010.)

Contributed by Gordon McGuire.

27 Natural systems connectivity is even more complex in large-scale offshore deepwater marine environments. In such areas, ocean currents, wind drifts and species migrations create natural linkages between distant regions of the ocean. Ocean processes transport nutrients, food, seeds, larvae and organisms, as well as pollutants, across vast ocean and land-ocean areas. These processes are highly dynamic and subject to natural changes, sometimes rapid, without regard to political boundaries, including national jurisdictions or the boundaries of MPAs. To begin to address these special properties of the marine environment, the large marine ecosystem (LME) approach has gained attention in recent years as a means to aid marine ecosystem-based management and conservation. LMEs are areas of the ocean characterized by distinct depths, hydrology, productivity and food-web interactions. Scientists have identified 64 LMEs across the world (see UNEP, 2008; see also Large Marine Ecosystems of the World website). These have become the focal point of global efforts to reduce the degradation of

linked watersheds, marine resources and coastal environments caused by pollution, habitat loss and overfishing.

Three-dimensional space. In the ocean environment, organisms are less dependent on the ocean floor than terrestrial organisms are on the land. Because of the fluid nature of the sea, the movement of marine organisms may be horizontal and vertical, as well as migratory over large distances. There is limited species endemism because of fewer limitations on species movement and greater species mixing. There are also few sharply defined biogeographic provinces with unique species composition. Many marine ecological systems can be highly complex, as with coral reefs where living organisms and their associated non-living physical environment interact and influence the properties of each other. They can also be highly productive, as with upwelling areas where deep ocean waters rise to the surface. In these dynamic systems, the movement of chemical and other pollutants can be immediately harmful to living marine resources which are always in contact with their surrounding water. 28

Box III(2)-5: Locally managed marine areas in the South Pacific

The South Pacific region has experienced significant growth in community conservation areas in the last decade. More than 500 communities spanning 15 independent countries and territories have participated. In 2000, Pacific island community members and practitioners began to characterize these community conserved areas as locally managed marine areas (LMMAs), to better reflect the type of marine resource management being undertaken or envisaged in the region (Govan et al., 2009b).

LMMAs are managed under community-based marine tenure systems that are either legally or informally recognized. The approach joins together contemporary marine protection efforts with traditional conservation practices through community-based adaptive management and local ownership and control. Guidelines developed for LMMAs by the South Pacific Locally Managed Marine Area Network define an LMMA as an area of near-shore waters and coastal resources that is largely or wholly managed at the local level by a coastal community, landowning groups, partner organizations, or collaborative government representatives who reside or are based in the immediate area (Govan et al., 2008, p. 2).

An analysis of the status and potential of this approach was undertaken during 2008–09 under the Coral Reef InitiativeS for the Pacific (CRISP). The assessment found considerable success, with many communities anecdotally reporting rapid and appreciable increases of marine resources within closed areas and an increasing body of technical literature which seemed to confirm this. The assessment also found that the locally managed approach to protected areas was the only approach to marine managed areas being actively pursued in the region, with LMMAs covering some 30,000 sq km, with over 12,000 sq km under active management of which more than 1,000 sq km were no-take zones (Govan et al., 2009b, p. 4).

With respect to legal frameworks, the study found that community-based resource management was not fully supported in the legislation of many participating countries and recommended several measures, including:

(a) Consolidate and integrate the long-term role of various levels of government and sectors, ideally in a decentralized fashion, to support communities with on-the-ground collaboration, and, as part of this effort, strengthen legislation for inshore fisheries, protected areas and wider environmental management.

(b) Broaden the adaptive management processes central to LMMAs to overall island management including ecosystem-wide (including terrestrial) and sustainable development issues, climate change adaptation, and community resilience.

(c) Create an enabling environment by building institutions and legislation more supportive for community initiatives incorporating sustainable management of resources, and remove bureaucratic bottlenecks currently insurmountable by communities.

(d) Preserve traditional tenure and governance systems on which the success of local management depends, taking great care not to undermine or reform these systems, but instead to develop guidance for practitioners to be sensitized around the issues of tenure and for improving the use of traditional ecological knowledge and other related social factors in each country.

(e) Defend local and cultural approaches and the protected area characteristics that have developed for LMMAs in response to local needs, some of which may be determined by social rather than biological factors, and make international bodies aware of these characteristics before assuming that international definitions are regionally applicable.

Source: Govan et al., 2008; Govan et al., 2009a; Govan et al., 2009b.

29 **High environmental variability**. The complex and dynamic features of the oceans generate high environmental variability both temporally and spatially, making living marine resources and marine ecosystems particularly vulnerable to natural and human stresses. Many of these stresses may originate at great distances from the resulting impact. This suggests that the effective design and management of a particular MPA may require marine spatial planning and management on a much larger, multiple-use and multi-sectoral scale, than for the designated MPA alone (Ehler and Douvere, 2009). It also suggests the importance of establishing large MPAs as compared to small isolated sites, particularly in deepwater areas, and the critical need for buffer zones around strictly protected areas. The creation of MPAs comprising mixed zones with coastal waters and deep waters, and involving collaborative mechanisms with other sectors and stakeholders, will be increasingly important to protect the dynamic, interconnected nature of marine systems (see Box III(2)-4).

30 **Long-standing traditional tenure and resource rights regimes**. Most marine areas except for the high seas have traditionally been used by fishing and coastal communities. These communities may also have traditional tenure systems related to marine waters and the resources in them. Communities have usually treated marine areas as commons, or common property, and developed customs, rules and regulations regarding their use. These characteristics of marine areas need to be carefully reflected in the formulation of MPA legislation. The South Pacific is one such region where traditional tenure and governance mechanisms are being used with significant success to establish MPAs as community conserved areas (see Box III(2)-5).

2.2 Special threats

31 In recent decades, scientific understanding has improved significantly about the deteriorating state of the world's oceans, and the major threats to marine ecosystems and MPAs. The most significant direct threats come from habitat destruction, overfishing and land-based sources of pollution as well as climate change, which is likely to present one of the most severe threats to MPAs worldwide in the coming decades. Depending on the area and its uses, other threats may come from unsustainable tourism, dredging, mineral and sand extraction, shipping, invasive or introduced species, oil exploitation, bioprospecting, aquaculture and mariculture. Some of these threats may arise outside the MPA and others may originate inside it. There is extensive literature documenting and summarizing these threats (see, for example, Day, 2006; Salm et al., 2000; Sobel and Dahlgren, 2004).

32 It is important for the legal drafter working with protected area authorities to understand existing or potential threats sufficiently well to draft MPA legislative provisions that provide adequate support for MPA authorities to effectively address these threats. Such provisions should include the necessary authority to undertake protective measures for designated marine areas, and to consult and negotiate marine conservation arrangements with other government sectors and stakeholders. In many instances, such consultations will need to include new kinds of stakeholders with multiple and sometimes competing marine interests, such as domestic and international shipping, local and foreign fishing operations, and ocean mining and energy production. MPA legislation also needs to give special attention to the new challenges faced by protected area authorities with respect to compliance and enforcement in large and sometimes distant marine areas in order to best address these threats and the needs of stakeholders.

33 **Unsustainable fishing**. As technology has advanced and the scope of industrial fishing and related extractive industries has become global, one of the most immediate and growing threats to MPAs worldwide is unsustainable commercial fishing (Sobel and Dahlgren, 2004, p. 34). Not only does this threat directly deplete target species that are overfished, but non-target species and endangered species

are also increasingly affected worldwide as by-catch. A related impact is the habitat destruction caused by bottom trawling and other similar fishing methods, and through lost fishing gear in which threatened species become entangled. In popular coral reef areas and other recreational sites, uncontrolled sports fishing is also causing increased concern.

Development pressures. Today, more than 60 per cent of the human population worldwide lives in coastal zones, and coastal areas face growing development and population pressures. Coastal and near-shore marine biodiversity resources and aquatic habitats are increasingly under stress from land-based pollution, sedimentation from activities on adjacent land, infilling of estuaries, alteration of sediment and other physical changes to the near-shore environment, as well as high-density commercial and residential development, fragmentation of habitats, and offshore disposal of waste. 34

Climate change. Adding to these growing and ongoing threats is the new and expanding threat of climate change. In the decades ahead, climate change is likely to be among the most severe and challenging threats to marine and coastal protected areas worldwide, adding further stress to degrading ecosystems and resources (Day, 2006, p. 628). Marine and coastal ecosystems are already experiencing significant impacts, most of them negative. Coral reefs, for example, are showing signs of severe decline in the face of changing sea temperatures, acidity, circulation and rainfall patterns. Small island states and low-lying coastal states, in particular, are being impacted in complex, multiple ways. This growing threat underscores the urgent need for countries to protect important marine and coastal ecosystems as reference sites for understanding impacts in order to design adaptive measures to help species and ecosystems become more resilient. Projected impacts from continuing climate change also add a sense of urgency to the need to expand protected area coverage with areas that store carbon and capture additional carbon dioxide to mitigate future climate change. 35

2.3 Special management challenges

Protected area authorities and MPA managers face special management challenges posed by the distinct features of marine ecosystems. Legislation needs to be supportive of and responsive to these challenges. 36

User rights and protection status of MPAs. Marine systems have often been described as 'open access' resources (for everyone's use) and their overexploitation is attributed to this feature. While this may hold true for the open ocean, complex property rights exist in many coastal areas and with respect to many marine resources. Property rights may be indigenous (or traditional), historic (passed down by generations) or commercial (where the government sells the rights by licence, lease or outright sale, giving access to the resources). Rights may be held by communities collectively, by a combination of collective and individual entitlements, by corporations, or by individuals. 37

Open access remains a major issue contributing to marine species loss and ecosystem degradation worldwide, especially in deep waters (World Bank, 2006). But even in coastal waters where community traditions may have regulated the use of marine resources as part of common or collective property or heritage, regulations inherent in such use may break down under the influence of national policies, commercialization or other forces. This results in some common property regimes being converted to open-access use. This has been an issue for marine environments more than for terrestrial environments where private ownership is prevalent. In many other coastal areas, unmanaged or poorly regulated development by the government has led to an array of competing or conflicting economic uses, from industrial and artisanal fishers, to oil exploration, ports, tourism and heavy industry juxtaposed 38

at random. The boundaries between these rights may be unclear and may sometimes generate conflict.

39 In some cases, legislation or community action has worked to control access. This occurs, for example, where a formally designated MPA is effectively managed to prohibit exploitation and only compatible uses are allowed, such as low-impact tourism. Controls may also work in collective or common property regimes in many traditional societies where effective rules on access to and use of marine resources are part of sustainable practices. For an example from the South Pacific that illustrates this success, see Box III(2)5. Fiji provides another example. In that South Pacific nation, the traditional leadership of the Ucunivanua village declared a no-fishing zone for two years to allow mud clams to recover from over-harvesting. Since this declaration, regular monitoring has revealed the existence of larger and more clams as well as sightings of species not seen for years. This success has led to the decision to develop a village locally managed marine area (LMMA) (see LMMA Network website).

40 It is important to note that successfully managed access may still put protected sites under severe stress when surrounded by open access. As concluded by the World Bank study:

> The problem is that no single government or governance authority has yet been able to effectively manage or harmonize competing uses and claims. […] All but the areas set aside for nonuse pose some threat to coastal and marine biodiversity. Those with chaotic or unregulated development activities pose the greatest threat (World Bank, 2006, p. 16).

This conclusion presses the point that all protected areas legislation should emphasize the importance of compatible landscape, seascape and resource uses in areas that are adjacent to an MPA or are important for connectivity conservation.

41 **Multiple levels and diverse institutions and interests**. In most coastal countries, a wide variety of government agencies exist with a vast range of marine-related responsibilities and piecemeal interests. Almost every government entity in a coastal country, especially at the national level, is likely in some manner to have a legislatively based interest, mandate or concern over some element of coastal or marine affairs. In decentralized systems, this situation may to some degree be repeated at those levels as well. These entities may range from public institutions with responsibilities over living marine resources (for example, fisheries, wildlife) or recreation (tourism, sports), to others with mining or energy mandates, or responsibilities related to navigation (ports authorities, shipping), defence (coast guard, navy, customs), social affairs (education, culture, disaster preparedness, emergency management) or pollution control (public health, environment agency). Some may have responsibilities under international or regional conventions. Local governments may also have mechanisms and traditional or legal rights and responsibilities for near-shore use and management of both living and non-living marine resources.

42 These entities have their counterparts in stakeholder groups, from non-governmental organizations (NGOs) working in marine conservation to organized resource user groups. Such user groups include local fisheries cooperatives, and private sector companies and trade associations in industrial fishing, mining, oil and gas, shipping, and bioprospecting.

43 In sharp contrast to most terrestrial issues, these diverse institutions with marine interests and activities have little tradition of coordination or little perceived need to collaborate, particularly where mandates are single-purpose and have developed over time with little direct interaction. Moreover, some mandates are outdated, or overlap, compete or leave gaps and uncertainty as to which agency should take the lead. This makes the need for institutional mechanisms for coordination and collaboration on matters related to MPAs all the more critical. As described in Box III(2)-4, the Great Australian Bight National Park is a good example of mixed jurisdictions working collaboratively for a large multi-zoned MPA. Another example in Australia is the Solitary Islands, where New South Wales MPAs adjoin federal MPAs

and coordination takes place through management agreements designed to ensure complementary management of state and federal waters (see the Australia case study accompanying these guidelines: Boer and Gruber, 2010a; see also the New South Wales case study: Boer and Gruber, 2010b).

Less experience with protected area categories. Management experience with protected area categories for marine environments is much less developed than for terrestrial environments. MPA specialists consider it important to use the same internationally accepted system of management categories for both marine and terrestrial environments (Laffoley et al., 2008). The IUCN system of protected area management categories I–VI is used in the WDPA, and is recognized by international organizations and treaties, including the CBD. (The categories and their management objectives are summarized in Part III, Chapter 1, section 6; background is provided in Part I, section 3.2) There are several reasons for using the same system of protected area management categories for both marine and terrestrial sites. These include: 44

- the increasing number of large mixed sites covering marine, estuarine and adjoining coastal zones which need an integrated approach;
- the fact that in many protected area systems the same management agency has jurisdiction over all protected areas irrespective of whether they are terrestrial or marine; and
- growing recognition of the high level of connectivity between these two realms, and the need to reflect this connectivity in management (Laffoley et al., 2008).

At the same time, experts acknowledge that there is less guidance and best practice available on how to apply the IUCN protected area categories to marine systems for management and regulation. Most large marine areas consist of several individual units or management zones, reflecting the diverse interests and uses involved as well as the need to secure certain levels of biodiversity and ecosystem protection. In many cases, these zones are defined in the legislation setting up the protected area. These zones need to be clearly defined and assigned a protected area management category that is consistent with the larger primary unit. 45

There has been limited experience applying the IUCN protected area management categories to multiple-use marine sites (Laffoley et al., 2008). In the past, many protected area managers were of the view that all MPAs should be either category I, II or III (categories that allow only non-extractive activities, in other words, no-take zones). As countries strive to meet global and national MPA targets, the conservation community is recognizing the growing need to use the full range of protected area management categories to protect marine biodiversity. This includes sites of high biodiversity value where there is extensive interaction of people with nature through traditional resource use practices (equivalent to IUCN category V) and sites where sustainable resource use takes place (equivalent to IUCN category VI). As explained in a technical paper that discusses the use of IUCN protected area management categories in MPAs: 46

> Provided a part of the marine, estuarine, or inshore environment fits the IUCN definition for [an] MPA (whether or not the area wants to be referred to as [an] MPA), then it is not inappropriate that it be assigned to one or more of the relevant IUCN categories. This means that any marine area, including an intertidal or sub-tidal area, "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" may be assigned to [an] IUCN category—even if its prime purpose is for fisheries management (Laffoley et al., 2008, p. 118).

The '75 per cent rule' provided in IUCN World Commission on Protected Areas (WCPA) guidelines on protected area management categories is particularly helpful for protected area authorities when assigning an appropriate category to a large-scale, multiple-use MPA (Dudley, 2008, p. 35). Such areas may have conservation objectives as well as some zones within them where other uses are permitted 47

(for example, tourism lodges, villages, fishing). The rule is that the primary objective should apply to at least three quarters of the protected area. For example, an MPA that is managed mostly for multiple-use purposes as a category VI area may contain a small strictly protected core area. In such cases, where the area fits the IUCN definition of a protected area, the appropriate category formally assigned for legal purposes and international reporting would likely be category VI.

48 The three-dimensional nature of marine environments poses another challenge that is unique to MPAs. This relates to the vertical zoning of a marine site, as some countries are starting to do. Vertical zoning means that the management rules applied to the sea floor and the water column are different. This management technique may be important, for example, where marine life in the deepest part of the ocean (the benthic zone) needs strict protection for preservation or restoration, while surface or mid-water fishing may still be permitted. This raises legal considerations about how to describe protected area categories as applied to marine areas, whether vertical zoning creates special enforcement needs, and whether scientific monitoring may be required to ensure that water column activities do not have a negative impact on benthic communities so that the primary conservation objectives are sustained.

49 **Less public awareness about the sea**. In contrast to terrestrial systems, the casual admirer and average user of the oceans sees only the surface and has historically lacked awareness or understanding of the basics of ocean life and ecosystems below the surface. There has been little momentum until very recently for societies and groups to develop an 'ocean conservation ethic'. In the case of terrestrial areas, meanwhile, it has been more than a hundred years since the emergence of a strong land conservation ethic, which began in the late 1800s in the US and quickly spread worldwide. Until science and technology made significant advances in recent decades, there had been little opportunity for scientists to conduct research and learn about the processes and life sustained by the seabed and the ocean's underwater systems. A key part of any effective MPA network must be strong and ongoing education and awareness building of the public about the importance of coastal and marine protected areas for restoring and maintaining the ecosystem functions and productivity of marine resources.

3 MPA-specific international obligations and principles

50 Consideration of international obligations and principles guiding the development of MPAs starts with international oceans law. The main instruments include UNCLOS and marine environmental treaties concluded under the auspices of and managed by the International Maritime Organization (IMO), a specialized agency of the UN which facilitates implementation of rules for international shipping, including for marine environmental protection. In addition, some of the international conservation treaties reviewed in Part I have explicit provisions for marine and coastal protected areas that the legal drafter should consider when formulating MPA provisions. These considerations relate both to issues that may require implementation through national legislation as well as issues where international guidance provides principles and suggested approaches to take into account in protected areas legislation. This section also surveys some regional agreements important for MPAs and legislation, to emphasize the point that regional and bilateral agreements that countries have ratified may also contain obligations and other commitments important to take into account in MPA legal provisions.

3.1 International oceans law

3.1.1 United Nations Convention on the Law of the Sea

Basic data: Concluded in 1982, entered into force 1994, 160 States Parties
Website: http://www.un.org/Depts/los/index.htm
Objectives: Establishes a comprehensive legal framework for use and development of the world's oceans and their resources, addressing all matters relating to the law of the sea.

UNCLOS was designed to serve as a unifying framework for numerous, more specific ocean law agreements, and as a foundation for the progressive development of ocean law at the global and regional levels. It specifies the rights and obligations of each nation in its use of the world's oceans, as well as the general objectives and principles which must guide the protection and sustainable use of the marine and coastal environment and its resources. The IUCN publication, International Ocean Governance (Kimball, 2003), is a guide to UNCLOS and examines how other international conventions and institutions fit within its framework for the purposes of marine biodiversity. 51

Relevance for marine protected areas law. UNCLOS has direct relevance for national MPA legislation in two respects. First, it significantly expands the rights of coastal states to manage marine resources over vast parts of the ocean by defining five offshore zones within which coastal states exercise varying degrees of sovereignty and jurisdiction. Second, it defines internal waters as opposed to offshore waters. The rights and responsibilities of other nations within these zones are also delineated. 52

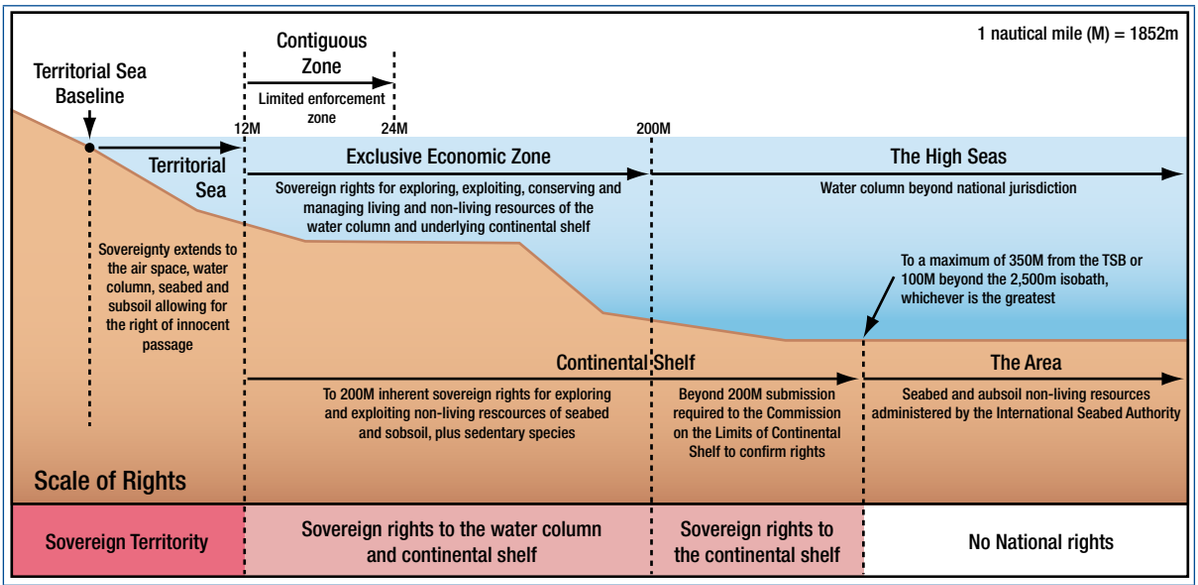
As an overarching mandate, UNCLOS places an unqualified general obligation on coastal states and other states to protect and conserve the marine environment, regardless of zone. 53

Internal waters. Under UNCLOS, "waters on the landward side of the baseline of the territorial sea form part of the internal waters of the State" (Art. 8) The baseline is the outer boundary of internal waters and is the starting point for the delimitation of the zones beyond. Coastal states exercise full sovereignty over internal waters and may enact laws to regulate and use any resource in these waters. Coastal states also exercise maximum jurisdiction over foreign ships in this zone, as no right of passage for foreign vessels exists within internal waters, thus allowing coastal states to set conditions for entry into its ports. When a straight baseline is used, having the effect of including as internal waters extensive marine areas that had not previously been considered as such, a right of innocent passage of foreign ships may exist. 54

Defined ocean zones. The ocean zones defined by UNCLOS are summarized below (see Figure III(2)-1). The zones are measured from the baseline, which normally follows the low-water line along the coast, except where particular geographic configurations are present (for example, the coastline is deeply indented or cut into, or faces a fringe of islands along the coast in its immediate vicinity), in which case a method of straight baselines may be used, joining appropriate points to establish the baseline (Arts. 5, 7). 55

Territorial sea. The territorial sea, extending up to 12 nm from the baseline, is an area over which coastal states exercise full sovereignty. Sovereignty extends to the airspace, water column, seabed and subsoil, but is subject to the right of innocent passage of foreign ships. Coastal states may regulate this right by adopting laws and regulations in relation to navigation safety, marine environmental conservation and traffic schemes (for example, sea lanes) applicable to foreign ships transiting through their territorial sea. This authority is restricted in two ways: these laws may not have the effect of limiting or encroaching on the right of innocent passage, nor may coastal states impose design, construction or crewing equipment standards. 56

Figure III(2)-1: Maritime zones



Source: Arctic Council, 2009, p. 52.

57 **Contiguous zone**. States may claim a 12 nm contiguous zone adjacent to the territorial sea (that is, up to 24 nm from the baseline), in which the coastal state can exercise limited control over foreign ships for the purposes of preventing and punishing the infringement of customs, fiscal, immigration or sanitation laws and regulations that apply within its territory.

58 **Exclusive economic zone**. The EEZ is an area beyond and adjacent to the territorial sea. It is measured from the territorial sea baseline and extends to a maximum of 200 nm. The coastal state has sovereign rights for "exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the seabed and of the seabed and its subsoil" (Art. 56), in other words, the water column and the underlying continental shelf (see paragraph 61, below). Coastal states therefore control exploration and exploitation. This includes controlling all activities for commercial use (for example, fisheries). However, where the same fish stock or stocks of associated species occur within the EEZs of two or more coastal states, or in the coastal state's EEZ and high seas, or is a highly migratory species listed in an Annex, the Parties are required to cooperate directly or through an appropriate regional or international organization to ensure conservation and sustainable use (Art. 63, 64). Coastal states control exploration of their EEZ, such as for the production of energy from the water, currents and wind.

59 In the EEZ, a coastal state also has jurisdiction over protection and preservation of the marine environment, marine scientific research, and the establishment and use of artificial islands, installations and structures (Art. 56(1)(b)).

60 A coastal state may regulate shipping for the purposes of pollution prevention but must do so in conformity with international rules and standards set by the IMO or under IMO conventions. Enforcement powers with respect to transiting ships in breach of these rules and standards are limited to the physical inspection of foreign ships where a violation has resulted in discharge causing or threatening significant pollution of the marine environment. The arrest and detention of foreign ships is only allowed if a violation causes or threatens to cause major damage to the coastline, interests or resources of the coastal state.

Continental shelf. The continental shelf of a coastal state comprises the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land to the outer edge of the continental margin, or to a distance of 200 nm from the baseline where the outer edge of the continental margin does not extend to that distance (Art. 76). Over the continental shelf, coastal states exercise sovereign rights to the exploration and exploitation of natural resources, and jurisdiction over marine scientific research (Art. 77). 'Natural resources' for these purposes means mineral and other non-living resources of the seabed and subsoil, together with living organisms belonging to sedentary species, that is to say, organisms which, at the harvestable stage, are either immobile on or under the seabed, or are unable to move except in constant physical contact with the seabed or the subsoil (Art. 77). 61

A coastal state's continental shelf may extend beyond 200 nm from the baseline. The portion of the continental shelf beyond the 200 nm limit is the extended continental shelf, also known as the continental margin. It comprises the submerged prolongation of the land mass of the coastal state (the continental shelf proper), and consists of the seabed and subsoil of the shelf, the slope and the rise. It does not include the deep ocean floor with its oceanic ridges or the subsoil thereof (Art. 76(3)). 62

States wishing to delimit the outer continental shelf beyond 200 nm may do so to a maximum of 350 nm from the territorial sea baseline, or 100 nm from the 2,500m isobath, whichever is the greatest (an isobath is the contour line on a map connecting points of equal depth). There is, however, a 350 nm limit for submarine ridges (Art. 76(6)). To formally establish these limits in international law, a state had 10 years from the time of the entry into force of UNCLOS to submit its claim to the Commission on the Limits of the Continental Shelf. The treaty text specifies the process to be used for setting the limits once a claim has been submitted: "The Commission shall make recommendations to coastal States on matters related to the establishment of the outer limits of their continental shelf. The limits of the shelf established by a coastal State on the basis of these recommendations shall be final and binding" (Art. 76(8)). 63

This continental margin presents a complex distribution of rights and responsibilities. A coastal state has exclusive rights to resources, as defined by Article 77, on or under its continental margin (its seabed and below the seabed). However, the waters above the continental margin (the water column above the continental shelf that is beyond the EEZ) are part of the high seas and are thereby beyond national jurisdiction. In other words, where the continental shelf extends beyond 200 nm from the baseline, coastal states have no jurisdiction to exploit the living resources in the water column because the waters above the seabed are considered high seas. Moreover, coastal states have no right to unilaterally control the exploitation of living resources by foreign flagged vessels in the continental margin. Coastal states may not exercise jurisdiction over foreign ships in high seas waters above the continental margin. However, they can control their own flagged vessels. All states have the right to exploit high seas living resources. 64

Coastal states may place artificial islands, installations or structures on their extended continental shelf. Safety zones may also be established around such installations, in conformity with international standards, but must not interfere with recognized sea lanes essential to international navigation. 65

High seas. The high seas comprise all parts of the sea that are not included in a country's internal waters, territorial sea, EEZ or archipelagic waters.[1] The high seas are open to all states, whether coastal or landlocked. This freedom of the seas entails, for all states, the freedom of navigation, freedom of overflight, freedom to lay submarine cables and pipelines (subject to Part VI of UNCLOS), freedom 66

1 'Archipelagic waters' refers to waters of an archipelago (a group of islands), including parts of islands, interconnecting waters and other natural features which are so closely interrelated that they form an intrinsic geographical, economic and political entity, or which historically have been regarded as such (Art. 46(b)).

to construct artificial islands and other installations permitted in international law (subject to Part VI), freedom of fishing (subject to the conditions in section 2), and freedom of scientific research (subject to Parts VI and XIII). The high seas are to be reserved for peaceful purposes and no state may lay claim to or validly purport to subject any part of the high seas to its sovereignty. The establishment and management of high seas MPAs requires an international agreement in each case.

67 **The Area**. The seabed, ocean floor and subsoil thereof, beyond the limits of national jurisdiction, form an entity known as 'the Area' (Art. 1(1)(1)). Part XI of the Convention is exclusively about the Area and includes definitions that apply only to the Area. In particular, the term 'resources' when used in relation to the Area means "all solid, liquid or gaseous mineral resources *in situ* in the Area at or beneath its seabed, including polymetallic nodules"; and 'resources', "when recovered from the Area, are referred to as 'minerals'" (Art. 133). The Area and its resources are the common heritage of mankind (Art. 136). All activities related to exploration for and exploitation of the resources of the Area are administered by the International Seabed Authority.

68 **Obligation to protect and preserve the marine environment**. UNCLOS establishes an unqualified obligation on all states to protect and preserve the marine environment (Art. 192). It further specifies that states have a sovereign right to exploit their natural resources pursuant to their environmental policies and in accordance with their duty to protect and preserve the marine environment (Art. 193). The obligation to protect and preserve the marine environment is given legal and operational context through a number of specific provisions. Furthermore, states have the general obligation, individually and jointly, to take all measures necessary, consistent with the Convention, to prevent, reduce and control pollution of the marine environment from any source, including land-based and sea-based sources (Art. 194). This requirement is explicitly extended to the conservation and management of marine living resources by the provision specifying that marine pollution measures "shall include those necessary to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life" (Art. 194(5)).

69 The UNCLOS definition of marine pollution to cover estuaries brings that obligation to internal and territorial waters:

> Pollution of the marine environment means the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities (Art. 1(1)(4)).

70 Further, Article 197 requires state cooperation on a global or regional basis in formulating and elaborating rules, standards and recommended practices consistent with the Convention "for the protection and preservation of the marine environment."

71 **Coastal state duty to manage EEZ natural resources**. A coastal state's control over its EEZ resources, living and non-living, and over its economic activities out to its EEZ, is nearly complete (Kimball, 2003). UNCLOS spells out the rights and duties of coastal states in the EEZ to include:

> (a) sovereign rights for the purpose of exploring and exploiting, *conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the seabed and of the seabed and its subsoil*, and with regard to other activities for the economic exploitation and exploration of the zone, such as the production of energy from the water, currents and winds;
>
> (b) jurisdiction as provided for in the relevant provisions of this Convention with regard to:
> (i) the establishment and use of artificial islands, installations and structures;
> (ii) marine scientific research;
> (iii) the protection and preservation of the marine environment (Art. 56(1); emphasis added).

As a result, a coastal state may establish an MPA in the EEZ but this right is limited by certain freedoms that all states have in the EEZ including the freedom of navigation.

Freedom of navigation: a challenge for MPAs. The freedom of navigation system under UNCLOS places limits on the rights of coastal states and presents a challenge for MPAs. There are different shipping rights of passage through the various ocean zones. In the EEZ, ships of all states, whether coastal or landlocked, have the freedom of navigation as an extension of the right to freedom of navigation on the high seas (Art. 58, 87). The exercise of this right must be for peaceful purposes and must take into account the rights and duties of the coastal state and applicable laws and regulations, as far as they are consistent with the Convention. 72

In the territorial sea, the powers of coastal states are much more extensive. Nevertheless, ships of all states still enjoy the right of innocent passage through territorial seas, defined as passage that is peaceful, respects the rights of the coastal state in its territorial sea, and complies with the Convention and other rules of international law. 73

If a recognized shipping lane happens to pass through an MPA established by a coastal state, the coastal state has limited powers to seek rerouting to prevent pollution or disturbance of the sea area. Where a coastal state believes a transiting foreign ship is violating applicable international rules and standards for preventing and controlling pollution, it may only undertake physical inspection where a violation has resulted in substantial discharge causing or threatening significant pollution of the marine environment. Actual arrest and detention of the foreign ship is only allowed if the violation causes major damage or threat of major damage to the coastline, interests or resources of the coastal state, and in such cases only monetary penalties may be imposed (Arctic Council, 2009, p. 52). For the purposes of MPA management, this means that action may be possible only once the damage is done, unless the site has also been designated for special international protection by the IMO. 74

The protection of MPAs from the negative impact of international shipping is available in international law by action of the IMO. This is through the international designation of a site as a particularly sensitive sea area (PSSA) or special area under IMO-related mechanisms (see section 3.1.2, below). 75

Basic principles for decision making. UNCLOS recognizes a number of foundation principles which states should apply when exercising their rights and duties. These are basic principles to be reflected in protected areas legislation generally, as discussed in Part I of these guidelines. Their emphasis in UNCLOS indicates their importance for MPA legislation as well. These principles include: 76

- **Science-based decision making**. In exercising EEZ management and conservation responsibilities over living marine resources, the coastal state must take into account the "best scientific evidence available to it" (Art. 61(2)). More broadly, states are required to cooperate in scientific studies, research, and exchange of information and data about pollution of the marine environment, and to use that knowledge to establish scientific criteria for rules, standards and recommended practices and procedures for the prevention, reduction and control of pollution of the marine environment within national jurisdiction as well as on the high seas (Art. 200, 201).
- **Environmental impact assessment** (EIA). UNCLOS requires that states assess the potential effects of planned activities under their jurisdiction or control when they have reasonable grounds for believing that they "may cause substantial pollution of or significant and harmful changes to the marine environment" (Art. 206).
- **Ecosystem approach**. UNCLOS envisions taking an ecosystem approach in its marine pollution control requirements (Art. 194).

- **Prevention and precaution**. The general obligations to protect the marine environment and prevent marine pollution, along with the broad definition of 'pollution', begin to introduce concepts of prevention and precaution. A supplemental implementing agreement, the 1995 Fish Stocks Agreement,[2] explicitly includes the precautionary principle, with several provisions directing how it should be applied (Art. 6).
- **Regional and global cooperation**. States are required to cooperate on a global basis and, as appropriate, on a regional basis, directly or through competent international organizations, in formulating and elaborating international rules, standards and recommended practices and procedures for the protection and preservation of the marine environment, taking into account characteristic regional features (Art. 197). This is an important provision for the regional seas agreements and protocols that followed UNCLOS

3.1.2 International Maritime Organization rules and conventions

77 The IMO is the specialized agency of the UN with responsibility for overseeing international law and standards for shipping, including maritime safety, security and environmental protection (see IMO website). The IMO's operational arm for marine environmental activities is the Marine Environment Protection Committee (MEPC), which meets every nine months. Among its activities is to develop implementation guidelines for marine environmental treaties which IMO manages, and to designate environmentally important marine areas for special protections from the negative impacts of shipping, particularly where those marine areas are in waters under national jurisdiction.

78 **Relevance for marine protected areas law**. PSSAs designated by the MEPC and special areas recognized under an IMO convention are the two IMO-related marine area designations and the main tools currently available to countries for giving protection from international shipping to designated or proposed deep ocean MPAs in the EEZ. Given the importance of these tools, the legal drafter needs to be familiar with the requirements for designation, should an MPA be located or planned in the EEZ. MPA legal provisions should take into consideration any legal requirements that the IMO may have for designation, and provide other supportive provisions, as necessary, to facilitate the nomination and designation of the site. These two designations are discussed further below.

79 **Particularly sensitive sea areas**. According to IMO guidelines, a PSSA is:

> an area that needs special protection through action by IMO because of its significance for recognized ecological, socio-economic, or scientific attributes where such attributes may be vulnerable to damage by international shipping activities. The criteria for the identification of particularly sensitive sea areas and the criteria for the designation of special areas are not mutually exclusive. In many cases a Particularly Sensitive Sea Area may be identified within a Special Area and vice versa (IMO, undated a).

80 The IMO Assembly at its 24th session in 2005 adopted the Revised Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas (IMO 2005 A.982(24)). These guidelines include criteria for marine areas to be designated as PSSAs, including: ecological criteria, such as a unique or rare ecosystem, diversity of the ecosystem, or vulnerability to degradation from natural events or human activities; social, cultural and economic criteria, such as significance of the area for recreation or tourism; and scientific and educational criteria, such as biological research or historical value.

2 The Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Strocks and Highly Migratory Fish Stocks (1995). Straddling fish stocks are those fish stocks or stocks of associated species that occur in more than one EEZ (transboundary straddling stocks) or that occur both within an EEZ (or EEZs) and in the adjacent high seas (commonly called stradddling stocks) (see Kimball, 2003).

Such areas can be proposed by an IMO member state and designation takes place through action of the IMO. An application for PSSA designation should contain a proposal for protective measures aimed at preventing, reducing or eliminating the threat or identified vulnerability. When an area is approved as a PSSA, specific measures can be used to control maritime activities in that area, such as routing, strict application of discharge restrictions and equipment requirements for ships such as oil tankers, and other operational issues under the competence of the IMO. 81

The following PSSAs have been designated worldwide as of November 2009: 82

- Great Barrier Reef, Australia (designated a PSSA in 1990)
- Sabana-Camaguey Archipelago in Cuba (1997)
- Malpelo Island, Colombia (2002)
- the sea around the Florida Keys, US (2002)
- Wadden Sea, Denmark, Germany, Netherlands (2002)
- Paracas National Reserve, Peru (2003)
- Western European Waters (2004)
- extension of the existing Great Barrier Reef PSSA to include the Torres Strait (proposed by Australia and Papua New Guinea) (2005)
- Canary Islands, Spain (2005)
- Galapagos Archipelago, Ecuador (2005)
- Baltic Sea area, Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland and Sweden (2005)
- Papahanaumokuakea Marine National Monument, US (2008).

The Papahanaumokuakea Marine National Monument, the latest PSSA designation, illustrates some of the process, and the level of collaboration between international and national authorities, involved in designating a fragile marine environment for protection. The Papahanaumokuakea Marine National Monument was initially designated by the US as a national MPA in 2006. It includes a unique, fragile and integrated coral reef ecosystem that consists of an approximately 1,200 mile stretch of small islands, atolls, banks, seamounts, pinnacles, shoals and other emergent features. The MEPC designated the PSSA in principle, pending the adoption of associated protective measures by the IMO Maritime Safety Committee. These measures were adopted in October 2007. They include expansion and amendment of six areas to be avoided (ATBAs) that had previously been designated by the IMO in 1981 to protect the North-West Hawaii Islands. In addition, a ship-reporting system has been initiated to provide critical alerts and other information to assist safe navigation in this area, and to provide information on vessel traffic in transit through the PSSA, to facilitate the ability to respond to maritime emergencies. 83

Special areas under MARPOL. The International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78), is one of the main IMO conventions, regulating and preventing marine pollution by ships. It covers accidental and operational oil pollution, air pollution, as well as pollution by chemicals, goods in packaged form, sewage and garbage. 84

In Annex I (Prevention of pollution by oil), Annex II (Control of pollution by noxious liquid substances) and Annex V (Prevention of pollution by garbage from ships), MARPOL defines certain sea areas as 'special areas'. Special areas are those which, for technical reasons relating to their oceanographic and ecological condition and to their sea traffic, require the adoption of mandatory measures to prevent sea pollution. Under MARPOL, special areas are provided with a higher level of protection than other areas of the sea. Guidelines for designation of special areas under MARPOL were adopted by the IMO 22nd Assembly in 2001 (IMO 2001 A.927(22)). Special areas under MARPOL are listed in Table III(2)-2. 85

Table III(2)-2: Special areas under MARPOL

Area	Adopted #	Entry into force	In effect from
Annex I: Oil			
Mediterranean Sea	2 Nov 1973	2 Oct 1983	2 Oct 1983
Baltic Sea	2 Nov 1973	2 Oct 1983	2 Oct 1983
Black Sea	2 Nov 1973	2 Oct 1983	2 Oct 1983
Red Sea	2 Nov 1973	2 Oct 1983	*
'Gulfs' area	2 Nov 1973	2 Oct 1983	1 Aug 2008
Gulf of Aden	1 Dec 1987	1 Apr 1989	*
Antarctic area	16 Nov 1990	17 Mar 1992	17 Mar 1992
North West European Waters	25 Sept 1997	1 Feb 1999	1 Aug 1999
Oman area of the Arabian Sea	15 Oct 2004	1 Jan 2007	*
Southern South African waters	13 Oct 2006	1 Mar 2008	1 Aug 2008
Annex II: Noxious liquid substances			
Antarctic area	30 Oct 1992	1 Jul 1994	1 Jul 1994
Annex V: Garbage			
Mediterranean Sea	2 Nov 1973	31 Dec 1988	1 May 2009
Baltic Sea	2 Nov 1973	31 Dec 1988	1 Oct 1989
Black Sea	2 Nov 1973	31 Dec 1988	*
Red Sea	2 Nov 1973	31 Dec 1988	*
'Gulfs' area	2 Nov 1973	31 Dec 1988	1 Aug 2008
North Sea	17 Oct 1989	18 Feb 1991	18 Feb 1991
Antarctic area (south of latitude 60 degrees south)	16 Nov 1990	17 Mar 1992	17 Mar 1992
Wider Caribbean region including the Gulf of Mexico and the Caribbean Sea	4 July 1991	4 Apr 1993	*
Annex VI: Prevention of air pollution by ships (SOx emission control areas)			
Baltic Sea	26 Sept 1997	19 May 2005	19 May 2006
North Sea	22 July 2005	22 Nov 2006	22 Nov 2007

\# Status of multilateral conventions and instruments in respect of which the international maritime organization or its secretary general perform depositary or other functions as at 31 December 2002.

* The special area requirements for these areas have not taken effect because of lack of notifications from MARPOL Parties whose coastlines border the relevant special areas on the existence of adequate reception facilities (regulations 38.6 of MARPOL Annex I and 5(4) of MARPOL Annex V).

Source: IMO, undated b.

86 A recent action by the MEPC illustrates the growing importance and critical value for national MPAs of the special areas designation. At its 56th session in 2007,

> The [MEPC] adopted a resolution setting a date of 1 August 2008 for the discharge requirements in "the Gulfs area" (a Special Area under MARPOL Annexes I and V) to take effect. The area was established as a Special Area in 1973, when the Convention was adopted, but the discharge requirements therein could not take effect until States in the area had ratified the Convention and provided adequate reception facilities.

> Following a 10-year regional project on the implementation of MARPOL, organized and administrated by ROPME/MEMAC [Regional Organization for the Protection of the Marine Environment Marine Emergency Mutual Aid Centre], with support [from] IMO's technical co-operation programme, all the States in "the Gulfs area" have now ratified MARPOL and have provided adequate reception and treatment facilities for Annex I and Annex V ship-generated wastes in ports, terminals and ship repair ports in the area (IMO, 2007).

3.2 International conservation treaties

It is worthwhile for the legal drafter to be familiar with the basic obligations and concepts of international and regional treaties as they relate specifically to MPAs. This section highlights key CBD obligations, principles and policy guidance associated with marine biodiversity conservation. It also briefly reviews marine conservation-related provisions in the Ramsar Convention and the World Heritage Convention. Regional seas programmes and other regional instruments are then discussed to highlight important regional obligations that may have legal implications. The purpose is to emphasize the importance for the legal drafter to be familiar with all such instruments to which the country is or may become a Party for commitments and obligations to incorporate in MPA legal provisions. (International and regional treaties and policy instruments of general application to protected areas legislation are reviewed in Part I.) 87

3.2.1 Convention on Biological Diversity

Several decisions of the CBD Conference of the Parties in recent years have set forth goals, actions, guidelines and criteria that Parties are urged to apply when establishing and managing MPAs in order to advance and be in accordance with the objectives of the Convention. These decisions have consequences for MPA legislation because they contain policy, principles, processes and actions that should be supported by legislation wherever possible. 88

Box III(2)-6: CBD Programme of Work on Marine and Coastal Biodiversity—MPAs and national legislation

The CBD Programme of Work on Marine and Coastal Biodiversity gives special attention to marine and coastal protected areas:

> **Programme element 3: Marine and coastal protected areas**
>
> **Goal:** 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. […]
>
> **Operational objective 3.3:** To achieve effective management of existing marine and coastal protected areas
>
> *Suggested activities*
>
> (a) To achieve effective management of marine and coastal protected areas *through good governance, clear 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 sustainable financing.
>
> (b) To 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.
>
> (c) To facilitate relevant stakeholder and indigenous and local community participation as an essential component of implementing operational objective 3.3.

Source: CBD COP 2004 VII/5; emphasis added.

89 The CBD articulated marine and coastal biodiversity as a topic of special concern at the First Meeting of the Conference of the Parties to the CBD, in 1994 (CBD COP 1994 I/9). The Second Meeting of the Conference of the Parties, in 1995, adopted what came to be known as the Jakarta Mandate on Marine and Coastal Biodiversity, a programme of action for the conservation and sustainable use of marine and coastal biodiversity (CBD COP 1995 II/10). Reflecting their deep concern about the serious threats to marine and coastal biodiversity, the Parties called for the development of a programme of work to reduce threats to and advance conservation and sustainable use of marine and coastal biodiversity.

90 **Relevance for marine protected areas law**. The CBD Conference of the Parties adopted a Programme of Work on Protected Areas in 2004, which contains principles, goals and actions applicable to all protected areas (see Part I, section 5.1.1). In 1998, the Conference of the Parties had before it a separate programme of work for marine and coastal biodiversity, as called for in its earlier decision. This programme of work was adopted by the Parties in 1998 (CBD COP 1998 IV/5) and was significantly updated in 2004 (CBD COP 2004 VII/5) (see Box III(2)-6).

Table III(2)-3: CBD guidance on marine and coastal protected areas and networks

Scientific criteria for identifying ecologically or biologically significant marine areas in need of protection in open-ocean waters and deep-sea habitats (Annex 1)	Scientific guidance for selecting areas to establish a representative network of marine protected areas, including in open ocean waters and deep-sea habitats (Annex II)
Criteria • Uniqueness or rarity—with respect to (1) endemic species, populations or communities, (2) habitats or ecosystems, or (3) unusual geomorphological or oceanographic features • Special importance for life history stages of species—required for a population to survive and thrive • Importance of threatened, endangered or declining species and/or habitats—containing habitat for survival or recovery of endangered, threatened or declining species, or areas with significant assemblages of such species • Vulnerability, fragility, sensitivity or slow recovery—relatively high proportion of sensitive habitats, biotopes or species that are functionally fragile or with slow recovery • Biological productivity—containing species, populations or communities with comparatively higher natural biological productivity • Biological diversity—comparatively higher diversity of ecosystems, habitats, communities or species, or higher genetic diversity • Naturalness—comparatively higher degree of naturalness as a result of the lack of or low level of human-induced disturbance or degradation	**Required network properties and components** • Ecologically and biologically significant areas—geographically or oceanographically discrete areas with important services to one or more species/populations of an ecosystem or to the ecosystem as a whole, as compared to other surrounding areas or areas of similar ecological characteristics • Representativity—when the network consists of areas representing different biogeographical subdivisions of the global oceans and regional seas that reasonably reflect the full range of ecosystems, including biotic and habitat diversity • Connectivity—to allow linkages whereby protected sites benefit from larval and/or species exchanges, and functional linkages from other network sites (i.e., individual sites benefit one another) • Replicated ecological features—more than one site in the given biogeographic area containing examples of a given feature or features (species, habitats and ecological processes) that naturally occur in that area • Adequate and viable sites—all sites within a network should have size and protection sufficient to ensure the ecological viability and integrity of the features for which they were selected

Source: Adapted from CBD COP 2008 IX/20, Annex I and Annex II.

91 The CBD Programme of Work on Marine and Coastal Biodiversity was guided by a technical report specifically addressing marine and coastal protected areas, prepared by an ad hoc committee (SCBD, 2004b). The report gave a strong scientific basis for countries to establish marine and coastal protected areas to meet their biodiversity goals and obligations under the CBD. It stated unequivocally that the use of marine and coastal protected areas was the "only method" to maintain marine ecosystems in a

truly natural state in response to CBD requirements to protect or restore ecosystems, natural habitats and species populations (SCBD, 2004b, p. 9). The report concluded that such types of protected areas were an essential element of the management of biological diversity and were essential for coastal countries to provide a complete protected area network covering all ecosystems (SCBD, 2004b, p. 9).

92 Subsequently, the Ninth Meeting of the Conference of the Parties to the CBD, in 2008, went considerably further with its guidance on MPAs, adopting a decision that essentially defined what would comprise a network of MPAs (CBD COP 2008 IX/20). This decision contains scientific guidance on the required properties and components for a site to be part of an MPA network, including in open-ocean waters and deep-sea habitats (Annex II). The decision also adopts scientific criteria for identifying ecologically or biologically significant marine areas in need of protection in open-ocean waters and deep-sea habitats (Annex I). Recalling a decision of the Eighth Meeting of the Conference of the Parties, which recognized that the application of tools beyond and within national jurisdiction need to be coherent, compatible and complementary (CBD COP 2006 VIII/24), the 2008 decision urges Parties to apply the scientific criteria and guidance with a view to establishing representative networks of MPAs (CBD COP 2008 IX/20, para. 18).

93 For the purposes of MPA legislation, the most important elements of these annexes are the criteria for selecting sites, and the required properties and components of an MPA network (see Table III(2)-3). These elements reinforce several principles relevant to protected area systems and networks overall, as laid out in Part I and elaborated in Part III, Chapter 1.

94 The 2008 COP decision adopting these guidelines underscores their importance as the latest scientific and policy consensus with respect to MPAs. They reflect elements that the legal drafter should consider incorporating in provisions of MPA legislation related to selecting individual sites and establishing MPA networks.

3.2.2 Ramsar Convention

95 The Ramsar Convention sets out the obligation for countries to promote the conservation of wetlands by pursuing compatible land use planning and other measures such as establishing nature reserves (see Part I, section 5.1.3). For countries that are Parties to the Ramsar Convention, marine and coastal protected areas are a major tool for advancing compliance with this treaty.

96 **Relevance for marine protected areas law**. The Ramsar Convention defines wetlands to include areas “with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres” (Art. 1). This covers most coastal zones around the world.

97 In 2002, Parties to the Ramsar Convention adopted ‘New Guidelines for the management planning of Ramsar sites and other wetlands’. These guidelines focus on the site-based scale of management planning, recognizing that site planning should be one element of a multi-scale approach to wise use planning and management of wetlands. The emphasis is on the need for wetland site management to be integrated with broad-scale landscape and ecosystem planning, including at the integrated river basin and coastal zone scale, because policy and planning decisions at these scales will affect the conservation and wise use of wetland sites (Ramsar COP 2002 VIII.14, Annex, para. 5, 14–27).

98 The ‘Principles and guidelines for incorporating wetland issues into Integrated Coastal Zone Management (ICZM)’, also adopted in 2002, identify governance as an important element for advancing an ICZM approach. Importantly, the guidelines identify the need for supportive legal and institutional

frameworks that can minimize and resolve jurisdictional overlaps in coastal zones when applying the ICZM approach. Recognizing that many stakeholders use coastal wetlands, the guidelines emphasize the need for all stakeholders to fully participate in decisions related to coastal zone management planning. The guidelines highlight three kinds of issues where stakeholder participation is particularly important:

(a) issues that are the responsibility of a particular stakeholder, for example, a port authority, often carrying out a statutory legal duty;

(b) issues that are the responsibility of a particular stakeholder or several stakeholders (local fishing communities), who would benefit from the exchange of information to increase understanding and awareness; and

(c) issues, for example, the impact of climate change and sea level rise, that can affect all stakeholders but are the responsibility of none, and for which it is advantageous to develop responses through an integrated approach (Ramsar COP 2002 VIII.4, Annex, para. 16).

3.2.3 World Heritage Convention Marine Programme

99 The World Heritage Convention focuses on natural and cultural properties of outstanding universal value for recognition as world heritage sites. Marine sites come within the scope of the Convention (see Part I, section 5.1.2). The Operational Guidelines for the Convention provide that listed sites may include property "representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals" (UNESCO, 2008b, para. 77).

Box III(2)-7: Convention on the Protection of the Underwater Cultural Heritage

In 2001, UNESCO concluded a new treaty, the Convention on the Protection of the Underwater Cultural Heritage. Following deposit of the 20th instrument of acceptance, the Convention entered into force in January 2009. This action was in response to provisions of UNCLOS which oblige States Parties to protect underwater cultural heritage under the term "archaeological and historical objects", but leaves international regulation regarding underwater cultural heritage to other forthcoming instruments. In 1996, member states of UNESCO resolved to develop a legally binding treaty which resulted in the Convention text adopted by the UNESCO General Conference in 2001.

The new Convention sets a high international standard for the protection of underwater heritage. The Convention consists of a comprehensive legal framework and protection regime providing appropriate legal, administrative and operational measures to be adopted by States Parties.

For countries that have already ratified the Convention, or intend to do so, the legal drafter should review its provisions as part of the process of formulating MPA legislation. The Convention defines 'underwater cultural heritage' to mean:

> all traces of human existence having a cultural, historical or archaeological character which have been partially or totally under water, periodically or continuously, for at least 100 years such as:
>
> (i) sites, structures, buildings, artefacts and human remains, *together with their archaeological and natural context*;
>
> (ii) vessels, aircraft, other vehicles or any part thereof, their cargo or other contents, *together with their archaeological and natural context*; and
>
> (iii) objects of prehistoric character (Art. 1; emphasis added).

The Convention text includes an annex that sets out 'Rules concerning activities directed at underwater cultural heritage'. Its main principles include an obligation of Parties to preserve underwater cultural heritage and take action according to their capabilities. It also considers in-situ conservation of underwater cultural heritage as the first and preferred option.

Source: Convention on the Protection of the Underwater Cultural Heritage (2001).

In recent years, the listing of marine sites has received increased attention because such areas have been significantly under-represented in the World Heritage List. Currently, of the 180 natural and 27 mixed sites worldwide, the World Heritage Marine Programme lists 43 marine sites (UNESCO, 2010b). The World Heritage Committee approved a World Heritage Marine Programme in 2005 to more aggressively promote the nomination of large-scale marine areas and MPA networks, including transboundary nominations (that is, nominated by more than one state). The action was intended to give increased attention to marine areas needing protection from such growing threats as overfishing, inappropriate fishing practices, coastal development and pollution. Nominations can only be within the EEZ. 100

These actions at the international level add further policy support for countries to establish and nominate MPAs of outstanding universal value as part of their responsibility under the Convention. The World Heritage Marine Programme's mission is "to establish effective conservation of existing and potential marine areas of Outstanding Universal Value" (UNESCO, 2010b). To achieve this, the Programme focuses on three key goals: (1) strengthen credibility of the World Heritage List, (2) strengthen the conservation of marine world heritage sites through capacity building, and (3) strengthen communications and outreach about the World Heritage Convention as an instrument for marine conservation. 101

Underwater cultural heritage. A new international treaty, the Convention on the Protection of the Underwater Cultural Heritage (2001), entered into force in 2009, largely as an international response to growing incidents worldwide of looting and destruction of underwater cultural heritage. Administered by the United Nations Educational, Scientific and Cultural Organisation (UNESCO), the Convention aims to strengthen protection and preservation in situ of underwater cultural heritage together with the natural site where such artefacts are located. A major mechanism for implementing this Convention is the MPA. Where a country has ratified the Convention or may do so in the future, it will be worthwhile for the legal drafter to become familiar with its provisions and to incorporate the relevant elements into the MPA legislation (see Box III(2)-7). 102

3.3 Regional agreements

This section highlights a number of important regional treaties and programmes specifically focused on MPAs, under which participating states assume commitments and obligations that need to be taken into account in national MPA networks and associated legislation. These instruments range from those that focus entirely on the creation of MPAs at the national or transboundary level, to others that trigger MPA obligations as part of a broader obligation to protect threatened habitats and species in both terrestrial and marine environments. 103

3.3.1 Regional Seas

The Regional Seas Programme was launched by the UNEP in 1974. The Programme has grown significantly over the years and has gained recognition for its efforts to guide and promote MPAs at the national and transboundary levels. The 1972 United Nations Conference on the Human Environment first recommended the regional seas concept. Since then, the Regional Seas Programme has resulted in the development of several regional action plans, legally binding agreements and protocols, as well as policy guidance on specific areas of environmental concern. 104

The Mediterranean became the first region to adopt an action plan in 1975, replaced by a revised plan in 1995. The region was also the first to adopt a convention to implement the action plan, entitled Convention for the Protection of the Mediterranean Sea Against Pollution (Barcelona Convention) 105

(1976), which entered into force in 1978. This Convention was revised in 1995 as the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, which came into force in 2004. This was followed by a series of protocols (legally binding agreements directly related to the main convention) in specific areas of environmental concern, and the creation of Regional Activity Centres responsible for implementation. The Mediterranean Regional Seas Programme set the pattern of development for regional seas programmes to follow.

106 Today the Regional Seas Programme covers 18 regions of the world. Thirteen of these programmes have been established under the auspices of UNEP, with more than 140 countries participating. These programmes are: Black Sea, Wider Caribbean, East Asian Seas, Eastern Africa, South Asian Seas, ROPME (Regional Organization for the Protection of the Marine Environment) Sea Area, Mediterranean, North-East Pacific, North-West Pacific, Red Sea and Gulf of Aden, South-East Pacific, Pacific, and Western Africa. In addition, five independent partner programmes for the regions of the Antarctic, Arctic, Baltic Sea, Caspian Sea and North-East Atlantic Regions are members of the Regional Seas family.

107 Of the 13 Programmes established under the auspices of UNEP, nine regions in addition to the Mediterranean region have developed legally binding conventions: Black Sea, East Africa, North-East Pacific, South Pacific, Red Sea and Gulf of Aden, ROPME Sea Area, South-East Pacific, Western Africa, and Wider Caribbean.

108 Most Regional Seas programmes with legally binding conventions have also adopted legally binding protocols under these conventions in various areas of special concern, including oil pollution, land-based pollution and protected areas. These protocols reflect the action-oriented commitments of countries to marine and coastal conservation through protected areas and other means that require national legislation for implementation. Protected areas legal frameworks in coastal and island states supported by such protocols should take into account and, as appropriate, incorporate the relevant principles, obligations and procedures of the Regional Seas protocols and any associated guidelines.

109 Among the UNEP-administered programmes, three have adopted protected area protocols: the Mediterranean, East African and Caribbean regions. (For further information, see the UNEP Regional Seas Programme website.)

110 The **Mediterranean** Regional Seas programme was the first to adopt a protocol for specially protected areas and is the only programme to date that has updated the original protocol. The first protocol that set the pattern for those to come was entitled Protocol Concerning Mediterranean Specially Protected Areas (1982), which came into force in 1986. That instrument was subsequently replaced by a new protocol, the Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean (SPA and Biodiversity Protocol) (1995), which came into force in 1999. The SPA and Biodiversity Protocol, adopted shortly after the CBD came into force, is the first protocol of the UNEP-administered programmes to incorporate the CBD definition of biological diversity. Continuing the pattern set by earlier protocols, the SPA and Biodiversity Protocol provides for the establishment of a list of specially protected areas of Mediterranean importance (SPAMI). It specifies that areas to be listed as specially protected must be areas of "importance for conserving the components of biological diversity in the Mediterranean [or areas that] contain ecosystems specific to the Mediterranean area or the habitats of endangered species" (Art. 8(2)).

111 Of special significance, the SPA and Biodiversity Protocol also provides for the possibility of protected areas in the high seas to be recognized. A portion of the Mediterranean Sea has the status of high seas because only a few of the 21 countries bordering the Mediterranean have declared EEZs under

UNCLOS. This means that the legal mechanisms countries have available for biodiversity protection in the Mediterranean in most cases extend only to the limits of their national territorial seas, a maximum of 12 nm seaward, leaving much of the Mediterranean Sea without the legal tools for biodiversity conservation that are available to states which have declared EEZs.

The SPA and Biodiversity Protocol recognizes this problem. It provides that areas listed as SPAMIs may include areas under the national jurisdiction of one Party, as well as areas established by two or more neighbouring Parties and situated "partly or wholly on the high sea" (Art. 9(2)). Fourteen countries and the European Community are Contracting Parties to this Protocol. A number of protected areas have been listed as SPAMIs under this Protocol, including the world's first trilaterally established MPA covering both national waters and the high seas, the Pelagos Sanctuary (see Box III(2)-8). 112

The **Eastern African** region was the second to adopt a protected areas protocol. The Protocol Concerning Protected Areas and Wild Fauna and Flora in the Eastern African Region (East African Protocol) (1989) came into force in 1996 and remains as originally concluded. Illustrative of the original legislative requirements laid down in this protocol and followed by most subsequent regional initiatives, the East African Protocol provides that Contracting Parties shall, where necessary, establish protected areas in areas under their jurisdiction with a view to safeguarding the natural resources of the Eastern African region and shall take all appropriate measures to protect these areas (Art. 8). 113

Box III(2)-8: The Mediterranean Pelagos Sanctuary—a high seas transboundary MPA

In 1999, France, Italy and Monaco signed the Agreement Concerning the Creation of a Marine Mammal Sanctuary in the Mediterranean. In 2001, Parties to the SPA and Biodiversity Protocol under the Barcelona Convention placed the Sanctuary on the SPAMI List, an essential step committing Parties to respect the protected status of the MPA, including its high seas portion. In 2002, the agreement, which became commonly known as the Pelagos Sanctuary Agreement, entered into force, thus providing the first and only example of a legally designated transnational high seas MPA. The Sanctuary waters include the Ligurian Sea and parts of the Corsican and Tyrrhenian Seas. The initiative, according to analysts, "set a precedent for the implementation of pelagic protected areas on the high seas" (Notarbartolo di Sciara et al., 2008).

The Pelagos Sanctuary encompasses over 87,500 sq km of internal, territorial and adjacent high seas waters between south-eastern France, Monaco, north-western Italy and northern Sardinia, and surrounding Corsica and the Tuscan Archipelago (see Figure A). Originally envisioned for the protection of endangered and endemic whales and dolphins, the sanctuary also provides protection to other species by the fact that they share the same ecosystem (for example, the Mediterranean devil ray, the basking shark and many species of large pelagic fish). Its design was defined primarily by natural, as contrasted with political, considerations, thus serving as an example of ecosystem-driven design for a transboundary MPA.

From a legal perspective, the Pelagos Sanctuary Agreement is a relatively straightforward transboundary MPA agreement. It prohibits the deliberate "taking" (defined as hunting, catching, killing or harassing) or disturbance of marine mammals, and obliges Contracting Parties to take measures to "ensure the favourable conservation status of marine mammals, by protecting both them and their habitat, from any negative direct or indirect impacts resulting from human activities." Such measures include regular assessments of population status and threats, phasing out toxic pollution in the sanctuary, monitoring, research and awareness building. To advance these commitments, France has established and is managing ecological protection zones within its national waters, and Italy has begun to take similar steps.

The Sanctuary Agreement's international reach is mainly in a provision reflecting the commitment of the three signatory states to invite other states or international organizations undertaking activities within the area to take similar protection measures. These measures are to take into account "the Action Plan adopted within the UNEP/MAP framework for the conservation of cetaceans in the Mediterranean and the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area, or any other pertinent treaty" (Art. 17).

▶

Figure A: The Pelagos Sanctuary

Source: Tethys Research Institute, undated.

As noted above, an important step was taken towards regional and international recognition of the sanctuary in 2001 when it was listed as a SPAMI under the SPA and Biodiversity Protocol. That action moved the legal commitment beyond the three signatory states and their national waters to all Contracting Parties to the Protocol. Until the current management plan adopted in 2007 becomes operational, management is being undertaken on the basis of implementation decisions by Conferences of the Parties.

There are signs of progress with recognition of the sanctuary. The Italian navy decided to refrain from conducting naval exercises (involving the use of ordnance or sonar) in the sanctuary area, and the Italian Ministry of the Environment discontinued the discharge in sanctuary waters of toxic mud dredged from the area's harbours. Implementing Agreement prohibitions on offshore high-speed motor races, and the adoption of rules and codes of conduct for whale watching, have helped improve the habitat and safe movement of species. Participating countries have begun to designate funds specifically for marine conservation. Efforts are underway to have the sanctuary designated as a PSSA under IMO, and as a world heritage site under the World Heritage Convention, in order to further extend recognition and protection with respect to the Mediterranean operations of all countries.

According to experts, the sanctuary, if successful over the long term, will emerge as a demonstration model for large-scale, ecosystem-based high seas MPAs, the utility of regional seas agreements, the use of species as 'umbrellas' to protect whole ecological communities, and the role of individuals in carrying forward a conservation vision (Notarbartolo di Sciara et al., 2007).

For further information, see the Sanctuary Agreement.

Contributed by Tanya Baycheva.

114 The East African Protocol is explicit about the kinds of legislative protections that may be required in national legislation. Article 10 (Protective Measures) calls for the Contracting Parties to take measures

required to achieve the objectives of a designated protected area consistent with its characteristics, including prohibitions and regulations on the dumping of waste, the use of pleasure craft, fishing and hunting, capture of animals and harvesting of plants, any activity involving exploration or exploitation of the seabed or subsoil, any archaeological activity, the removal of any object, and any other measures to safeguard ecological and biological processes in protected areas.

The **Wider Caribbean** is the third Regional Seas Programme among those administered by UNEP to have adopted a protected areas protocol. The Protocol Concerning Specially Protected Areas and Wildlife to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (1990) came into force in 2000. Parties have a general obligation to "take necessary measures to protect, preserve and manage in a sustainable way areas that require protection to safeguard their special value, and threatened or endangered species of flora and fauna" (Art. 3). To that end, Parties are to establish protected areas "with a view to sustaining the natural resources of the Wider Caribbean Region, and encouraging ecologically sound and appropriate use, understanding and enjoyment of these areas, in accordance with the objectives and characteristics of each" (Art. 4). Lists of protected areas are to be compiled based on criteria and guidelines developed by the Contracting Parties. Buffer zones, regulating the introduction of non-indigenous species, and EIA concepts also are recognized. 115

The Caribbean Protocol enumerates criteria to be used in establishing protected areas. Parties are to select sites to conserve, maintain and restore, in particular: 116

- representative types of coastal and marine ecosystems of adequate size to ensure their long-term viability and to maintain biological and genetic diversity;
- habitats and their associated ecosystems critical to the survival and recovery of endangered, threatened or endemic species of flora or fauna;
- the productivity of ecosystems and natural resources that provide economic or social benefits and upon which the welfare of local inhabitants is dependent; and
- areas of special biological, ecological, educational, scientific, historic, cultural, recreational, archaeological, aesthetic or economic value, including particular areas whose ecological and biological processes are essential to the functioning of the Wider Caribbean ecosystems (Art. 4(2)).

Legal drafters in the Black Sea region may want to research a new protocol on protected areas that has been adopted by that Regional Seas Programme. Entitled the Biodiversity and Landscape Conservation Protocol to the Convention on the Protection of the Black Sea Against Pollution, this instrument was signed in Sofia, Bulgaria, in 2002, and has not yet come into force. 117

3.3.2 OSPAR Convention

The Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention) was concluded in 1992. The OSPAR Convention is the mechanism by which 15 states of the western coasts and catchments of Europe, together with the European Community, cooperate to protect the marine environment of the North-East Atlantic. The 15 states are Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the UK. A representative of each comprises the OSPAR Commission, the decision-making body of the Contracting Parties, which meets annually. 118

Annex V of the Convention addresses the 'Protection and Conservation of the Ecosystems and Biological Diversity of the Maritime Area.' Article 3(1)(b)(ii) makes it a duty of the Commission to "develop means, 119

consistent with international law, for instituting protective, conservation, restorative or precautionary measures related to specific areas or sites or related to particular species or habitats." Contracting Parties report annually on progress with sites and site selection. A selected site requires a management plan prepared in accordance with OSPAR Convention guidelines.

120 In 1998, OSPAR Ministers agreed to promote the establishment of a network of MPAs and in 2003 they adopted a recommendation which set the target of 2010 for establishing in the OSPAR region a joint network of well-managed MPAs that, together with the Natura 2000 network, would be ecologically coherent (OSPAR 2003/03).

121 By 2007, most OSPAR-nominated sites were Natura 2000 sites. Slow progress in developing distinct OSPAR sites prompted the OSPAR Commission at its 2007 meeting to endorse a recommendation that "Contracting Parties should begin the process of identifying and selecting sites beyond existing Natura 2000 areas" (OSPAR Commission, 2008, p. 5). The vast majority of sites were also within the territorial waters of the Contracting Parties. Further recommendations encouraged the development of OSPAR MPAs in deepwater areas, including the high seas. In such areas, especially, the OSPAR network could have the important role of helping build connectivity conservation areas at the transnational level between national MPA networks (see Box III(2)-9).

Box III(2)-9: OSPAR and transnational MPA networks

The OSPAR maritime area includes the internal waters, territorial seas and EEZs of the Contracting Parties, as well as a portion of the high seas. The area is defined in the Convention to comprise the North-East Atlantic extending westward to the east coast of Greenland, eastward to the continental North Sea coast, south to the Straits of Gibraltar and northward to the North Pole. The area includes the seabed and subsoil and covers approximately 13.5 million sq km, or about 4 per cent of the surface area of the earth's oceans. As such, this instrument has significant potential to promote MPAs on a regional and transnational scale.

Guidelines under the Convention provide criteria and a process for Contracting Parties to follow to determine if sites justify selection as MPAs under the OSPAR Convention. Ecological as well as practical factors (legal, political, feasibility of implementation) are to be taken into account, in addition to how the MPA would advance OSPAR network objectives. These objectives are: (1) protect, conserve and restore species, habitats and ecological processes that are adversely affected as a result of human activities; (2) prevent degradation of and damage to species, habitats and ecological processes, following the precautionary principle; and (3) protect and conserve areas that best represent the range of species, habitats and ecological processes in the OSPAR maritime area.

The OSPAR Convention area encompasses marine areas beyond national jurisdiction. In that regard, the OSPAR Commission has agreed to consider proposals from Contracting Parties and observers on possible components of the OSPAR network of MPAs in areas of the North-East Atlantic outside the jurisdiction of the Contracting Parties, and where appropriate consider with other authorities how such areas could be protected. Such considerations have the potential for transnational MPAs involving marine areas both within and beyond national jurisdiction. Reiterating the importance of protecting deep waters, the OSPAR Commission emphasizes that "sites further offshore and especially in the Contracting Parties' EEZs should be selected" (OSPAR Commission, 2008, p. 5). In 2008, the OSPAR Commission agreed to undertake further work to establish an OSPAR MPA for the Charlie Gibbs Fracture Zone on the Mid-Atlantic Ridge. OSPAR continues to assess other areas beyond national jurisdiction to determine if they justify protection under the Convention.

For further information, see OSPAR Commission website.

Contributed by Gordon McGuire.

3.3.3 Helsinki Convention and OSPAR Convention

122 The Convention on the Protection of the Marine Environment of the Baltic Sea Area (Helsinki Convention) (1992) came into force in 2000, with amendments that came into force in 2008. The Helsinki Commission (HELCOM) is the governing body of the Convention. The Contracting Parties to the Convention are Denmark, Estonia, the European Community, Finland, Germany, Latvia, Lithuania, Poland, Russia and

Sweden. The main aim of the Convention is to "prevent and eliminate pollution in order to promote the ecological restoration of the Baltic Sea Area and the preservation of its ecological balance" (Art. 3).

In 2003, HELCOM on behalf of the Baltic Sea Convention and the OSPAR Commission on behalf of the OSPAR Convention concluded a joint work programme on MPAs. This programme links the MPAs of both conventions in an effort to ensure ecological coherence, and to develop the common theoretical and practical aspects of what would constitute a joint network. The programme includes developing guidance on the application of each agreement in this context. Legal drafters in countries to which the Helsinki Convention applies will also want to review the guidance being generated by these two Commissions for elements that may be important to incorporate in marine provisions of protected areas legislation. 123

3.3.4 ACCOBAMS

The Agreement on the Conservation of Cetaceans in the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS) (1996) is a regional agreement which was adopted within the framework of the Convention on the Conservation of Migratory Species of Wild Animals (CMS) (1979). The purpose of the agreement is to reduce threats to cetaceans in the Mediterranean, Black Sea waters and a contiguous Atlantic area, and to improve knowledge about these animals. ACCOBAMS provides for the use of MPAs as a tool to achieve its purposes. 124

Article II (Purpose and Conservation Measures) provides: 125

> 1. Parties shall take co-ordinated measures to achieve and maintain a favourable conservation status for cetaceans. To this end, Parties shall prohibit and take all necessary measures to eliminate, where this is not already done, any deliberate taking of cetaceans and shall co-operate to create and maintain a network of specially protected areas to conserve cetaceans.

The Annex 2 (Conservation Plan) provides further guidance on the actions Parties are to take to achieve the objectives of ACCOBAMS. These include adopting appropriate national legislation and establishing MPAs within the framework of other appropriate regional legal frameworks: 126

> The Parties shall undertake, to the maximum extent of their economic, technical, and scientific capacities, the following measures for the conservation of cetaceans, giving priority to conserving those species or populations identified by the Scientific Committee as having the least favourable conservation status, and to undertaking research in areas or for species for which there is a paucity of data. […]
>
> Parties shall endeavour to establish and manage specially protected areas for cetaceans corresponding to the areas which serve as habitats of cetaceans and/or which provide important food resources for them. Such specially protected areas should be established within the framework of the Convention for the Protection of the Mediterranean Sea against Pollution, 1976, and its relevant protocol, or within the framework of other appropriate instruments.

3.3.5 Natura 2000

The European Union (EU) Birds Directive (1979, as amended in 2009) and Habitats Directive (1992), which generated the Natura 2000 legal framework, require Member States to establish special protection areas for birds and special areas of conservation (SACs) for other species in order to maintain or restore to a favourable conservation status natural habitat types and habitats of species of Community interest (see Part I, section 5.3). In 2005, the European Court of Justice issued a judgment to the effect that these Directives, and especially the Habitats Directive, are applicable and must be implemented in a Member State's EEZ (Case C-6/04, ECJ, 20 October 2005). In other words, the Court found that Member States are obliged to designate SACs under the Habitats Directive in their EEZs and to provide species protection in that zone as laid down in the Directive. 127

128 As a result, in 2007 the Commission of the European Communities issued guidelines on how to implement the Directives with respect to the EEZ. The 'Guidelines for the establishment of the Natura 2000 network in the marine environment' (European Commission, 2007), include discussion of different marine zones, legal aspects for implementing environmental legislation in the marine environment, marine habitat types, and how to locate and select marine Natura 2000 sites.

129 Legal drafters in EU Member States should be familiar with these guidelines as background to formulating legal provisions for designating MPAs out to their EEZs in order to be in compliance with these Directives.

4 Incorporating marine principles in legislation

130 Today it is generally accepted by scientists, managers and policy makers alike that MPAs require special legal consideration to address their unique features. Countries are increasingly enacting legislation that is more responsive to the needs and challenges of marine ecosystems management. Legislative approaches vary, from integrating marine provisions into principal protected areas legislation as a separate chapter or part, to enacting distinct legislation for the MPA system or specific sites, or some combination. The legislative approach appropriate for a particular country should be responsive to its international obligations, the scientific and management needs of the current and envisioned MPA system, and the existing policy framework and institutional capacity. Regardless of the legislative approach, in order for a country to most effectively meet its national and global commitments to biodiversity conservation, MPAs should be planned, established and managed as part of the formal system of protected areas.

131 Several generic legal elements specific to marine and coastal protected areas are discussed below. These should be considered by the legal drafter in conjunction with companion sections in Part III, Chapter 1.

4.1 Legal drafting preparations

132 **Legal and institutional inventory and analysis**. A preliminary task for the legal drafter is to undertake a legal and institutional inventory and analysis of relevant law and policy (see Part III, Chapter 1, section 1). Where countries have coastal and marine zones, the considerations discussed in that section apply to MPAs as well as to terrestrial protected areas. In addition, a few points specifically related to the marine focus of protected areas legislation are worth highlighting here.

133 At the policy level, a number of decisions will be important for guiding the scope and content of marine provisions to ensure that they are supportive not only for current needs but also for the future. In many countries the development of MPAs has lagged behind that of terrestrial protected areas (a global phenomenon as discussed in the introduction to this chapter). This means that the potential and need for growth to meet national MPA targets is likely to be high.

134 It is important for MPA legislation to be guided by the desired conservation objectives and configuration of sites, and not solely by the needs of existing sites or by the purpose of maintaining the status quo. This is particularly relevant for countries in the early stages of MPA network building. The legislation should be designed to accommodate the full range of MPA categories envisioned for the network, provide for adequate institutional powers and responsibilities to effectively manage this network, and allow for recognition of new governance approaches that might be available. Policy makers and

protected area authorities should provide early input to the legal drafter on the vision, mission, goals and objectives for the current and planned MPA network that the legislation is intended to support.

Specific legal questions. Following good legal practice, the legal drafter should identify and review existing statutes, regulations, subsidiary legislation, judgments, and customary and traditional practices or rights which have been legally recognized. 135

The scope of such an analysis should be guided by the needs of existing MPAs and the nature and range of additional needs as the MPA network is further developed in the country or jurisdiction. That information, as far as possible, should be provided by the relevant protected areas authority, or developed jointly by the legal drafter and protected areas authority. As part of the pre-drafting preparations, the legal drafter requires certain basic scientific and technical information, such as: 136

(a) overall MPA network envisioned for marine and coastal protected areas, and anticipated strategy for building the network (to the extent known);

(b) overall marine biodiversity goals and objectives of the MPA network, and how these fit in the formal protected areas system;

(c) ecosystem types and natural features that are likely to be represented in the network, including coastal areas, near-shore and deepwater marine areas, the seabed and water column, and islands and archipelagos;

(d) large MPAs, envisioned or existing, with multiple objectives that may require zoning, either through a management plan or by legally defined categories;

(e) anticipated institutional arrangements, including the full range of governance approaches, that may exist or have potential, for managing sites in the MPA network;

(f) any proposed sites that need urgent protection on an interim or temporary basis until they are legally established under existing or new legislation;

(g) any proposed large, multi-purpose MPAs with special features justifying site-specific legislation;

(h) customary or traditional rights, practices, privileges or uses that need to be addressed;

(i) new categories of stakeholders—for example, industrial fishing fleets (domestic or foreign), ports authorities, maritime shipping, international navigation interests, marine tourism companies and tour operators (domestic or foreign), bioprospecting companies, underwater cultural heritage interests—that should be recognized in legal provisions with respect to participation and involvement in management.

Configuration of legal framework. As with general protected areas legislation, the legal framework for MPAs may take one of three approaches: (1) umbrella provisions for the MPA network or system overall, with authority to designate specific sites within that framework; (2) specific legislation for each area or group of areas; or (3) some combination of these two approaches. Whatever approach is selected, it should be linked to the overall protected areas legal framework, and be guided by the nature of the sites to be protected, the state of existing sites, and the strategy and objectives for declaring future sites for an MPA network. Umbrella provisions for MPAs could be incorporated within principal protected areas legislation, and still be distinctly identified, by devoting separate chapters or parts of the legislation to legal elements specific to MPAs. In such cases, schedules to principal legislation listing protected areas declared under the law should include MPAs and may also reference MPAs with separate legislation. 137

Typically, MPA legislation has taken the umbrella approach. Some well-known sites, however, have been created with their own legislation because of the large and distinctive ecosystem being protected. 138

This is the case, for example, with the Great Barrier Reef Marine Park in Australia, created in 1975 through site-specific legislation with provisions for a separate institutional structure, the Great Barrier Reef Marine Park Authority, as well as management planning and zoning, monitoring, and stakeholder participatory mechanisms specifically for that site. Another large MPA, the Florida Keys National Marine Sanctuary in the US, was designated in 1990 by an Act of the US Congress, the Florida Keys National Marine Sanctuary and Protection Act 1990 (Pub. L. No. 101-605, 104 Stat. 3089), with management planning and zoning, institutional arrangements, and stakeholder participation mechanisms tailored to the specific needs of that area.

4.2 Preliminaries

4.2.1 Marine and oceans policy

139 Ideally, there will be an explicit national or sub-national marine and oceans policy declared by the government or otherwise provided, for example, in the constitution. As with protected areas policy overall, marine and oceans policy may also be reflected in policy reports of a general nature (such as sustainable development strategies) or more targeted nature (such as national biodiversity strategies). National marine and oceans policy may also be grounded in or draw from obligations under international or regional conventions to which the country is a Party, or from international policy instruments, such as Agenda 21 or the World Summit on Sustainable Development (WSSD) Plan of Implementation.

140 Subject to legal practice, it is worthwhile for MPA legislation to include a provision early in the text referencing existing marine and oceans policy the legislation aims to implement. Such a reference helps policy makers, officials and stakeholders appreciate the policy basis for the law. The reference may be in the law's long title or preamble, or in a distinct provision. Alternatively, introductory or background documents containing this information could accompany the draft legislation through the technical and policy review process. As with protected areas legislation in general, where a marine and oceans policy does not exist, a policy provision may be added to the legislation to provide a clear foundation for the law once enacted.

141 For policy concepts or policy language that could be incorporated in MPA provisions, the legal drafter may want to review the goal for work under the CBD relating to marine and coastal protected areas that is set out in CBD Programme of Work on Marine and Coastal Biodiversity:

> 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 (CBD COP 2004 VII/5, para. 18).

142 Policies on marine and coastal protected areas could emphasize general goals such as the following:

(a) establish and maintain a network of marine and coastal protected areas that is comprehensive and representative for the purpose of conserving the full range of marine habitats and ecosystems, giving priority protection to those which are rare or unique;

(b) advance through national action the worldwide network of marine and coastal protected areas;

(c) promote regional cooperation on shared marine resources and important marine ecosystems (for example, coral reefs, deep sea vents);

(d) provide for the continued social and economic well-being of people affected by the creation of marine and coastal protected areas;

(e) promote the use of a wide range of governance approaches for the management of MPAs.

4.2.2 Definitions

Some definitions in addition to those provided in Part I are important to review specifically in the context of legal provisions for MPAs. 143

Marine protected area. Guidance is available from different sources to aid the legal drafter working with protected area authorities in drafting a definition for MPAs appropriate to the needs of the country or jurisdiction involved. Three major sources are noted below (IUCN, CBD, and the EU through Natura 2000), and all provide valuable and complementarily insights. These protected areas legislation guidelines use the IUCN definition. 144

IUCN definition. As discussed in Part I, IUCN-WCPA issued guidelines for applying protected area management categories in 2008 (Dudley, 2008) which followed from the guidelines issued in 1994 (IUCN, 1994). The 2008 IUCN-WCPA guidelines include a generic definition applicable to all protected areas, whether terrestrial or marine. The 2008 definition is now the operational definition used by IUCN-WCPA, and is promoted and used by IUCN in its work on protected areas, including MPAs. It reads as follows: 145

> A protected area is a clearly defined geographical space recognized, dedicated and managed, through legal and other effective means, to achieve the long term conservation of nature with associated ecosystem services and cultural values.

In addition, in 1988 IUCN members adopted a definition specifically tailored to MPAs (IUCN GA 1988 17.38) which has been used in IUCN MPA management guidelines and in many publications, as follows: 146

> Any area of 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 (Kelleher, 1999).

The 2008 IUCN-WCPA definition of protected areas is useful for MPAs for a number of reasons. Most marine professionals in IUCN-WCPA support its application in order to bring MPAs more in line with other protected areas. A common definition across all protected area types is expected to avoid potential confusion where protected area systems include MPAs or where a particular protected area includes both terrestrial and marine components. In addition, it is generally felt that the 2008 IUCN-WCPA definition could provide a clearer demarcation between conservation-focused marine sites which would qualify as protected areas and those where the primary purpose is extractive use, in other words, fisheries management areas, which would not qualify. 147

According to the 2008 IUCN-WCPA guidelines, the protected areas definition as applied to MPAs does not preclude the inclusion of relevant fishery protection zones but their primary objectives need to be consistent with the IUCN definition to be recognized as an MPA by IUCN-WCPA (Dudley 2008, p. 56). In addition, the definition may be applied to MPAs across the range of protected area categories, from strict protection to multiple use (equivalent to IUCN categories I–VI). This allows for MPAs or zones within MPAs to have sustainable use objectives, as long as consistent with the primary conservation objectives, and still be recognized as part of the formal protected areas system. Importantly, this approach recognizes that not all MPAs must be no-take areas. IUCN intends to produce more detailed guidance on use of the protected area management categories in marine systems. 148

149 In practice, countries may use the IUCN definitions in their legal frameworks or develop variations based on other guidelines that best meet their needs. Countries may also use their own terminology for MPAs, for example, marine parks, marine reserves, marine sanctuaries or marine conservation areas. As with terrestrial sites, use of the IUCN numerical classification system (categories I–VI) provides a common framework for international reporting and the compilation of data by management category regardless of the local terminology used.

150 **CBD definition**. The CBD has also developed a definition for marine and coastal protected areas which was adopted in 2004 as part of the Programme of Work on Marine and Coastal Biological Diversity. The definition, which is intended to apply to all IUCN protected area management categories, is as follows:

> (a) 'Marine and coastal protected area' means any defined area within or adjacent to the marine environment, together with its overlying waters and associated flora, fauna and historical and cultural features, which has been reserved by legislation or other effective means, including custom, with the effect that its marine and/or coastal biodiversity enjoys a higher level of protection [than its] surroundings.
>
> (b) Areas within the marine environment include permanent shallow marine waters; sea bays; straits; lagoons; estuaries; subtidal aquatic beds (kelp beds, seagrass beds; tropical marine meadows); coral reefs; intertidal muds; sand or salt flats and marshes; deep-water coral reefs; deep-water vents; and open ocean habitats (CBD COP 2004 VII/5, fn. 1).

151 **European Union**. The EU has developed MPA guidelines to be used by its 27 Member States in relation to the Natura 2000 network (discussed in Part I, section 5.3). These apply to the Habitats Directive for the purposes of designating SACs. The guidelines define 'marine habitat types' to include: sandbanks slightly covered by sea water all the time, posidonia beds, estuaries, mudflats and sandflats not covered by seawater at low tide, coastal lagoons, large shallow inlets and bays, reefs, submarine structures made by leading gases, submerged or partially submerged sea caves (Natura 2000 Guidelines, Chapter 3, para. 3.1).

152 **Network of MPAs**. At the international level, the concept of a global network of marine and coastal protected areas has emerged as an important concept for meeting marine biodiversity conservation goals. The network approach has gained significant attention at the country level because it is recognized that marine conservation necessarily starts with national and regional networks using the ecosystem approach. IUCN-WCPA defines a marine and coastal protected areas network as follows:

> A collection of individual marine protected areas operating cooperatively and synergistically, at various spatial scales, and with a range of protection levels, in order to fulfil ecological aims more effectively and comprehensively than individual sites could alone. The network will also display social and economic benefits, though the latter may only become fully developed over long time frames as ecosystems recover. […] Representative networks of MPAs [are] those that contain examples of all habitats and ecological communities of a given area (IUCN-WCPA, 2007a, p. 3).

153 Parties to the CBD have elaborated on the concept of a global marine and coastal protected areas network in the Programme of Work on Marine and Coastal Biodiversity (see Box III(2)-6, above) and how it would function:

> A global network provides for the connections between Parties, with the collaboration of others, for the exchange of ideas and experiences, scientific and technical cooperation, capacity building and cooperative action that mutually support national and regional systems of protected areas which collectively contribute to the achievement of the programme of work. This network has no authority or mandate over national or regional systems (CBD COP 2004 VII/5, fn. 2).

154 **Coastal (near-shore) versus deepwater (offshore) marine areas**. The development of protected areas in coastal zones may involve different considerations from the development of protected areas in deepwater marine environments. These include the composition of stakeholder groups involved (for example, local communities and indigenous peoples may have interests closer to the coastal zone while domestic and foreign industrial fishing fleets have interests in deep waters of the EEZ). The level of scientific understanding, available data and ecological knowledge are likely to be different, and

deepwater environments may be less well known or studied in comparison with near-shore coastal wetlands, estuaries, mangroves, seagrass beds or coral reefs. Management capacity and the necessary equipment will also differ, along with compliance and enforcement approaches.

Coastal or near-coastal environments typically face different threats as well (for example, land-based sources of pollution, nutrient run-off, sedimentation, coastal development, near-shore overfishing or unsustainable tourism). Deepwater environments may be more exposed to unregulated or illegal industrial fishing, or to oil prospecting, mining, bioprospecting, and the dumping of ship waste. Coastal environments also experience different biophysical impacts (for example, higher temperatures and salinity fluctuations, more nutrients for species growth and reproduction). 155

In legal provisions for MPAs, it is advisable to define the marine zones for the purposes of establishing MPAs. It may be useful to distinguish between coastal and deepwater zones where these zones present different jurisdictional considerations and design, management and enforcement needs. The approach of some countries, for example, New Zealand, is to use the limit of the territorial sea as the boundary between coastal and deepwater marine areas (see New Zealand Ministry of Fisheries and Department of Conservation, 2008). Using that approach, one could consider the following characterization as a way to differentiate coastal and deepwater zones for legislative purposes: 156

- **Coastal (near-shore) marine area** refers to estuaries, tidal reaches, mouths of coastal rivers, coastal lagoons, the open coast, and the seabed and water column of the sea, out to the limit of the territorial sea (or to a specified depth seaward, for example, 200 m, whichever is greater).
- **Deepwater (offshore) marine area** refers to the seabed and water column habitats and ecosystems beyond the limit of the territorial sea.

Marine area under national jurisdiction. In countries that have declared an EEZ in accordance with international law, it is important for MPA legislation to define the marine area within which MPAs may be created as extending to the limit of the declared EEZ. Similarly, where a country's continental shelf extends beyond the EEZ and has been so recognized under international law, MPA legal provisions may further take this extended limit for the purposes of establishing MPAs on the seabed or subsoil (see section 3.1.1, paragraphs 61–65, above). 157

4.3 Objectives of MPA networks and sites

In 2002, the WSSD adopted a Plan of Implementation that paid special attention to marine life and ecosystems because of growing concerns about degradation across the planet. It called for the conservation and management of the oceans through action at all levels, and in particular for maintenance of "the productivity and biodiversity of important and vulnerable marine and coastal areas, including areas within and beyond national jurisdiction" (UN, 2002, para. 32(a)). The Plan of Implementation set out several specific objectives as well as a target for action: 158

> 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 (UN, 2002, para. 32(c)).

The Vth IUCN World Parks Congress (WPC) in 2003 followed with a further target, recommending that marine and coastal protected area networks be extensive and include strictly protected areas amounting to at least 20–30 per cent of each coastal and marine habitat (IUCN-WPC 2003 V.22). Soon thereafter, Parties to the CBD adopted the updated and elaborated Programme of Work on Marine 159

and Coastal Biological Diversity. This Programme of Work continued the call for "integrated networks of marine and coastal protected areas" and adopted the 2012 target for building marine and coastal protected area networks comprised of representative areas where extractive uses might be allowed as long as managed for sustainable use, and other representative areas where extractive uses would be excluded "to enable the integrity, structure and functioning of ecosystems to be maintained or recovered" (CBD COP 2004 VII/5, operational objective 3.1).

160 Most significantly, the CBD Programme of Work stresses the need for effective legal and institutional measures to support such actions. It calls upon all Parties to:

> achieve effective management of marine and coastal protected areas through good governance, clear legal and customary frameworks to prevent damaging activities, effective compliance and enforcement, ability to control external activities that affect the marine and coastal protected areas, strategic planning, capacity building and sustainable financing (CBD COP 2004 VII/5, operational objective 3.3).

161 **Objectives for legislation**. As with terrestrial protected areas, legal provisions on the objectives of the marine and coastal protected areas network and individual sites help guide decision making on establishment, management and monitoring, and the control of activities within the network or in specific sites. Objectives become the baseline by which to assess the performance and effectiveness of decisions taken and approaches used. International recommendations, including those from IUCN Congresses and CBD Conferences of the Parties, provide useful language for the legal drafter when formulating provisions on objectives for a marine and coastal protected areas network. Several examples are offered below to illustrate how concepts can be emphasized, mixed or combined, depending on what is most appropriate for the situation. General provisions include the following:

(a) Protect substantial examples of representative and ecologically important marine and coastal ecosystems to ensure their long-term viability and to maintain their biological diversity;

(b) Conserve marine biodiversity, including marine genetic diversity, and sites high in marine genetic diversity in order to prevent genetic impoverishment of marine species;

(c) Establish and support a network of marine and coastal protected areas using the ecosystem approach and principles of integrated marine and coastal resource management, including connectivity conservation measures, to sustain the conservation objectives of the network and individual sites;

(d) Protect key ecological functions and processes, such as upwellings, which are important for bringing deeper, colder, nutrient-rich waters to the surface, influencing food web dynamics and the productivity of marine areas;

(e) Protect and restore depleted, threatened, rare or endangered marine species and populations and, in particular, preserve habitats considered critical for the survival of such species;

(f) Provide buffers to mitigate the effects of accidental impacts or unfavourable or changed environmental conditions, and to prevent outside activities from detrimentally affecting marine and coastal protected areas;

(g) Serve as carbon sinks by absorbing the increasing amount of carbon dioxide being emitted into the atmosphere;

(h) Serve as sites to provide a baseline for climate change impacts and build resilience and adaptation to help species and ecosystems overcome negative impacts;

(i) Implement obligations under international agreements and programmes;

(j) Serve as reference and monitoring sites for understanding the environmental effects of human activities, including the direct and indirect effects of development and adjacent land and marine use practices;

(k) Provide educational and recreational opportunities for the public to appreciate and experience marine natural and cultural heritage;

(l) Provide for scientific research, training and education;

(m) Preserve, protect and manage historic, cultural and sacred sites and the natural aesthetic values of marine and coastal areas for present and future generations;

(n) Recognize and help protect and maintain traditional conservation practices and institutions of indigenous peoples and local communities where beneficial to the overall conservation objectives of the network;

(o) Ensure the continuation of customary and traditional activities by indigenous or other traditional, aboriginal or tribal groups;

(p) Accommodate within appropriate management regimes, including through zoning, a broad spectrum of human activities compatible with the primary conservation goals of marine and coastal protected areas;

(q) Recognize and use the full range of governance approaches, as feasible and available, for managing specific sites or zones within sites, in accordance with the purposes for which the site or zone was designated.

Site-specific objectives are also important to clearly identify for individual sites. Best practice management principles suggest that marine and coastal protected areas should be designed to simultaneously accomplish as many conservation objectives as possible (Salm et al., 2000, p. 15). Multiple objectives may be applied to a single site or to interconnected sites. Many of the network objectives noted above could also apply to specific sites. Further examples of site-specific objectives are as follows: 162

(a) Protect or restore a specific scientifically important ecosystem or ecosystems, including coral reefs, seagrass beds, deep seabed vents or other biodiversity hot spots; spawning, nesting or feeding grounds for important marine species; or critical habitats for rare, threatened or endangered marine species and the ecosystems on which they depend;

(b) Protect specific estuaries, wetlands and lagoons as feeding grounds for wildlife, habitat for endangered and threatened species, recreation, and maintenance of natural processes;

(c) Provide educational opportunities to help the public and users understand the importance of marine and coastal protected areas for biodiversity conservation and economic benefits such as ensuring sustainable tourism;

(d) Provide conservation connectivity between specified core areas to ensure the integrity of those protected sites and their species and ecosystems;

(e) Protect sites of international importance, for example, Ramsar wetlands, world heritage marine sites, as well as PSSAs and special areas under the IMO.

4.4 Strategic planning for the MPA network

The idea of building networks of marine and coastal protected areas gained scientific attention in the 1990s, as a conceptual approach to managing marine species and ecosystems that could accommodate their special dynamic and three-dimensional features. This concept provided a framework within which MPA professionals could develop a subset of principles and goals specifically for marine and coastal protected areas as part of the larger national or regional system of protected areas. The concept of marine and coastal protected area networks continued to be developed into the 2000s and was firmly grounded in international policy by 2002 with the WSSD call for representative networks of MPAs worldwide by 2012. 163

164 Part I discusses the importance of developing an overall system plan for the selection and management of all protected areas, and Part III, Chapter 1, recognizes the system plan as a required element of general protected areas legislation. In the marine environment, where scientific development and site designation are much less advanced, a strategy for building the marine and coastal protected areas network as part of the overall protected areas system is equally important. This is a new long-range planning tool being increasingly recognized for MPA planning, establishment and management.

165 A strategic plan is important for countries that are in the preliminary stages of designating marine and coastal protected areas as well as for countries which may have a well-established network. Strategic planning helps ensure that the most important representative sites are identified, that resources are allocated to the most high-value sites over the near and long term, and that institutional capacity is developed in a systematic way as part of MPA network building and maintenance.

166 **Provision on strategic planning**. It is important for the legal drafter working with the relevant protected area authorities to consider including a legal provision calling for development and regular updating of a strategic plan for the marine and coastal protected areas network.

167 The provision could indicate that the purpose of the strategic plan is to advance the overall objectives of effectively managing existing marine and coastal areas and establishing new areas in a systematic and incremental way to be part of the network. The strategic plan should incorporate, as relevant, existing areas, areas of high priority for designation in the near term, other areas of high priority needing additional time for study and consultation, and areas for possible consideration in the future as new data and scientific analysis become available (these later aspects may be particularly relevant for deepwater marine areas). A strategic plan should also incorporate governance considerations and recognize, where relevant, the variety of governance approaches or types that may be available to maximize the conservation objectives of the network.

168 It should be stressed, however, that strategic plans should not be used to exclude opportunities for MPA establishment (Kelleher, 1999, p. 40). While it is important to include in the legislation a provision for strategic planning, the provision should make it clear that the exclusion of a new or expanded high-value site from a strategic plan should not preclude it from being established should the opportunity arise.

4.5 Institutional arrangements

169 Building on the generic elements for protected areas legislation discussed in Part III, Chapter 1, two institutional issues related to marine and coastal protected areas are worth highlighting: (1) clear designation of powers and responsibilities to marine and coastal protected area authorities, particularly where multiple jurisdictions may be involved; and (2) coordination and collaboration mechanisms to accommodate the wide range of institutional interests potentially involved and account for special management challenges, including transboundary issues. These considerations are briefly discussed here in the context of MPAs.

170 **Lead MPA authority**. A high policy-level body is normally designated with overall responsibility for the network of marine and coastal protected areas, as well as for specific sites with separate legislation, just as with terrestrial areas. This body is typically the minister in charge of the overall protected areas system of which the marine and coastal protected areas network and its sites are a part.

171 MPA legal provisions should identify the specialized government agency or other lead technical authority responsible for implementing the legislation at the national level and managing the MPA network. In

many countries, this will be the national agency designated with overall responsibility for the protected areas system. In many other countries there will already be a coastal or marine authority which could assume responsibility for marine and coastal protected areas, thereby avoiding the creation of new marine authority or the need to add marine responsibilities to an existing protected areas authority with primarily responsibility for terrestrial areas. Where the terrestrial and marine protected areas agencies are different, creation or designation of a coordinating body, such as a commission or oversight board, should be considered with responsibility for integrating policy and programme implementation for the protected areas system, including marine and coastal protected areas, and sites that may have separate legislation.

In federal states or decentralized forms of government, there may be parallel entities with responsibilities at the provincial or state level, or special negotiated arrangements for collaborative management between central and provincial levels of government. This latter approach was used, for example, with the Great Australian Bight Marine Park, which was collaboratively established in the late 1990s by a legal arrangement between the federal and state governments (see Box III(2)-4). 172

At the management level, as with terrestrial sites, multiple MPA sites may be governed by a single protected areas authority, particularly where there are few sites located in relatively close proximity. Alternatively, some or all individual sites in the network may have specially designated management authorities that share areas or are in charge of a single site. In countries where the marine jurisdiction extends to the EEZ, it may be necessary to designate different management authorities as a matter of practicality, particularly where sites are diverse and widely dispersed. Where transboundary issues are involved, collaborative arrangements may be needed among the various management entities. In such cases, site-management authorities would normally call upon the assistance and guidance of the national MPA entity to help define and undertake such collaborations. 173

In some cases, a decentralized or local approach to MPA management may be most responsive to on-site needs. For example, traditional fishing grounds being managed for conservation and sustainable use by indigenous peoples or local communities may be valuable biodiversity sites to recognize as part of the MPA network. In such cases, the local entity involved has first-hand knowledge about the natural resources and management needs of the site and a direct economic interest in managing the site sustainably. Where the site is proposed to become part of the formal MPA network, governance arrangements should be explored where the local entity retains a lead management role (either as sole manager or co-manager). 174

A very large, multiple-zoned marine area, whether set up by umbrella legislation or a separate act, may need a separate authority specific to that protected area (as is the case with the Great Barrier Reef Marine Park Authority). 175

Mechanisms for coordination and collaboration. The multitude of diverse and competing sectors and jurisdictional levels involved in marine and coastal affairs makes it imperative that MPA authorities are empowered and required to coordinate and collaborate with other sectors and interests. Because of the independent, long-standing powers of most maritime shipping and marine resource agencies, experience has shown that this is “both the hardest and most important part” of the MPA manager’s job (Kelleher, 1999, p. 21). 176

Mechanisms for coordination and collaboration are aided when all relevant legislation is harmonized at the time of enactment of new protected areas legislation. As part of the pre-drafting and drafting process, the legal drafter should identify other laws and subsidiary instruments that may be in conflict with the new protected areas legal framework, including any marine and coastal elements, and indicate 177

amendments or repeals that may be needed (see Part III, Chapter 1, section 13). Even when legislation in other sectors is formally harmonized with MPA legislation, it is still important to emphasize coordination across sectors and levels of government because of the special features of MPAs and their relatively recent emergence in many countries. This emphasis in a legislative provision could indicate key government sectors and levels that should be involved in regular consultations to minimize operational conflicts and maximize opportunities to support each other in management, research, monitoring, compliance and enforcement.

178 These key sectors may include fisheries, tourism, navigation, ports, coast guards, customs and commerce. A mandate to coordinate and collaborate could be framed as a general duty of protected area authorities using existing mechanisms. Alternatively, a new mechanism (such as a technical-level committee or commission) could be set up for this specific purpose. In either case, any new governance approaches being recognized for individual sites should be represented in these coordinating mechanisms. These governance arrangements may give legal authority for management or co-management to communities, indigenous peoples, corporations (including NGOs and private-sector for-profit companies), and private parties.

179 In many coastal states, fisheries is a dominant or significant sector impacting MPAs or with potential to support MPAs. In such situations, it is essential that MPA authorities give priority to building collaborations and partnerships with the fisheries sector and associated stakeholders. Where small-scale traditional fisheries dominate, fishing is often the main support for local livelihoods and the communities are sustainably managing marine and coastal resources. In such cases, community-based collaborations are important to promote traditional practices, build on local knowledge and recognize marine and coastal protected area governance arrangements where appropriate.

180 In areas where industrial fishing dominates, stakeholders may include both domestic and foreign operators. Again, it will be important for MPA authorities and fisheries authorities to coordinate on appropriate management controls to ensure that the industrial fishing activities do not negatively impact MPAs. Negative impacts from industrial fishing could come through overfishing, use of fishing techniques that may destroy other species or critical marine habitats, or pollution or other activities that harm species and ecosystems.

181 **Recognizing all governance approaches**. As discussed in Part II, all governance approaches may apply to any type of protected area, including MPAs. MPA legal provisions should recognize possibilities for the management or co-management of marine and coastal protected areas by government entities, communities, indigenous peoples, corporations, NGOs and even private parties in appropriate cases.

182 Coastal zones, in particular, may include indigenous peoples and local communities with traditional or statutory tenure rights to coastal or marine resources. Coastal areas suitable for designation as marine and coastal protected areas may also include private property beyond the shoreline (such as wetlands or estuaries) that is voluntarily managed for conservation by the landowner. In some countries, NGOs have assumed management responsibilities for certain MPAs.

183 IUCN and other international organizations promote the inclusion of community-based marine and coastal protected areas as part of the MPA network, where appropriate (CBD COP 2004 VII/5; IUCN-WCPA, 2007a; World Bank, 2006). As with terrestrial protected areas, indigenous peoples and local communities may possess important traditional knowledge and skills for the on-site planning and management of marine resources and coastal habitats. Involving such entities in the governance of MPAs may also help improve local compliance and reduce the costs of enforcement by using local officers from those communities for surveillance and to help with enforcement. Such approaches have been used, for example, in the South Pacific in areas known as LMMAs (see Box III(2)-5, above).

Where community-based management or co-management is not appropriate but traditional fishing practices exist, legal provisions should promote the recognition of traditional fishing grounds, as long as compatible with the proposed protected area objectives of the site. If the fishing grounds must be reduced, other incentives may be provided to compensate. Where legally recognized traditional fishing rights must be curtailed with the creation of an MPA, there should be appropriate compensation for loss of rights. 184

Co-management (or shared management) is a new governance type for protected areas, with non-governmental entities sharing in important decisions (see Part II, section 3.3). Co-management of MPAs is a governance approach with significant potential for expanded use in countries setting up marine and coastal protected area networks. A wide range of actors may be involved, from private-sector fishing operators and tour operators, to NGOs, communities and individuals. Co-management between a government and such entities, for example, may involve formal assignment by the government (through licence, lease or other legal means) of long-term fishing or other resource use rights in appropriately designated MPA zones in exchange for commitments to fishing quotas, the use of certain practices to ensure sustainability, specific monitoring and data collection duties, and regular reporting requirements. 185

Advisory committees. As with protected areas legislation in general, MPA legislation should consider establishing advisory committees for the marine and coastal protected areas network or for specific sites or specific issues. One role of an advisory committee is to bring together diverse marine expertise, including scientists, practitioners, academics and user groups, to share their knowledge about the condition of existing sites, present and anticipated threats, and potential new sites. 186

Some committees could be composed of local stakeholders or other interested local actors and have an active role in MPA monitoring on the ground. This could include helping to collect specific data for the site, where capacities and resources exist. Other committees might be composed of local citizens and the public at large for the purpose of education and awareness building about the potential benefits of marine and coastal protected areas to local communities, and how local communities may participate more actively. Still others could have the role of building local consensus on specific issues associated with management options and techniques for consideration and approval by the protected area authorities. 187

4.6 Establishment

A few special issues related to legislative provisions on the establishment of marine and coastal protected areas are important to highlight here, building on the generic elements discussed in Part III, Chapter 1. These are related to issues of scale, key site selection criteria, giving priority to no-take zones and strictly protected areas, stakeholder participation, and boundaries. 188

Issues of scale. Protected area authorities will need to choose whether the MPA network will be comprised of a large number of small protected areas or a few large multiple-use protected areas. The approach chosen has special significance in marine environments, where the dynamic and multi-dimensional nature of the environment presents unique challenges for management, controlling external threats and adapting to unanticipated change. 189

In keeping with best practice management principles, legislation should provide that individual MPA units are of sufficient size to minimize adverse impacts from activities outside the protected area (avoiding edge effects). Where feasible, legal provisions should promote the establishment of a few large sites rather than the establishment of several smaller sites. IUCN-WCPA recommends this approach. In addition, the CBD Programme of Work on Marine and Coastal Biodiversity (CBD COP 190

2004 VII/5) reiterates the importance of this approach, especially for strictly protected representative areas where extraction of all kinds is excluded. The CBD Programme of Work specifically addresses the issue of scale, stating that marine sites "should contain sufficient area and replicates to ensure that they can fulfil their objectives and be ecologically viable over time" (CBD COP 2004 VII/5, Appendix 3, para. 11). The Programme of Work goes on to explain that experience with terrestrial protected areas and MPAs, as well as the literature, indicate that the requirement of representativeness cannot be met by establishing a few small marine and coastal protected areas.

191 **Key criteria for selection and design**. It is important that MPA legal provisions incorporate guidance or criteria for designing marine and coastal protected area networks and sites. The considerations reviewed in Part III, Chapter 1, with respect to the establishment of protected areas in general, apply to marine and coastal protected areas as well. They include identifying the boundaries and primary conservation objectives of a site or zones within a site, and the larger-scale marine spatial planning and management considerations necessary to take into account environmental connectivity variability. They also involve determining the appropriate protected area management category or categories based on the conservation objectives, and deciding on a governance type. Consideration should also be given to the social and economic interests that may be affected by establishing a particular site, and how these interests support or threaten its conservation objectives and sustainability as a protected area. As part of that evaluation, it is important to determine if the proposed MPA should undergo an environmental and social impact assessment before establishment, as discussed generally in Part III, Chapter 1, section 11.

192 MPA provisions should also require science-based management using the best available means. In particular, science and technology are increasingly being recognized as essential tools for designing and managing marine and coastal protected areas effectively. Such tools as remote sensing, global positioning systems (GPS) and satellite tracking of species are particularly important for defining and delineating proper boundaries to ensure representative and ecologically viable areas; understanding species and ecosystem behaviour and threats; informing compliance and enforcement mechanisms; tracking navigation, shipping, industrial fishing and other commercial activity; and aiding with data collection and scientific research.

193 In addition, IUCN and the CBD, the latter through its Programme of Work on Marine and Coastal Biological Diversity, have continued to elaborate guidance and criteria for designing marine and coastal protected area networks and sites (CBD COP 2004 VII/5; IUCN-WCPA, 2007a). These criteria are important to consider reflecting in MPA provisions guiding the selection and design of particular sites:

- **Representativeness**. MPA networks should represent the range of marine and coastal biological diversity (from genes to ecosystems) and the associated physical environment within the given area, as well as critical habitats for threatened and endangered species.
- **Replication**. All habitats in each region should be replicated within the network and distributed spatially throughout the network.
- **Viability**. MPA networks should incorporate self-sustaining, geographically dispersed component sites of sufficient extent to ensure population persistence through natural cycles of variation. These sites should be independent, as far as possible, of activities in surrounding areas.
- **Precautionary design**. Network designers should base their decisions on the best information currently available, rather than delaying the process to await more and better information. Where information is limited, designers should adopt a precautionary approach.
- **Permanence**. Network design must provide long-term protection to effectively conserve diversity and replenish resources.

- **Maximum connectivity**. MPA network design should seek to maximize and enhance the linkages between individual MPAs, groups of MPAs within a given ecoregion, or networks in the same or in different ecoregions.
- **Resilience**. MPA networks must be designed to maintain the natural state of ecosystems and to absorb shocks, particularly in the face of large-scale and long-term changes (such as climate change).
- **Minimizing adverse impacts on existing users**. When choosing potential sites, it is essential to consider the social and economic interests of existing users and, to the extent possible, to minimize adverse impacts. This information should include current and potential uses and the contribution that protection could make to economic or cultural values.
- **Cultural values**. Where there are important sites of cultural, historic or sacred value associated with ecologically important natural marine or coastal areas, this combined value should be given primary consideration.

Interim protection and precautionary approach. It is important for MPA legislation to authorize the designation of sites for interim protection in cases where additional data collection and stakeholder consultations are required. Such information is key for determining the appropriate protected area management category (or categories, where zones are legally established), the delineation of zones with different objectives and the content of the draft management plan. 194

Interim protection may also be needed to create immediate protection for a site until the process of formal designation can be concluded. Interim protection orders can provide controls over activities that threaten to damage the area and cause serious or irreversible harm to its conservation values (see Part III, Chapter 1, section 6.6). 195

Many marine areas, especially deepwater areas, are not as well studied as terrestrial areas. In addition, global change factors such as climate change present new and serious long-term threats to marine environments that are not well understood. Legal tools for interim protection allow decision making about boundaries and protection measures for new MPA sites to take a precautionary approach, allowing time for thorough assessment and consultations in advance of designation. This period of time enhances the ability of MPA managers to advise on design and protection aspects that will allow flexibility for adaptive management of the site or zones to build resilience to face future threats. Applying the precautionary approach to the establishment and management of MPAs minimizes decisions with serious and irreversible negative consequences over the long term that could undermine the conservation objectives of the site (see Part I, section 3.4). 196

The need for highly protected zones. MPA legislation should recognize that a network of highly protected areas (or highly protected zones in a large MPA) is normally a necessary component of a country's marine and coastal protected areas network. It is important to protect the full range of plants and animals in the marine environment, not just specific fish stocks which seasonal or rotational closures may target. The CBD Programme of Work on Marine and Coastal Biodiversity recognizes that a representative marine and coastal protected areas network should contain a balanced mix of highly protected MPAs where extractive activities are prohibited permanently and others where sustainable use may be allowed on a controlled basis as long as consistent with the primary conservation objectives of the area (CBD COP 2004 VII/5, programme element 3 and Appendix 3). 197

Specific benefits of or objectives for designating highly protected marine areas that are worth incorporating in legal instruments (principle or subsidiary) include the following: 198

(a) protecting biodiversity, including preventing loss of vulnerable species, restoring population size and age structure, restoring community composition, protecting genetic structure of populations;

(b) protecting ecological processes from the effects of exploitation by maintaining the abundance of keystone species, preventing second-order and cascading ecosystem effects, preventing threshold effects, maintaining food web and trophic structure, ensuring system resilience to stress;

(c) maintaining high-quality feeding areas;

(d) promoting a holistic approach to ecosystem management;

(e) eliminating fishing gear impacts and by-catch within the area;

(f) providing undisturbed spawning conditions, habitats and settling sites;

(g) providing essential fisheries management data including estimates of natural mortality;

(h) including sites where the public can see and understand the effects humans can have, and the benefits of management; and

(i) providing long-term monitoring, benchmark control areas and places where research projects can be conducted unaffected by human activities (Day, 2006; SCBD, 2004b, pp. 11–12).

199 **Stakeholder participation**. The full and free participation of all stakeholders should be built into decision-making processes for the establishment and management of marine and coastal protected areas. Legal provisions for MPA establishment should include additional processes and mechanisms if needed for that purpose.

200 The marine environment has special stakeholders that protected area authorities may not be accustomed to consulting. These range from local communities dependent on fisheries or tourism for their livelihoods, to large domestic and foreign industrial fisheries, transit shipping, mining interests, scientific research vessels, and underwater treasure hunters. In some countries, the tourism industry may be strong, especially where marine waters contain coral reefs or underwater cultural sites. In countries without coral reefs and other tourist attractions, the dominant stakeholder may be fisheries.

201 There are many important advantages of including the full range of marine stakeholders in consultations and the participation process. Such stakeholders are likely to have specialized knowledge of or a working familiarity with the marine environments and resources they use, as well as the possible threats and perhaps even competing uses, whether legal or illegal. This applies to commercial fisheries and tourism companies as well as to local communities. Where community use of coastal and marine resources is predominant, for example, an important benefit of the participation process is to learn about their traditional knowledge and take it into account as part of the design and management planning for the proposed MPA. In return for gaining traditional, local or other user group insights and knowledge, governments have the opportunity to explain and demonstrate to stakeholders the potential benefits of establishing a protected area.

202 These many and varied stakeholder interests are important to identify and incorporate in decisions concerning the design and establishment of new or expanded MPAs. To reinforce this, MPA legal provisions could enumerate key stakeholder groups to be consulted and involved. In addition, advisory committees with representatives from such groups could be set up to provide a more structured mechanism to ensure their ongoing input and advice on MPA matters.

203 **Boundaries**. The legislation should specify that boundaries of marine and coastal protected areas must be simple and clearly defined in order to be easy to interpret for compliance purposes. To the extent feasible, descriptions of MPA boundaries and maps should be available in digitized form using satellite technology such as geographic information systems (GIS) and GPS. Verifying data for international

reporting of MPAs is hampered because digitally recorded boundaries are not available for many sites. Best practice guidelines on the establishment of MPAs include the requirement to generate digitally defined boundaries (see NOAA, 2006).

Boundary descriptions for the whole MPA (as well as internal zones) should be clear, accurate and correctly represented in order to be easily identified by managers, potential resource users, shipping operators and other interests for compliance and enforcement purposes. In contrast to terrestrial areas, marine areas have fewer visible geological features or political boundaries. The design of marine and coastal protected areas should aim for simple shapes and reduced fragmentation, using straight boundary lines and minimizing the perimeter-to-area ratio. Experience has shown that squares are easier to work with than irregular shapes, and that boundaries should follow major latitude and longitude coordinates where possible to make it easier to locate the sites on navigational charts. For near-shore zones, clear sight lines onshore or the use of other fixed objects are good alternatives to areas defined by geographic coordinates (see, for example, New Zealand Ministry of Fisheries and Department of Conservation, 2008, p. 20). 204

The legislation should also indicate the need to collaborate with other government sectors and stakeholders when defining boundaries. MPA boundaries must recognize other boundaries and jurisdictions that already exist in the area, including rights of innocent passage under international law for shipping. Collaboration with and the cooperation of the local communities involved may also be required to help identify, mark and monitor boundaries. Collaboration with neighbouring countries is also a good practice to encourage or require where MPA boundaries are near or adjoining national marine borders. 205

4.7 Management

A few aspects of MPA management are worth highlighting here to supplement the comprehensive discussion of generic elements for protected areas legislation in Part III, Chapter 1. 206

Management categories. The 2008 IUCN-WCPA guidelines on protected area management categories (Dudley, 2008) indicate that the IUCN categories (I–VI, from strict protection to sustainable resource use) apply to marine and coastal protected areas. As noted by the Vth IUCN-WPC in 2003: 207

> MPAs covering the full range of IUCN Protected Area Management Categories are widely recognized 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 (IUCN-WPC 2003 V.22).

Zoning plans. The MPA legislative framework should support zoning as part of the management plan. Making use of zoning tools in marine and coastal protected areas can help to address issues of scale, special management needs, no-take requirements, buffer zones, economic and other uses (for example, navigation), and changing conditions internal to the site or as a result of external impacts. Normally, zoning is carried out entirely within the management plan, with boundaries and objectives specified. 208

Large-scale MPAs commonly have complex management requirements and mixed conservation objectives. Where the site is a large-scale MPA, legal provisions could require the MPA authorities to prepare a zoning plan that defines zones, as needed, to incorporate the range of conservation objectives involved and incorporate the zones into the management plan. 209

210 It is important to note that another approach within a large MPA is to give different zones legal designations according to their conservation objectives. This is particularly useful in marine environments where the needs of management may require a larger spatial planning framework and stronger enforcement tools within which to protect high-value core areas (the Great Barrier Reef Marine Park is a good example).

211 **Buffer zones**. Legal provisions for MPAs should emphasize the need for buffer zones to help accommodate the multi-dimensional aspects of marine environments. Buffer zone design must also take into account the special natural characteristics of marine and coastal systems related to the large-scale connectivity and variability of such fluid environments. The absence of buffer zones to control economic and other human activity in surrounding waters and at the land-sea interface puts even well-managed MPAs at risk. MPA networks comprised of several small MPAs require some protective measures in areas surrounding each site to serve as a buffer. Large multi-purpose areas may be able to provide buffers within the site through the use of zoning tools to ensure full protection of biodiversity-rich or environmentally sensitive core areas.

212 **Adaptive management**. An emphasis on adaptive management is particularly needed for marine environments, given their dynamic and multi-dimensional biophysical features and the special challenges of managing certain areas, such as deepwater sites. In addition, scientific understanding is still emerging about resources and species, ecosystem processes, threats, connectivity needs, and vulnerability to external events.

213 Adaptive management has taken on new meaning in the context of climate change. Climate change is already impacting marine and coastal protected area networks, and as impacts intensify, conservation objectives, boundaries and management needs may also change. To the extent possible, using best available scientific information, MPA system and site design must take into account issues of climate change and adaptation concerns. Much adaptation to climate change over the near and medium term may be possible within the framework of the existing management plan. In such cases, ongoing scientific monitoring and data collection provides input on climate change impacts as well as other changes that should be used for periodic updating of management and zoning plans. With time, the impacts of climate change may call for adaptation measures that go beyond the scope of the existing management plan and legally established boundaries, and the legislative process will need to be involved to adjust the legal designation of the site. Adaptation is facilitated when marine and coastal protected areas are designed with as much spatial coverage as possible to provide zones of sufficient size and flexibility to accommodate management changes within the scope of the management plan while still preserving the primary conservation objectives of the site.

214 **Integrated resource management within the wider environment**. Legislation for MPAs should promote or require, as feasible, an integrated approach to marine and coastal zone management. This approach places design and management decisions within the context of the wider marine and coastal environment. This integration takes into account information about activities outside the site that may have positive or negative environmental impacts on the site, in order to design the most effective management regime to sustain the conservation values of the site. Integration facilitates linkages between broader marine spatial planning and management, and the specific needs of the MPA. Integrated management requires collaboration with other marine sectors and users. It allows multiple-use objectives (navigation, fishing, tourism, sustainable use), vulnerabilities from external threats (for example, land-based pollution) and connectivity conservation needs to be reconciled.

215 A regional initiative in the Gulf of Mexico to build an MPA network that weaves together these many economic interests provides insights into the complex challenges involved in integrated marine resource management based on the ecosystem approach. Called ‘Islands in the Stream’, and involving the US,

Mexico and Belize, this initiative, currently in the planning phase, brings together federal and state governments and significant stakeholder interests (see Box III(2)-10).

The CBD Programme of Work on Marine and Coastal Biodiversity identifies the need for integrated marine and coastal area management as its first programme element (CBD COP 2004 VII/5). To advance this goal, states are encouraged to apply the ecosystem approach, promote integrated multidisciplinary and multi-sectoral coastal and ocean management at the national level, and develop supportive ocean policies and mechanisms (CBD COP 2004 VII/5, objective 1.1). The concept of marine spatial planning and management has been broadly endorsed in other international instruments as well, including the Ramsar Convention, and by international oceans organizations including, in particular, the Intergovernmental Oceanographic Commission of UNESCO (see Ehler and Douvere, 2009). 216

The Wadden Sea region is an example of an integrated marine and coastal area managed as a protected area by joint agreement of the Netherlands, Denmark and Germany. Various parts of the region are recognized as Ramsar sites. The Wadden Sea region is also recognized as a world heritage site under the World Heritage Convention and as a PSSA designated by the IMO (see Box IV-3 in Part IV). 217

4.8 Regulating activities

The primary goal of regulating activities within and in the vicinity of a designated MPA is to safeguard the conservation objectives of the site. As with terrestrial sites, some activities should always be strictly prohibited throughout the marine and coastal protected areas network, for example, damaging coral; taking or harming rare, threatened or endangered marine species; large-scale extractive activities like mining and industrial fisheries; and the dumping of ship waste, bilge water or toxic substances. Considerations related to compliance with regulations, and criminal and civil enforcement, as discussed in Part III, Chapter 1, section 10, relate equally to marine and coastal protected areas. 218

When identifying activities to regulate in an MPA system, the legal drafter should keep in mind that international treaties must be respected (for example, UNCLOS provisions allowing navigation in certain zones; see section 3.1, above). For activities that are to be addressed through MPA legal provisions, standard regulatory tools are available. Activities associated with general use of an MPA by the public may be authorized by general rules. These may be communicated by public notice, or in maps and handouts demarcating the zones available for different uses, for example, sites for recreational activities (such as snorkelling, diving, boating or swimming), or sacred or cultural marine sites. The legislation should provide that authorized activities may be prohibited if they are no longer consistent with the conservation objectives of the site. 219

Certain activities should be authorized only by a permit or other written document, and subject to such conditions as may be prescribed, including payment of fees and undertaking the activity in accordance with good practice. Concessions or permits may be appropriate, as long as consistent with the management plan, for such businesses as ecotourism operators, cruise ships, boat rental companies, beach restaurants, commercial film-makers and dive operators. In zones where some commercial fishing activities may be permitted, licences should be required specifying limitations, conditions and prohibitions. Scientific research should also require a permit; in some jurisdictions marine scientific research in an MPA is one of the primary activities, after fisheries, requiring oversight and management (see, for example, the Gully case study accompanying these guidelines: VanderZwaag and Macnab, 2010). Concessions or permits can be issued for a limited period or be subject to renewal. Some activities for which a concession or permit is being sought may require an EIA in advance of decision making on the application. 220

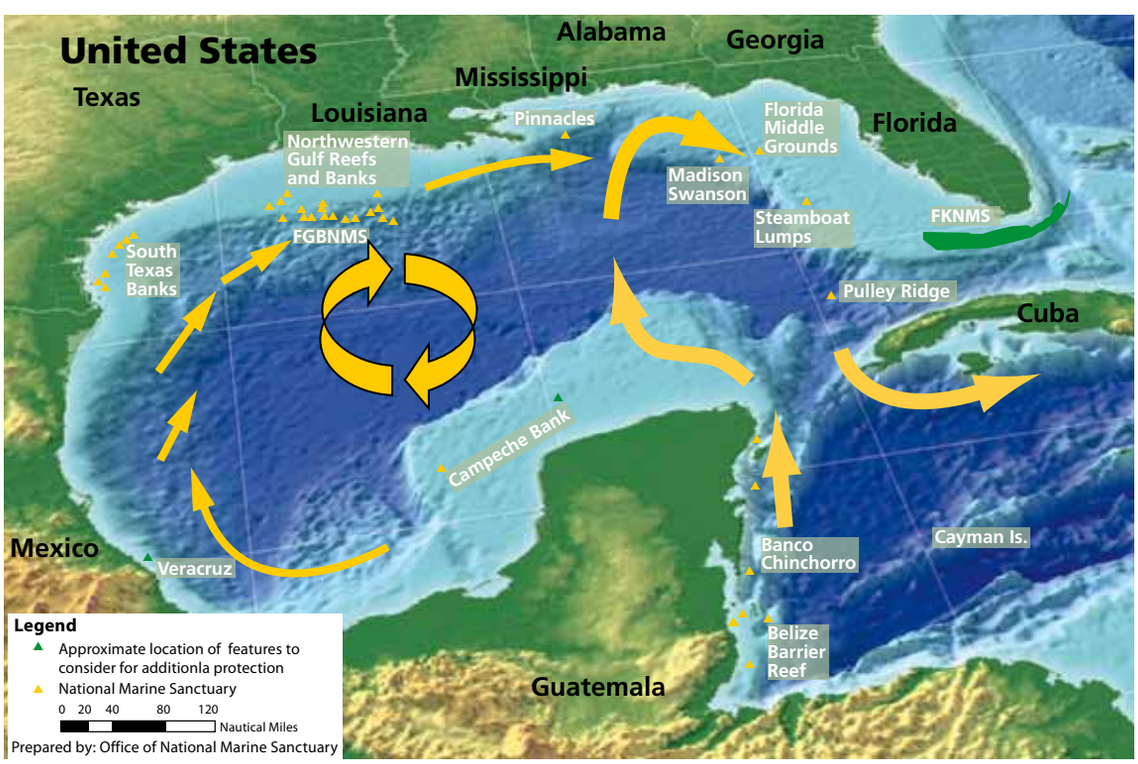
Box III(2)-10: Planning an MPA network—'Islands in the Stream' in the Gulf of Mexico

The Gulf of Mexico is one of the most intensively shared marine water bodies in the world. It supports a significant part of the US economy through its extensive oil and gas operations, recreational activities, commercial fisheries, ports, shipping, and scientific exploration. Mexico, which shares a sizeable portion of Gulf waters, has similar economic interests in the area. Much of the region's economy depends on the Gulf's diverse and rich marine life and unique habitats. As such, the Gulf's economic sustainability is dependent on a healthy ecosystem. In recent decades, however, the ecosystem has come under increasing pressure from human and natural stresses including intensified pollution, overuse of natural resources, hurricanes and other natural events, and climate change.

In the 2000s, marine scientists began discussions on an ecosystem-based coordinated approach to marine resources management throughout the Gulf. As part of this approach, the development of an integrated network of MPAs linked by ocean currents was proposed. This followed years of research that identified major biological and geophysical linkages across the region. Individual reefs and banks form a nearly continuous physical corridor of unique marine habitats ('islands') containing a rich diversity of marine life (fish, corals and invertebrates). The currents ('streams') provide connectivity pathways between coastal and deep-sea ecosystems, which depend on one another for biological recruitment and replenishment. The currents move from the Caribbean, between the Yucatan Peninsula and Cuba, into the Gulf of Mexico on a clockwise path, and around the Florida Keys, eventually merging with the Gulf Stream (see Figure B).

Thus was born the 'Islands in the Stream' concept, envisioned as an MPA network of small discrete MPAs in US Gulf waters, most of which already have some form of protection, joined by similar efforts in Mexico and Belize. In 2008, an expert forum of more than 100 scientists and managers from around the Gulf of Mexico was convened with the support of several government agencies to examine the concept and its implementation. The forum concluded that there was sufficient science to support the creation of an international MPA network, and identified several ecologically vital and productive sites with which to start (Ritchie and Keller, 2008).

Figure B: A map of the Gulf of Mexico



Source: NOAA Office of National Marine Sanctuaries.

Today scientists and managers continue to develop the concept with government agencies and affected sectors (energy, fisheries, tourism, conservation). In the US, the initiative is viewed as an opportunity to demonstrate that energy and other economic interests can coexist with marine conservation. Through the use of marine spatial planning, the network would allow multiple uses based on sound science, take into account current management measures under other authorities, allow current energy industry operations to continue and also allow future, environmentally sound access to protected areas. The initiative would also improve marine and coastal resource governance by providing a framework of collaboration and coordination for the many federal and state agencies already involved in marine management and conservation throughout the Gulf.

From a legal perspective, the US could use the National Marine Sanctuaries Act 1972 (16 USC 1431-1445) to designate an MPA network under US jurisdiction. This would give the National Oceanographic and Atmospheric Administration (NOAA), the US federal agency in charge of national marine sanctuaries, the oversight authority to design and implement a management planning process through an extensive consultation process, including the establishment of a multi-stakeholder public advisory council.

At the international level, consultations continue among scientists and managers for coordinated planning and information sharing. Legal and administrative processes for each country will be governed by their national systems. Expectations are high that an international network of MPAs will be formally created by appropriate legal or administrative instruments in the coming decade. Such a network will enhance administrative coordination and help draw additional resources to support science and management activities across the entire region. It will also facilitate increased international collaboration among the countries in the Caribbean and the Gulf whose activities directly impact the health of the region's marine waters and marine resources.

Source: Ritchie and Keller, 2008.

In marine environments that are attractive for tourism because of coral reefs, underwater archaeological sites or favourable beaches, specific attention is needed in MPA legal provisions to ensure that tourist activities are conducted in an ecologically sustainable manner, whether authorized by general rules or by written permit. IUCN guidelines have identified a number of actions that promote ecologically sustainable tourism, and these actions can be incorporated in MPA legal provisions related to the responsibilities and functions of MPA authorities (see Kelleher, 1999): 221

(a) Ensure that economic and employment benefits of tourism accrue mainly to local resource users, so as to give them an incentive to conserve;

(b) Serve as brokers to bring the tourism industry and local people together, rather than trying to be direct tourism providers;

(c) Educate the tourism industry and gain their participation in understanding the dependence of their sector on protection of the natural environment;

(d) Encourage the industry to develop and adopt codes of environmental practice (many such codes already exist) and advise the industry on such codes. Consider endorsing the codes as 'green' or 'sustainable' tourism codes of good environmental practice;

(e) Use leaders in the tourism industry to maintain peer pressure on all tourism operators and also on other related sectors, for example, hotels, boating operations, taxi companies;

(f) Carefully assess and protect those recreational values for the community and public at large that should not be controlled by private-sector operations but should be free to all citizens, for example, sacred sites, family recreational areas.

Bioprospecting in the marine environment is another area of growing commercial interest, where the regulation of activities is increasingly important. Where bioprospecting is a possibility, MPA legal provisions or other legislation should provide for strong controls and safeguards, using international standards where appropriate, with details laid out in regulations or other subsidiary instruments, as needed. These regulations should include regular reporting requirements, the use of sustainable collection practices with minimum impact on the site, provisions for employment of local people, scientific information and technology sharing and transfer, training for domestic scientists and joint 222

research involving domestic and foreign scientists, the payment of fees for taking samples and for exploratory activities, and benefit sharing (see Salm et al., 2000, p. 139).

223 For the purpose of addressing regulatory needs with respect to other issues that may exist or can be anticipated for the marine and coastal protected areas network, the legal drafter may want to review Part III, Chapter 1, section 9, which discusses generic considerations for regulated activities in protected areas of all types.

4.9 Compliance and enforcement

224 Marine and coastal protected area networks present special challenges for compliance and enforcement. Sites may be widely dispersed across extensive bodies of water where monitoring and surveillance by government agencies is difficult and prohibitively expensive, requiring specially trained personnel, access to appropriate vessels or aircraft, or high-tech equipment. Normally, the outer marine boundaries of an MPA are not easily demarcated on-site, and not all navigational charts will show clear and accurate boundaries, especially in the case of zones within large sites.

225 Surveillance of large offshore areas may require the use of new technologies that apply remote sensing and satellites to track vessels, GPS to accurately identify whether vessels are illegally inside the boundaries of a protected area, and chemical analyses to identify and link specific pollutants to a source. To supplement traditional sources of shipping information (navigation plans, ship logs), the Gully MPA in Canada, for example, monitors positional information received from vessel-based Automatic Identification Systems and other offshore intelligence data collected by several government agencies to track and understand daily vessel traffic patterns in and near the MPA and to communicate with vessels when required (see Gully MPA case study, VanderZwaag and Macnab, 2010). Data from modern surveillance equipment using satellites and other communication technologies is increasingly considered key evidence for prosecution.

226 The unique challenges presented by marine and coastal protected areas call for special efforts to promote compliance. This involves building awareness, understanding and partnerships across sectors, levels of government and key stakeholder groups. In this context, two points are worth emphasizing as the legal drafter develops provisions on compliance and enforcement for MPAs. These points build on the general discussion in Part III, Chapter 1, section 10. First, the legal definition of 'authorized enforcement officer' for the purposes of marine and coastal protected areas should include, in addition to the police and authorized MPA officers (as relevant to the local situation), officers of the national coast guard (or equivalent), naval and defence forces, customs and fisheries officers, as well as local community officials who may be trained and authorized for certain marine and coastal enforcement or surveillance responsibilities.

227 Second, the legislation should authorize protected area authorities to develop partnership agreements with local communities and traditional and commercial user groups for the surveillance of coastal and marine areas, reporting on suspicious or offending behaviour, and collaborating with enforcement agencies when offences are prosecuted. A key to effective enforcement within marine and coastal protected areas, especially large marine areas, is support for or creation of self-interest in local communities and in private-sector fishing operators to protect the resources for the good of all actors over the long term. This is as relevant for large offshore marine areas as it is for locally established and governed marine or coastal protected areas. In the case of LMMAs, the legislation could authorize the lead MPA authority and local governments to negotiate agreements with clearly defined surveillance and enforcement tasks that are shared with local communities. Where marine and coastal enforcement

tasks may include police powers, formal training and certification by police authorities would also be required.

Reaching out to stakeholders as partners in promoting compliance expands considerably the outreach capacity of the MPA authority. Broad public and stakeholder participation in surveillance and monitoring benefits from an education strategy. Stakeholders need to understand the purpose of the marine and coastal protected areas network, activities that are permitted and prohibited in different sites, where the boundaries are located, and the benefits of increased collaboration in surveillance and compliance. Such partnerships are most effective and long-lasting when the groups concerned have been involved in MPA design and management decisions from the beginning. These partnerships may be formalized, as appropriate, with co-management agreements specifically for surveillance, monitoring, reporting and data collecting. 228

4.10 Special financial considerations

Governments should provide core financing from general revenues to support the protected areas system, including marine and coastal protected areas, as an ongoing commitment to advance the public interest (see Part III, Chapter 1, section 12). 229

In most countries, additional financial opportunities also need to be developed to supplement government funding. In marine areas, tourism fees, a portion of fisheries licence or leasing fees, and fees for scientific research should be among the sources of additional revenues. Where feasible, legislation should provide that such fees will be used for the management and maintenance of the marine and coastal protected areas network. For example, fees for the Great Barrier Reef Marine Park are built into tourism permits and are returned to the park to support its management needs. 230

In countries with coral reefs and other marine and beach attractions, the tourism sector may have significant potential to generate funds through visitor fees and charges for certain recreational activities. In such countries, tourism is one of the first economic sectors to benefit from the designation of marine and coastal protected areas for recreational and educational purposes. Where legal systems permit, MPA authorities should be authorized to set and collect fees for tourism activities inside certain MPAs. In addition, MPA authorities should have the duty under the law to manage and control tourism, based on standards for ecologically sustainable tourism, to ensure preservation of the conservation objectives for which the sites were designated. 231

In some countries, fisheries may be a major economic activity. This sector also benefits from MPAs, which preserve or create undisturbed spawning conditions, habitats and feeding sites for economically valuable species, and provide a framework for sustainable management in multiple-use zones. Government licensing fees, particularly for industrial fisheries, may be a significant source of public revenue. Where national fiscal policy permits, a percentage of industrial fishing licence revenues may be allocated to fund MPAs. 232

Many private-sector actors also have substantial economic interests in the sustainability of marine and coastal ecosystems. Efforts could be made to interest private-sector businesses in supporting the MPA network through public-private partnerships for fund-raising and other cost sharing, including for data collection and scientific monitoring, in strictly protected MPAs with no-take zones as well as zones managed for sustainable use. 233

Protected area legislative provisions, or provisions in other legislation, may also authorize the establishment of a special fund which can be used by MPA authorities for management purposes, 234

either tied to specific activities or for general operations. In some countries, legislation for marine and coastal protected areas specifically authorizes the creation of a marine conservation fund and specifies conditions for its use (see Box III(2)-11).

235 Biodiversity prospecting, or bioprospecting, presents special challenges for marine conservation. While poorly designed operations can harm high-biodiversity sites, bioprospecting also has the potential to generate significant revenues for the government. Where bioprospecting activities are under consideration, a percentage of research, access or other fees negotiated between the government and the private parties concerned should be allocated for MPA monitoring and management. It should be stressed, however, that such activities require tight controls, monitoring and other safeguards to be clearly stated in permit or licensing agreements, to ensure the protection of the marine environment and the reporting and equitable sharing of benefits with the country or jurisdiction involved.

Box III(2)-11: South Africa's Marine Living Resources Fund

In South Africa, MPAs currently cover approximately 20 per cent of the country's coastline. In 1998, the government established a Marine Living Resources Fund (MLRF) under the Marine Living Resources Act 1998. This move came in response to the rising costs of fisheries management, administration and enforcement.

The MLRF receives funds from levies on fish products, licence fees and permits, fines and confiscations, application and harbour fees, and various transfers from the central government. The Director-General of the Department of Environmental Affairs and Tourism is the statutory accounting officer of the MLRF, a function which has been delegated to the deputy director.

In 2001, the MLRF became a fully fledged public entity, which meant that it was required to comply with the strict accounting requirements of the Public Finance Management Act 1999. Implementation of these strict accounting requirements initially generated considerable debate when the MLRF failed to obtain an unqualified audit for six years and showed a deficit of 65 million rand in the 2005–06 financial year. There were concerns about mismanagement, fraud and corruption. In 2006, the Minister of Environmental Affairs and Tourism was called upon to stabilize the MLRF. This resulted in the fund receiving it first unqualified audit in 2008 and showing a positive accumulated surplus of 29 million rand. This experience bodes well for the future administration of South Africa's MPAs. It may also provide lessons for creating a similar fund for South Africa's terrestrial protected areas, which are currently funded largely through general revenues.

Contributed by Alexander Paterson.

4.11 Harmonization of laws

236 It is essential to work towards the compatibility, harmonization and integration of MPA legislation with other laws governing or impacting aspects of the marine environment (for example, fisheries, aquaculture, mariculture, tourism, shipping, ports, mining, coastal development, land-based pollution). In some cases, this may entail designing and negotiating amendments in other sector-specific legislation to address redundancy, overlap, conflict and gaps. The legal drafter will need to give special attention to this task in the context of marine and coastal protected areas. The maze of marine-related laws and regulations and the associated institutional interests in coastal countries present a special challenge. The goal is to create consistency within the national legal framework, and between national laws, local rules and customary practices, to support marine and coastal protected areas and ensure their sustainability.