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MARINE PROTECTED AREAS & ZONING IN A SYSTEM OF MARINE SPATIAL PLANNING

A discussion paper for WWF-UK

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1. WWF has produced a draft Marine Bill to stimulate the discussion for UK-wide marine legislation, and to push the marine stewardship agenda forward. The WWF Draft Bill is not intended to be prescriptive but rather to provoke and guide debate and detailed thought among those who would contribute to the government's own proposed marine bill. The Draft Marine Bill also illustrates what some aspects of much-needed marine legislation might look like in legal language. Two ideas encompassed in the WWF Draft Marine Bill are "marine zones" and "nationally important marine sites" (a type of Marine Protected Area). This briefing discusses the relationship between the two ideas and expands on how they might work in practice.

2. The term Marine Protected Area (MPA) is usually used to describe any area reserved by law or other effective means to protect part or all of the enclosed environment¹. WWF UK use the term to describe areas designated specifically for the conservation of biodiversity².

3. Zoning is a management tool for spatial control of activities with defined activities permitted (sometimes with associated conditions) or prohibited from specified geographic areas. It is often used to separate potentially conflicting activities and, in some cases, zoning provisions may give a particular sectoral interest virtually exclusive use of an area of sea (see box for examples).

4. In the 1970s', 1980s' and 1990s' most zoning of marine activities was confined to and promoted within MPAs through "zoning schemes", "zoning plans" and associated "zoning charts" identifying areas where particularly activities were permitted, restricted or prohibited to achieve the management objectives of the MPA. Zoning remains an important element of MPAs but it is not limited to such areas or to achieving biodiversity conservation objectives. These days it is seen as a management tool that can and should also be used for Marine Spatial Planning. In the context of the WWF Draft Marine Bill this means zoning could be applied anywhere or over the entire area of UK territorial waters.

5. As MPAs are a type of zone, as well as an area in which activities might be zoned, there is clearly potential for confusion between the terms 'MPA' and 'marine zone'.

EXAMPLES OF SPATIAL ZONES WHICH MAY BE USED IN UK WATERS

Fisheries: Fisheries Boxes, areas defined by Regulating Orders and Several Orders, areas licensed for aquaculture

Shipping: Areas to Be Avoided, Particularly Sensitive Sea Areas, Marine Environment High Risk Areas

Military: Practice & Exercise Areas

Archaeology: Protected Wreck Sites

Nature Conservation: Marine Nature Reserves

Oil & Gas: licensed exploration/extraction areas

Marine Aggregate: licensed extraction areas
Safety zones around structures and installations; eg. cables & pipelines, oil/gas platforms, windfarms

¹ Based on IUCN Guidebook on MPAs

² MPAs in the UK. WWF Internal Briefing Paper.

ZONING

6. Zoning of activities is one of a number of management options which may be introduced within a Marine Spatial Plan (MSP) to help achieve the overall objective of the MSP. In the draft Marine Bill this objective is “to ensure the sustainable development of the marine area”.

7. Zoning regulations may permit or exclude particular activities from parts of the “marine area” to which the MSP applies. Legal provisions that enable zoning to take place are currently found within sectoral regulatory frameworks (fisheries, nature conservation, oil and gas etc.). These sectoral arrangements will be the starting point for any zoning within the MSP however the MSP should take an overview of the existing mix of activity zoning in a geographic area and rationalise them in light of the overall objectives for the area. Each zone is therefore likely to support a range of activities although some zones may be identified for exclusive use by one sector.

8. A useful secondary objective of the MSP should therefore be to rationalise and integrate existing sectoral zoning arrangements.

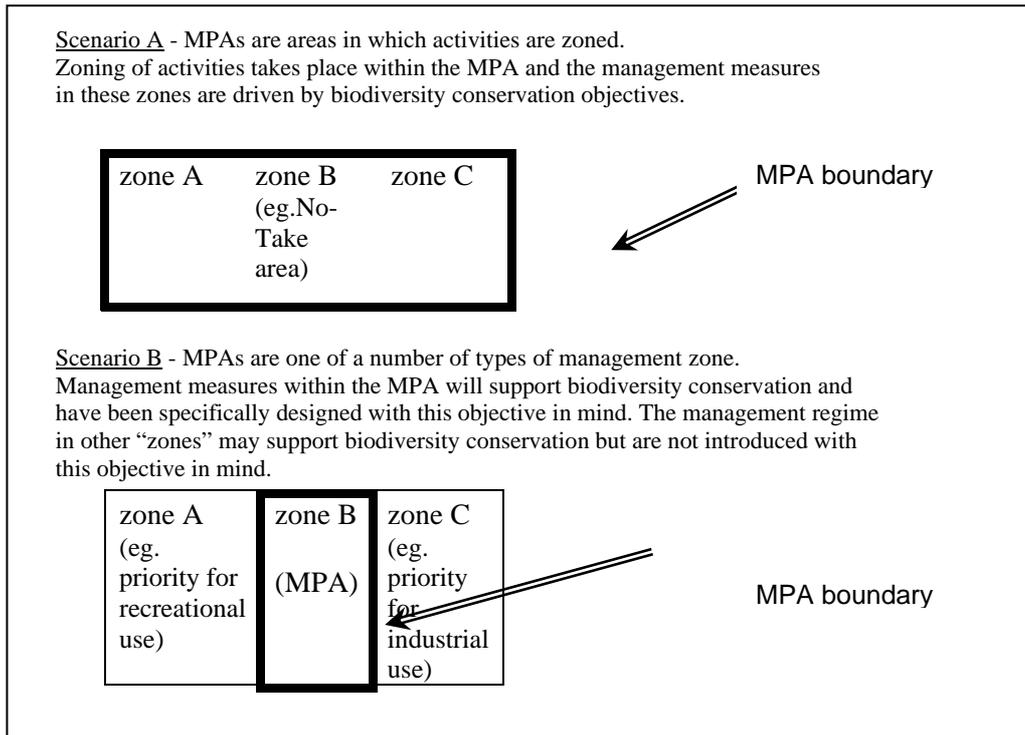
9. The Great Barrier Reef Marine Park operates a system of multiple-use zoning and a similar approach could be applied throughout UK territorial waters forming the basis of zoning with a UK Marine Spatial Plan. Two studies have illustrated how this might work in the UK and confirmed that it is feasible. The first is a study for English Nature that was carried out in the 1990s. This examined existing spatial restrictions in the Severn Estuary, Fal estuary and Flamborough Head and provided an integrated overview of zoning in these areas³. A more recent study has shown how existing spatial regulations can be illustrated as a zoning scheme in the Irish Sea⁴. Similar methodologies were used in both studies and could be applied to UK territorial waters to provide the starting point for zoning in a UK MSP.

³ Gubbay, S. (1996). Flamborough Head SMA, Falmouth Bay and Estuaries, and the Severn Estuary Multiple Use Zoning Schemes. A report to English Nature March 1996. Contract No VB33/01

⁴ Boyes et al., (2005). Multiple Use Zoning in UK and Manx Waters of the Irish Sea: An Interpretation of Current Legislation and a Proposed GIS-based Zoning Scheme. Report to Scottish Natural Heritage, English Nature and Countryside Council for Wales. Institute of Estuarine and Coastal Studies, University of Hull

MPAS

10. MPAs are a type of management zone, as well an area in which activities may be zoned. These two scenarios are illustrated below.



11. Given the potential benefits of using zoning as a management tool for sectors other than nature conservation, and the fact that zoning of activities already takes place in UK territorial waters for a variety of reasons, both options should be retained within a system of MSP for the UK.

12. This then raises the question of whether MPAs should be viewed as one of a number of types of zones in MSP or distinct from other types of zone and therefore requiring separate provisions. WWF's Draft Marine Bill promotes the latter view.

DISTINGUISHING BETWEEN ZONING AND MPAS

13. WWF's Draft Marine Bill includes sections on zoning and on MPAs. An important reason for this is that MPAs are working towards objectives that will require management of a range of sea uses, rather than management of a single sector of activity. This is different from sectoral activity zoning regulations where, for example

“fisheries boxes” only regulate fishing activity, and licences for oil and gas extraction or aggregate extraction only regulate the extractive activities within the licensed area, although there are Codes of Practice and liaison with other user groups as well as the option of seeking supporting regulations from these other sectors.

14. MPA regulations should act as an umbrella under which it is possible to instigate all the necessary zoning arrangements for the site, rather than seeking to combine what could be a large number of provisions under many different sectoral management systems. This approach would make the management task streamlined and efficient as well as more clearly driven towards achieving the objectives of the MPA rather than other sectoral interests.

15. A key difference in the objectives for MPAs and zones within a MSP are that the former will give priority to achieving nature conservation objectives, whereas the latter will have the broader objective of sustainable development (of which nature conservation is a part).

PROHIBITIONS OR CONTROLS FOR MPAS AND MARINE ZONES

16. WWF’s Draft Marine Bill includes some ideas on prohibitions and controls within zones or MPAs eg. Biodiversity Stop Orders and Codes of Conduct. A wide range of other tools are available and are in use around the world. Some examples are given below⁵.

17. Permits_ A system of permits provides flexibility over the control of an activity within and MPA as well as setting out the conditions under which an activity can take place within an MPA. It can be supported by detailed provisions, such as quotas, gear types, and may require supporting documentation such as EIA.

18. Skill licenses. Licenses to operate within a zone or MPA can be dependent on individuals or operators being required to demonstrate knowledge and technical competence. This can be supported by training programmes and include knowledge of the management regulations in the area.

19. Education programmes_ These are a fundamental part of any system of controls over activities within MPAs. They ensure users not only have information about the controls, but also the reasons for their introduction, the arrangements for review and how to get involved by commenting or helping to develop the provisions. Education programmes should not be limited to user groups but also be relevant to national and local government, non-governmental organisations, research and technical specialists.

20. Subsidiary regulations_ The legal basis for the establishment of MPAs is likely to be supported by subsidiary regulations which introduce the necessary controls on activities taking place within the MPA. These may be zoning provisions that operate spatially and/or temporarily or other restrictions which apply throughout the MPA e.g. pollution control measures. There may also be a need for supporting regulations which relate to activities taking place outside the MPA but which affect the features, resources, or activities within the protected area.

⁵ Kenchington (1990) Managing Marine Environments. Taylor Francis. London.

21. Compensation. The option of compensation for loss of access/resources has been used in some MPAs. This may be appropriate where there is a loss of long established rights as well as a way of moving from existing resource use to a new regime which enables the MPA to achieve its objectives.

22. Monitoring & research. The condition of the MPA, effectiveness of controls, and level/type of activities taking place within the area are some of the many aspects which require supporting research and monitoring. Information on topics such as these is essential to the determining appropriate controls, the direction of management and providing a sound basis for review of prohibitions and controls.

23. Enforcement. Adequate enforcement powers are essential for supporting the prohibitions or controls introduced for MPAs. Important elements of an enforcement programme include effective penalties for breach of regulations, incentives for self-enforcement, adequate powers for those tasked with enforcement duties (eg. to pursue, apprehend, confiscate equipment and evidence). There may also be scope for users to reinforce or provide enforcement eg. within their peer groups.

24. There are unlikely to be significant difference in the approach to prohibitions and controls in MPAs or marine zones in MSP. What is different is the fact that within MPAs they are being used to achieve the objective of biodiversity conservation whereas in MSP they are being used to further the broader objective of sustainable development.

APPLICATION OF ZONING FOR MULTIPLE USE MPAS

*“Zoning plans will be needed for all but the smallest MPAs because they avoid unnecessary restrictions and facilitate cooperation between the managers and the users”.*⁶

25. Most MPAs are “multiple use areas” – ie. where a mix of activities take place. Zoning is usually an important tool for making this work in a way that does not compromise the objectives of the MPAs. This is done by allocating resources spatially and temporally and therefore taking account of both coincident and sequential uses.

26. The development and maintenance of a successful zoning scheme to manage activities in an MPA needs to take into account a wide range of variables which include knowledge of; the physical and biological characteristics of the area, user activities resources and perceptions, conflicts between different users and conflict between users and the environment.⁷

27. Multiple use areas with Sustainable Development objectives are probably more correctly described as areas subject to Marine Spatial Planning where as multiple use areas with biodiversity conservation objectives are probably more correctly described as MPAs.

⁶ Anon (2000) Marine Protected Areas: Tools for Sustaining Ocean Ecosystems. National Academy Press.

⁷ Laffoley (1995) Techniques for managing marine protected areas: zoning. In; Gubbay (Ed) Marine Protected Areas. Chapman & Hall. London.

28. The following examples show some of the ways in which zoning supports multiple use of MPAs.

29. Multiple-use is a basic principle in the development of the **South Australia Representative System of MPAs (SARSMPA)**. This approach provides for the specific conservation and protection of marine and estuarine ecosystems while also providing for the ecologically sustainable use of the areas. Most activities are allowed within MPAs but there may be zones or periods of time when some are not permitted, primarily to protect significant habitats, species, ecological or cultural features.

30. Five types of zone are used in this scheme to offer various levels of protection.

Restricted access zones

These are generally the smallest component of MPAs and are designed to protect and conserve biologically significant habitats in a pristine condition and for scientific research.

Sanctuary zones

Also known as 'no-take' areas - provide a high level of protection where the removal or harm of plants or animals is prohibited.

Habitat protection zones

They offer a level of protection and allow for a range of recreational and commercial fishing activities that do not harm habitat, interfere with the services that habitats provide to populations that use them, impact significantly on fish populations or ecological processes.

General managed use zones

They allow ongoing use of most recreational and commercial activities, provided that they are ecologically sustainable and consistent with the overall objectives of SARSMPA.

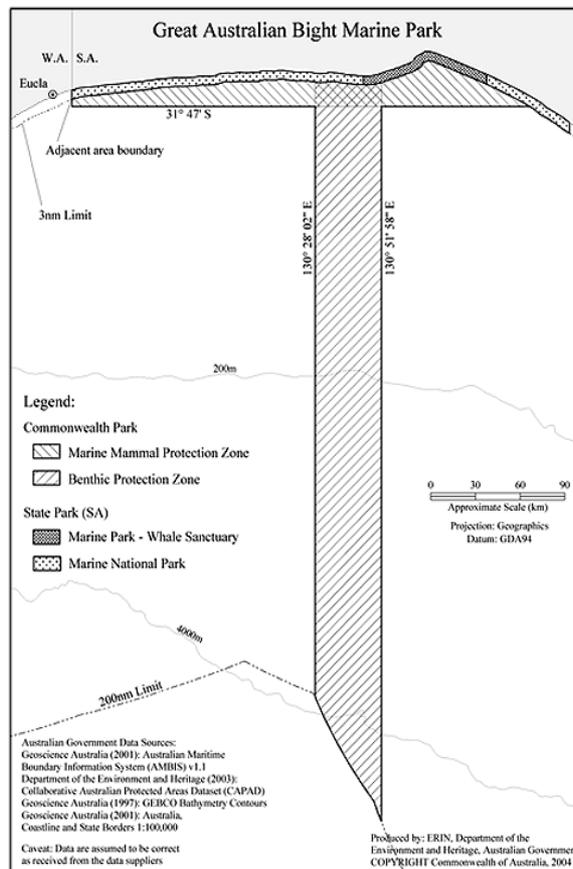
Special purpose zones

They are placed in areas that require specific zoning controls and management; for example, port facilities. The activities permitted in these zones are dependent upon the specific nature of the activities and management needs.

The Great Australian Bight Marine Park is part of the South Australian representative system of MPA. The Park stretches from 200 km west of Ceduna in South Australia to the Western Australian border and includes a 20 nautical wide strip extending to 200 nautical miles offshore and is made up of adjoining Commonwealth and South Australian protected areas.

The Commonwealth waters component of the Marine Park comprises two overlapping zones that form a T shape. Directly adjacent to the South Australian Marine Park is the Marine Mammal Protection Zone that extends from three nautical miles to approximately 12 nautical miles offshore. This area is primarily intended to provide for undisturbed calving for the southern right whale and protection of Australian Sea-lion colonies.

To the west of the Head of Bight is the Benthic Protection Zone, a 20 nautical mile-wide representative strip of the ocean floor extending 200 nautical miles from the edge of the State Park (at three nautical miles) directly south to the edge of the Exclusive Economic Zone of Australia. This area aims to protect a sample of the unique and diverse plants and animals that live on, and are associated with, the ocean floor. The Commonwealth waters component encompasses the waters, sea-bed and the subsoil to a depth of 1000 meters below the sea bed, total area is 19,769 square kilometers.



31. Multiple use zoning is well established in US National Marine Sanctuaries. In the **Florida Keys National Marine Sanctuary (FKNMS)** the stated objective of zoning is to focus protection on critical portions of sensitive habitats while not restricting activities more than necessary. Only a small part of the Sanctuary is zoned and in the remaining area the focus of management is on improving water quality and providing habitat protection. Three types of zones are identified in the Sanctuary; Ecological Reserves, Sanctuary Preservation Areas and Special Use Areas. These areas are strictly protected and are defined to protect critical habitat, preserve species diversity and relieve pressure from some coral reef areas.

32. The approach taken in the FKNMS also illustrates how zoning arrangements that are already present (in this case the Existing Management Areas such as State Parks and Aquatic Reserves and the Wildlife Management Areas which are the responsibility of the US Fish and Wildlife Service) can be incorporated into the MPA zoning scheme.

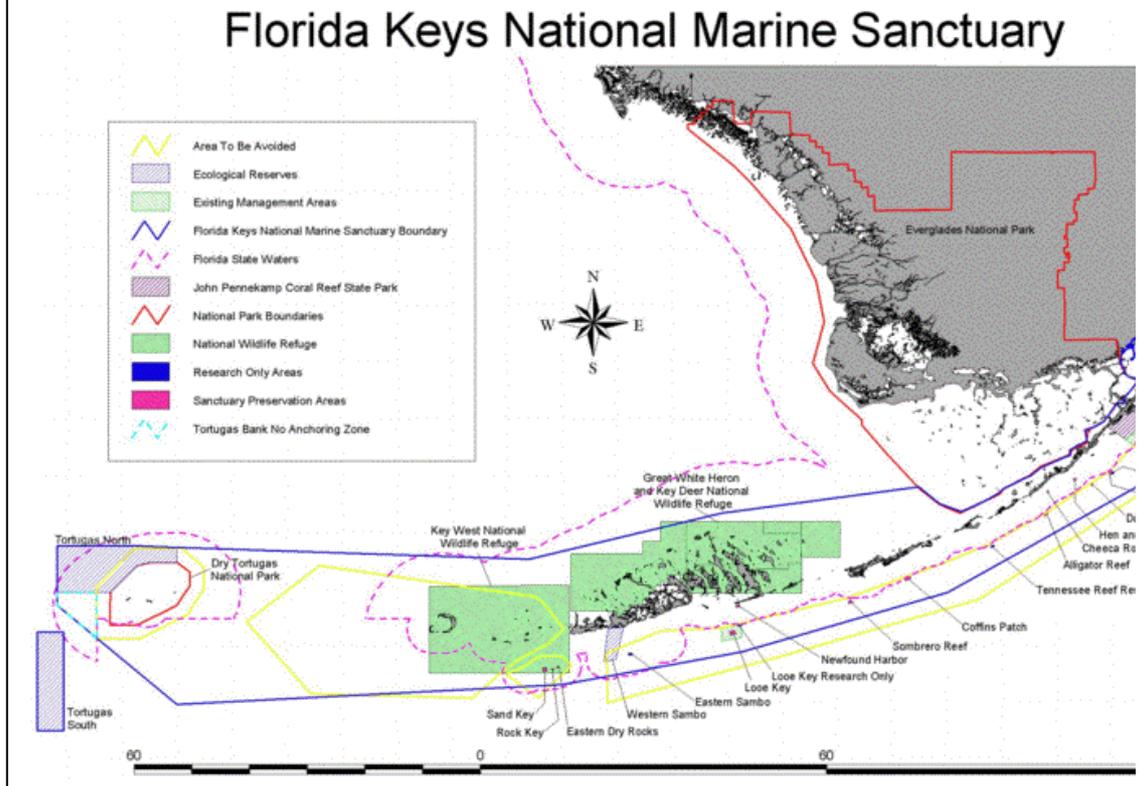
Florida Keys National Marine Sanctuary

Activities prohibited in the Ecological Reserve and Sanctuary Preservation Areas:

- Discharging any matter except cooling water or engine exhaust.
- Fishing by any means; removing, harvesting, or possessing any marine life. Catch and release fishing by trolling will be allowed in Conch Reef, Alligator Reef, Sombrero Reef, and Sand Key SPAs only.
- Touching or standing on living or dead coral.
- Anchoring on living or dead coral, or any attached organism.

Special Use Areas:

These are all designated as research-only areas. No person may enter these areas except as specifically authorized by a valid permit.



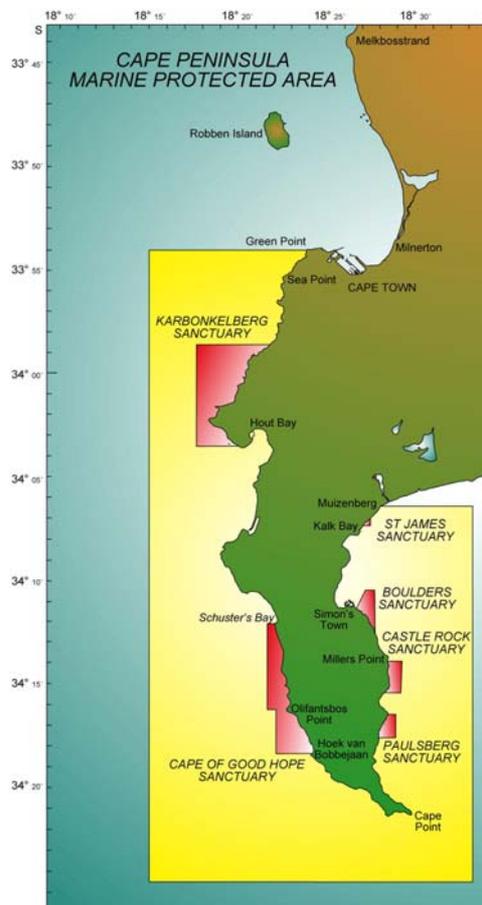
33. Findings from the Marine Zone Monitoring Programme indicate some success as a result of zoning particularly with regard to a shifting food webs within the fully protected marine zones, towards a more natural un-fished state⁸. The number and size of spiny lobster and certain reef fish have increased within the fully protected marine zones. Benthic species such as corals and sponges have not shown significant changes, possibly because the zoning plan was implemented relatively recently. No negative socioeconomic impacts of marine zoning were determined.

⁸ Belfiore *et al.*, (2004) Incorporating Marine Protected Areas into Integrated Coastal and Ocean Management: Principles and Guidelines. IUCN, Gland, Switzerland.

34. Around 15% of South Africa's 3 000km coastline is covered by protected areas. Both coastal and marine protected areas are managed through the establishment of "controlled zones" allowing for limited fishing, "restricted zones" allowing for controlled tourism development while protecting fish populations, and "sanctuary zones" in which complete protection is applied. Although less complex than the examples given above, this approach still allows multiple use and is seeking recovery of over fished species as well as being driven by conservation objectives.

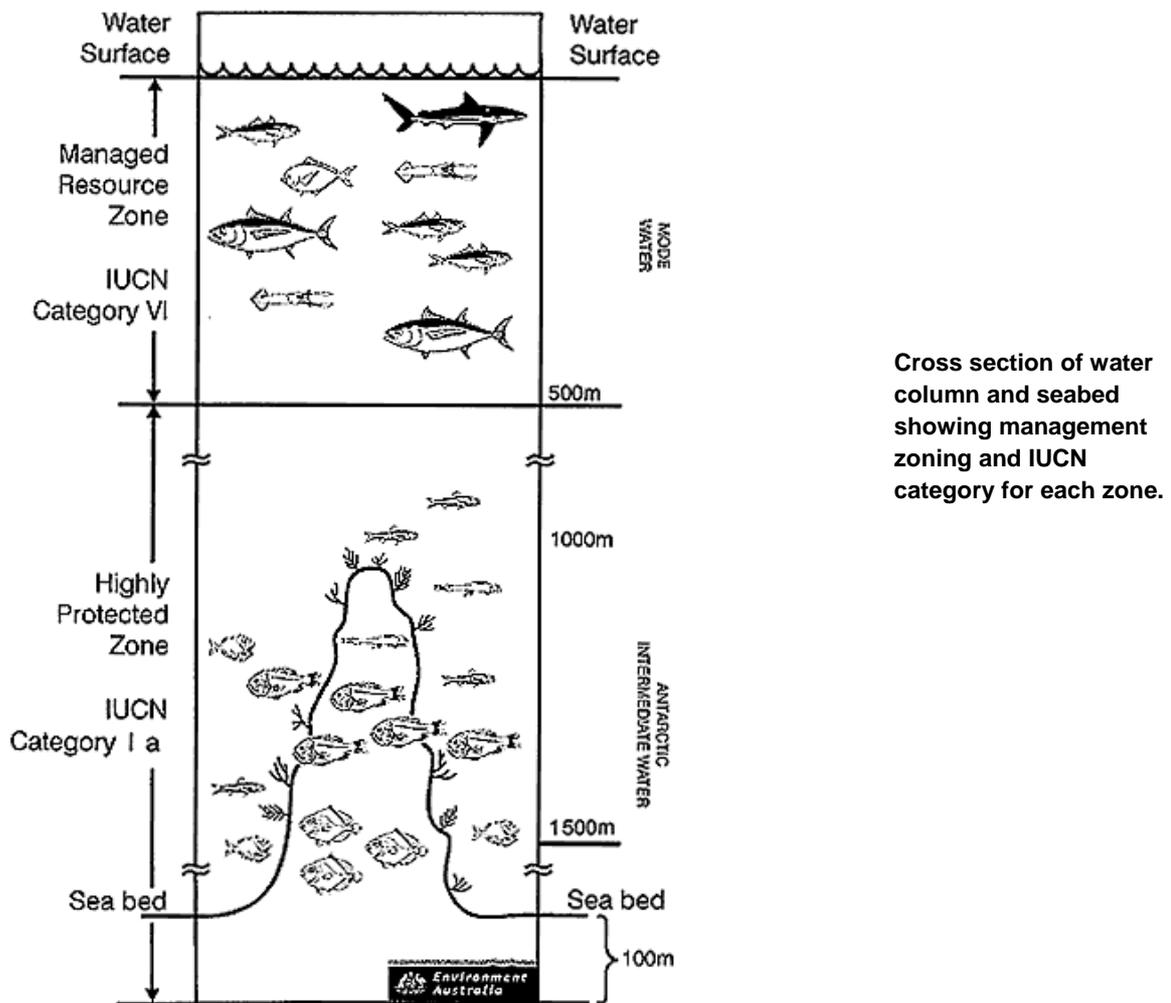
The **Cape Peninsula MPA** is one of the most diverse and productive stretches of coastline in South Africa as well as being close to the large metropolitan area of Cape Town. The exploitation of natural resources along the Cape Peninsula coastline is an important source of recreation, employment and food as well as the area with the longest history of commercial fishing in South Africa.

There are six sanctuary zones and one controlled zone in this MPA. All forms of fishing are prohibited in the sanctuary zones. The purpose of the controlled zone is to allow controlled and monitored exploitation of marine species that is consistent with the objectives of the MPA. Permits are used to regulate diving and fishing.



35. The Cape Peninsula MPA was declared in 2004 therefore it is too early to judge the effects of the zoning scheme however this approach was model on modelled on the success of the Greater St.Lucia Wetland Park where prohibitions on mining were introduced in 1996 and an integrated development and land-use planning strategy developed for the entire region.

36. The **Tasmanian Seamounts Reserve** is a rare example where activities (principally fishing) are zoned by depth. This approach has been taken because of the depth of the protected area 1000-2000m below the surface, and because the fishing activities taking place in the shallow waters are not believed to have a major impact on the seamount fauna.



37. The best known example of a multiple use MPA is probably the Great Barrier Reef Marine Park. Zoning schemes were developed over a number of years to cover the entire area of the park. The multiple use zoning approach has provided high levels of protection for specific areas while allowing reasonable activities to occur in other zones and separate out conflict uses. Zoning has been regarded as the cornerstone of the planning and management. The strategy is based on the premise that broad-area integrated network of zones within a large MPA is more effective than a series of small isolated highly protected areas within a broader unmanaged area⁹.

⁹ Belfiore *et al.*, (2004) Incorporating Marine Protected Areas into Integrated Coastal and Ocean Management: Principles and Guidelines. IUCN, Gland, Switzerland.

38. A review of the first 20 years of the zoning arrangements highlighted the fact that many habitats had minimal protection as most of the highly protected areas were focussed on coral reefs. This has been addressed in the revised zoning plan which identified 70 distinct habitat types in the Park and sought to protect a minimum of 20% of each within 'no-take' areas. The review suggests that zoning has only been partially successful in protecting the value of the Reef. There is increasing evidence that run-off is damaging inshore areas demonstrating how effective protection of a large multiple-use MPA needs to work in tandem with adjacent land management objectives.

39. The zoning provisions for the Great Barrier Reef Marine Park were developed in partnership with stakeholders and tested through public consultation but with final decision resting with the Marine Park Authority. A similar approach could be used for multiple-use MPAs in the UK. An important guiding principle in such areas should be to seek the best possible solution to achieve the objectives of the MPA [ie. greatest likelihood of achieving the objectives of the MPA] rather than to seek the best compromise [ie. the greatest number of stakeholder satisfied with the outcome].

ACTIVITIES WITHIN MPAS

40. Where an MPA has been established for the principle purpose of protection sites and features, this should not mean that all activities are automatically prohibited (ie. that all MPAs should be No-take zones). However, decisions on which activities should be permitted should ideally be based on a reversal of the burden of proof. Activities, the scale on which they are proposed, and how they may interact with existing activities should not have a significant impact on the principle purpose of establishing the MPA. The definition of "significant" is clearly crucial, but is probably more realistic to use this term rather than that having a requirement that activities should have no impact at all on the MPA interest.

41. The level of control over activities taking place in MPAs should be incorporated into the zoning scheme if there is a spatial element. The main steps would be:

- 1 Initial permission to undertake activity (NB. An assumption that even existing activities be reviewed as required by the Habitats Directive)
- 2 Regular reporting on the details of the activity (how much, where, issues)
- 3 Regular review of potential cumulative and in-combination effects.
- 4 Feedback into regulation/controls required.

42. The legal provisions under which activities are regulated could remain with the existing regulators but should be linked to powers of the MPA management body who would have the final say on compatibility with the MPA objectives and take an overview of control of activities within an MPA. There may be a need for an independent body to assess or arbitrate on this matter.

43. Zoning of activities, as well as the type and scale of different activities should be subject to review within the MPA planning process. This will enable managers to respond to changing patterns of activity and the condition of the MPA. Time limited closures or rotation in the permissible use of areas can be accommodated by using a review process.

LEGAL POSSIBILITIES OF PROHIBITING FISHERIES & SHIPPING BEYOND 200NMS

44. Management of activities (including prohibition of activities) on the High Sea will need to operate in a way which is consistent with the United Nations Convention on the Law of the Sea (UNCLOS). The Convention embodies the notion that the High Seas are open to all States and recognises the traditional high seas freedoms which include navigation and fishing however, these rights are to be exercised under the conditions laid down by the Convention and other rules of international law. Obligations include protecting and preserving the marine environment, conserving natural resources and co-operating with other States in this regard. There are also a number of Articles under the Convention which are relevant to the creation of MPAs (eg. Articles 192, 193 and 194).

45. Possible legal options for managing/prohibiting activities on the High Seas include¹⁰:

- (a) Agreement between State Parties to modify or suspend the operation of provisions of the Convention. This would only apply to the States making the agreement and not affect the rights of other Parties.
- (b) Agreement through the International Seabed Authority (ISA). The ISA has authority to oversee and control exploration and exploitation of seabed resources and can prohibit such activities where “substantial evidence indicates the risk of harm to the marine environment from such activities”.
- (c) International dispute resolution mechanisms set out in UNCLOS.

46. The UN Informal Consultative Process on Oceans and the Law of the Sea (UNICPOLOS) for the UN General Assembly is one avenue through which fishing restrictions on the High Seas can be pursued and the group has recently called for a moratorium on bottom trawling in the High Seas. This is supported by the UN Millennium Project report on Environment and Human Well-being which sets out principles on which countries can determine steps towards achieving environmental sustainability.¹¹

47. The Convention of Biological Diversity (CBD) applies to both marine and terrestrial areas within the limits of national jurisdiction and to processes and activities beyond the limits of national jurisdiction where the Contracting Party has responsibility or jurisdiction over the activity or where activities within its limits have impacts beyond national jurisdiction. Contracting Parties may therefore co-operate to establish a system of protected areas beyond national jurisdictions although any management measures would only apply to the Parties making such an agreement.

¹⁰ From Young (2003) Developing a Legal Strategy for High Seas Marine Protected Areas. IUCN, WCPA and WWF High Seas Marine Protected Areas Workshop, Malaga, 15-17 Jan, 2003.

¹¹ Melnick *et al* (2005) Environmental and Human Well-being: a practical strategy. UN Millennium Project Task Force on Environmental Sustainability. Earthscan. London.

48. With specific reference to prohibiting fishing activity there may be scope for action under the following legal frameworks:

- (a) The UN Fish Stocks Agreement¹². This includes provisions for Parties to adopt measure to ensure long-term sustainability of straddling and highly migratory fish stocks implement conservation and management measures and protect biodiversity in the marine environment.
- (b) Regional Fisheries Agreements. The NEAFC is most relevant to areas adjacent to the UK Continental Shelf.
- (c) National, bi-lateral or multi-lateral agreements between like-minded countries

49. With specific reference to prohibiting shipping there may be scope for action under the following legal frameworks although this could probably never be an absolute given International agreements regarding safety at sea.:

- (a) through the IMO – perhaps by designation of PSSAs
- (b) National, bi-lateral or multi-lateral agreements between like-minded countries.

50. All the ideas discussed above need legal examination.

KEY CONCLUDING POINTS

- The Government Marine Bill should include separate provisions for zoning and MPAs
- Zoning may take place within MPAs to support conservation objectives and within a MSP to support sustainable development objectives.
- MPA provisions should provide an “umbrella” for regulating all activities within the MPA although the powers to regulate such activities may be held by different sectors.
- Zoning within MPAs should be focussed on protecting critical habitats within a wider protected zone
- Zoning provisions within MPAs should be drawn up with conservation objectives in mind rather than broader sustainable development objectives
- Zoning need not be restricted to activities which take place on the surface or seabed
- Most MPAs include areas where large number of activities can take place although not necessarily in an unlimited fashion. This can be facilitated by multiple-use zoning
- Most MPAs include highly protected zones. This can be part of multiple-use zoning
- Zoning schemes should be reviewed and can be used to test the effects of different management regimes
- Zoning plans should consider local use patterns, expectations and knowledge of users and be developed through public consultation

¹² United Nations Agreement for the Implementation of the Provision of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks.