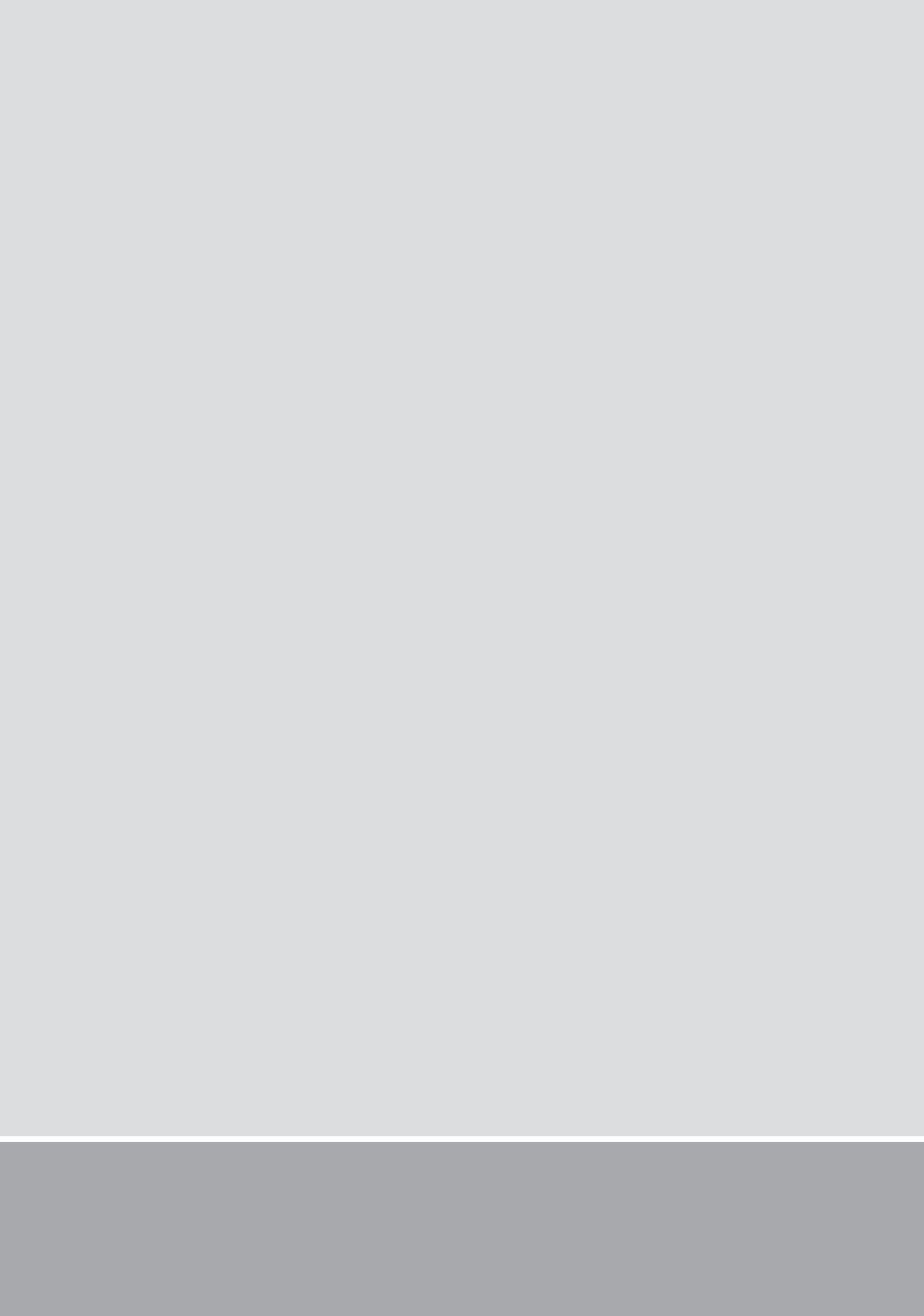# APPENDICES

New Zealand marine protected areas
principles and protection standard

Network design principles[1]

1. The MPA network will protect examples of the full range of natural marine habitats and ecosystems.

2. MPAs should be designated based on a consistent approach to classification of habitats and ecosystems.

3. The MPA network should be viable.

4. National priorities for additions to the MPA network will be developed, and reviewed on an annual basis.

5. An evaluation programme will be undertaken.

5. A monitoring programme will be undertaken.

Planning principles

1. Every MPA should be designed on the basis that it is representative of one or more habitats or ecosystems, and in a manner consistent with the national network priorities and the MPA implementing principles.

2. The management tool(s) used at a site must be sufficient to meet the protection standard.

3. The special relationship between the Crown and Māori will be provided for, including kaitiakitanga, customary use and mātauranga Māori.

4. MPA establishment will be undertaken in a transparent, participatory, and timely manner.

5. Adverse impacts on existing users of the marine environment should be minimised in establishing MPAs.

6. The management tools used to establish MPAs should be consistent and secure in the long term, subject to any necessary changes to allow them to better achieve the MPA Policy objective, taking into account natural dynamics.

7. Best available information will be taken into account in decision-making.

8. Decision-making on management actions will be guided by a precautionary approach.

9. The MPA management regime must be enforceable.

10. MPA research will be effectively planned and co-ordinated.

Marine protected areas protection standard[2]

2.4 Maintenance and recovery of physical features and biogenic structures

This aspect of the MPA protection standard looks to ensure the seabed in an MPA is protected from physical damage. To ensure this, activities that may cause significant damage to the seabed and associated biodiversity should be prohibited from an MPA.

Whether a particular activity causes damage to the seabed will depend on the nature of the seabed. Those seabed habitats that are particularly fragile will be damaged more easily than those that are exposed to natural disturbance.

When considering the effect of fishing activity, the main fishing methods used in New Zealand waters were ranked according to the relative damage they cause to the seabed. As a result, bottom trawling, dredging and Danish seining were considered not to allow maintenance and recovery of physical features and biogenic structures. As such, the presumption is that these methods would not be permitted within an MPA.

Benthic netting and potting were considered to cause only moderate damage. These methods would be allowed in an MPA unless the seabed was comprised of particularly fragile biogenic habitats. Other methods may be deemed acceptable but would need also to be considered as part of the second half of the MPA protection standard.

2.5 Ecological systems, natural species composition and trophic linkages

This second aspect of the MPA protection standard looks to ensure any activity within an MPA does not unduly disturb ecological systems, natural species composition and trophic linkages.

When considering the effect of fishing activity, it is difficult to set a level of extraction that would ensure the MPA protection standard is met. Setting an acceptable quantity of extraction would require large amounts of information about the species present in an area and how they contribute to the associated ecological system. There are also considerable problems with compliance when setting catch limits at small spatial scales. Because of these difficulties, fishing methods have been used as a proxy for extraction from potential MPAs.

2.6 Coastal MPAs

It is considered that purse seining, midwater trawling, midwater gillnetting and benthic netting either extract large quantities of fish over short time periods and/or are relatively unselective in nature. Many of the species harvested by the methods in coastal areas could have close affinities to the benthic environment. As such, these methods will probably not be permitted within an MPA.

Other methods such as benthic longlining, potting, pelagic longlining and hook and line fishing do not generally extract such quantities of fish over short time frames and are more selective. These methods may be allowed within an MPA subject to the case by case analysis describe below.

Case by case analysis

A case by case approach is necessary for two reasons. First, using fishing methods as a proxy may not accurately reflect the actual extraction from a site as much depends on the frequency and intensity with which that method is used.

Second, there are statutory requirements in the Fisheries Act that mean such an analysis is necessary prior to any method prohibition.

The factors that wold be considered in a case by case analysis are further outlined in the implementation section.

2.7 Deepwater MPAs

In November 2007, government established 17 Benthic Protection Areas, primarily in New Zealand's Exclusive Economic Zone (EEZ). These areas protect about 30% of the seabed in the EEZ. Because of the contribution these protected areas make to benthic protection, government has chosen not to implement the MPA Policy in the EEZ until 2013. Implementing the MPA Policy will concentrate on Territorial Sea until then.

Prior to implementing the MPA Policy in the EEZ, government will revisit both the classification system and protection standard to incorporate improved knowledge and research conducted between now and 2013.

Design guidelines used to identify and select potential protected areas[3]

Site identification and protected area design guidelines

Protect whole habitats and ecosystems – It is desirable that sites be selected on the basis that whole habitats or ecosystems can be protected, particularly where a habitat or ecosystem represents a relatively small mapped unit. For example it would be desirable to incorporate a whole reef in a protected area rather than establishing a boundary that cuts across a reef.

Size of protected areas – Protected areas may be of various shapes and sizes but should be of sufficient size to provide for the maintenance of populations of plants and animals. For the same amount of area to be protected it is desirable to protect fewer, larger areas rather than numerous smaller areas. This helps maintain healthy self-sustaining populations resilient to 'edge effects' resulting from use of the surrounding/adjacent areas. This also allows for more efficient and cost effective compliance and law enforcement.

Maximise connectivity – The design of the protected areas network should seek to maximise and enhance the linkages among individual protected areas, groups of protected areas within a given biogeographic region, and across biogeographic regions.

Represent latitudinal and longitudinal variation – Many processes create latitudinal and longitudinal (cross-shelf) differences in habitats and ecosystems. This diversity is reflected partly in the distribution of the biogeographic regions, but care should be taken to identify potential protected area sites that include differences in habitats and ecosystems that cover both latitudinal and longitudinal or cross-shelf ranges. It may be convenient to extend protected areas from the intertidal zone to deep waters offshore.

Consider sea and adjacent land uses in planning protected areas – Placement of protected areas should take into account the adjacent terrestrial environment (including islands) and associated human activities. Past and present uses may have influenced the integrity of biological communities, and designers should consider these effects, where known, when proposing the location of protected areas. For example, existing no-take protected areas and areas adjacent to terrestrial national parks are likely to have greater biological integrity than areas that have been used heavily for resource exploitation.

Keep boundaries simple and aim for low boundary to area ratio – To achieve this, protected area design should aim for simple shapes and reduced fragmentation of areas. This can be achieved by using straight boundary lines and minimising the perimeter-to-area ratio. Protected areas should also be designed so they can be realistically enforced. Users and surveillance staff find straight lines much easier to find and follow than lines following depth contours or distance from land or reefs. Squares are easier for users and compliance staff to find and work with than odd shapes. Boundaries should follow major latitude and longitude lines where possible. This makes it easier for users to match with charts. For coastal zones, clear sight lines on-shore or using other fixed objects are good alternatives to areas defined by coordinates.

Site selection guidelines

Primary considerations

Protect the full range of marine habitats and ecosystems – The MPA Policy calls for the protection of "the full range of marine habitats and ecosystems" as well as those which are rare, distinctive or internationally or nationally important. Within each biogeographic region, the approach to the classification of habitats and ecosystems should be used as a pragmatic guide to the representation needed to achieve this goal.

Cultural use – Consider information on traditional use, values, current economic value and Treaty settlement obligations.

Adverse impacts on users – Where there are choices of several sites that would add a similar ecosystem or habitat to the protected area network if protected, the site(s) chosen should minimise adverse impacts on existing users and Treaty

settlement obligations. Where there is a choice to be made among minimum impact sites, selection may also be guided by:

- Accessibility for management and enforcement requirements; and

- Benefits such as educational, diving and tourism opportunities.

Social and economic interests – When choosing among potential sites, information related to social and economic interests should be considered to minimise adverse impacts on existing users. Such information may include: current and potential use for the purpose of extraction or exploration, or contribution to economic or intrinsic value by virtue of its protection.

Secondary considerations

Number of protected areas – The number of potential habitat and ecosystem types, defined by the classification and mapped within a biogeographic region, does not equate to the number of protected areas required to protect the full range of natural marine habitats and ecosystems. Multiple habitats should be protected within each protected area.

Have fewer larger (versus numerous smaller) protected areas – It is beneficial to have fewer larger protected areas representative of more than one habitat or ecosystem than a large number of small protected areas.

Susceptibility to degradation – Incorporate information on the location of, for example, coastal structures, dredging or dumping sites that potentially may impact on the integrity of the site.

Compatibility with adjacent land-use – It is desirable to design protected area boundaries to align with other protected areas. This includes national parks on land and other protected waters, such as fish habitat. This allows opportunities for collaborative compliance efforts between agencies.

Replication – Consideration should be given to whether the site provides replication of habitats and ecosystems in a biogeographic region.

Tool selection guidelines

The size of the MPA – Larger MPAs will be more likely to compensate for any higher level of biological extraction when compared to smaller MPAs. As such, higher

quantities of biological extraction would be acceptable in larger MPAs compared to those of smaller size.

The likely level of biological extraction from an MPA (from all sources) – If the biological extraction from a potential MPA is having an adverse effect on the aquatic environment or creating a sustainability concern, then that level of extraction is not consistent with the protection objective of the MPA Policy. Method prohibitions would be put in place to increase the biomass to levels acceptable under the Fisheries Act.

The frequency of extraction – A method such as recreational line fishing may not extract large quantities of species on any one occasion. However, where such a method is used frequently and/or by a large number of people, this may lead to a similar result as would large scale methods such as trawling.

The type of species being extracted and its ecological importance – Because more mobile species cannot be constrained within the boundaries of MPAs, MPAs are better at protecting species that are sedentary or have limited mobility. For this reason, case by case analyses will consider those mobile species that have some seasonal affinity with the areas but will focus on sedentary species or those with limited mobility.

Endnotes

1   Extracted from Department of Conservation and Ministry of Fisheries, 2005, 16-20
2   Extracted from Ministry of Fisheries and Department of Conservation 2008, 10-12
3   Extracted from Ministry of Fisheries and Department of Conservation 2008, 19-22