

# **INQUIRY INTO MARINE PROTECTED AREAS**

## **Submission by the Australian Association for Maritime Affairs**

### ***Preamble***

The role of the Australian Association for Maritime Affairs, formerly the Australian Centre for Maritime Studies, is to generate greater public awareness and discussion of maritime affairs generally. It is not oriented to single industries or interests but provides a focal point for all those with an interest in maritime affairs, especially those people in business, tertiary institutions, the marine professions, defence forces and the public service who are concerned with any aspect of Australia's maritime affairs. This submission has been developed as a contribution for consideration by the Inquiry. It does not purport to carry the personal endorsement of all members.. There may be points where individual members disagree or are unable to comment because of their employment.

### ***Introduction***

The Australian Association for Maritime Affairs (AAMA) welcomes this Inquiry as an important opportunity to define the roles and management needs of Marine Protected Areas in the broader context of management of Australia's Exclusive Economic Zone.

As a party to the United Nations Convention on Law of the Sea, Australia has acquired a maritime jurisdiction of 16.1 million square kilometres. It includes major components of the large marine ecosystems of the Southern, Pacific and Indian Oceans and the worlds most biologically diverse zones in the Timor and Arafura Seas and Torres Strait. This is the third largest maritime jurisdiction in the world and more than twice as large as Australia's terrestrial jurisdiction.

Australia has accepted the obligation under Article 192 to protect and preserve the marine environment. Under Article 193 Australia has the sovereign right to exploit its natural resources pursuant to its environmental policies and in accordance with its duty to protect and preserve the marine environment.

As a party to the UN Convention on Biological Diversity and in accordance with the Jakarta Mandate of that Convention, Australia has accepted obligations to promote integrated marine and coastal area management, networks of marine and coastal protected areas, and other conservation areas.

In 2002 Australia was one of 189 countries at the World Summit of Sustainable Development that called for the establishment of the Global Representative system of Marine Protected Areas by 2012.

“Government delegates negotiated and agreed on an action plan for oceans, coasts, and islands, with quite specific targets and timetables for action. Of special interest to the MPA community is the timetable for applying an ecosystem approach to marine

areas by 2010 and for establishing a global network of marine protected areas by 2012. Important targets were also established on fishery issues (e.g. managing fishery capacity by 2005 and controlling illegal fishing by 2004), and in other ocean-related areas as well.”<sup>1</sup>

***The roles of protected areas in the management of marine ecosystems***

Marine Protected Areas (MPAs) may have many objectives which are addressed by specific controls on the purposes for which the areas may be used. In 1986 it was possible to distinguish 91 different categories of Marine Protected Area on the basis of permitted and prohibited activities, the range and combination of controls and the legal basis of protection.<sup>2</sup> A similar or greater range exists today but through analysis and grouping of objectives and permitted activities MPAs may be identified in relation to the 6 Categories of Protected Areas established by the World Conservation Union, IUCN<sup>3</sup>.

**Table 1. IUCN Protected Area Categories**

Category	Title	Main Protected Area Management Objective
I	Strict Nature Reserve	Science or wilderness protection
II	National Park	Ecosystem protection and recreation
III	Natural Monument	Conservation of specific natural features
IV	Habitat/Species Management Area	Conservation through managed intervention
V	Protected Landscape/Seascape	Landscape/seascape conservation and recreation
VI	Managed resource Protection Area	Sustainable use of natural ecosystems

Any of the categories can have a role in marine biodiversity management. However there are three essential elements in a comprehensive strategy for management of marine biodiversity and ecosystem processes.

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<sup>1</sup> Ehler, C 2002 MPA NEWS Vol. 4, No. 3 September 2002 MPA NEWS Vol. 4, No. 3 September

<sup>2</sup> Silva, M.E., Gately, E.M., Desilvestre, I. 1986 A bibliographic Listing of Coastal and Marine Protected Areas: A Global Survey. Woods Hole Oceanographic Institution, Massachusetts, USA. Report WHOI-86-11. 156pp

<sup>3</sup> IUCN, 1994. Guidelines for Protected Area Management Categories. IUCN Cambridge UK and Gland Switzerland

- large area ecosystem scale management of resources, uses and impacts to ensure that they are sustainable.
- incorporated within the strategy, the establishment of site scale management through strictly protected areas, national parks or no-take reserves in which no harvesting of resources is permitted at any time.
- establishment of habitat and species management areas where a range of activities including some harvesting of marine species may occur provided they do not damage or destroy habitat or the survival of species.

In terms of the IUCN categories this equates to overall category VI with mandatory core areas of category I or II. and other areas managed as Category IV as required.<sup>4</sup>

### ***Designing and managing Marine Protected Areas***

The nature and scale of marine ecosystems and of the linkages within them, between them, and with land masses, impose some considerations additional to those which underlie the development of most terrestrial protected areas.

Within and between large marine ecosystems the water column above the seabed is an active mass transport link. Plants, animals and nutrients or pollutants in a water mass travelling at 1 knot will travel more than 1,000 kilometres in a month. Sea water masses move in complex ways with tidal movements resulting from lunar and planetary gravitational forces, with ocean currents and gyres resulting from the rotation of the earth and seasonal warming and cooling of surface waters in high latitudes, with wind generated currents, storms and inputs from river-flows. Flows are rarely consistently unidirectional, flow reversals are common and mixing at the boundaries of water masses can be substantial. While this is the norm, there are situations such as the southern coast of Australia where the origin and temperature of adjacent water masses are such that there is little cross boundary biological survival and consequently high levels of endemism.

Water flows on land are generally unidirectional. Water, ice, sediments and debris flow down catchments, picking up materials and nourishing systems as they pass through to oceans or inland lakes. There is normally no flow between catchments or up catchments. Materials from habitats in the upper reaches of a catchment affect habitats downstream but the reverse is extremely rare. The geological structure of landmasses and the distribution of types of nutrients and trace elements contained in rocks and soils catchments often create distinct boundaries for distinctive, localised, isolated and often endemic ecosystems

The water column is a primary production habitat. It sustains a food chain based on the photosynthesis of unicellular algae or phytoplankton in the top few metres. It is an ecosystem with species that pass their whole life drifting and swimming in the water column. It is also the nursery and distribution system for many other ecosystems

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<sup>4</sup> Kenchington, R. A. 2003. Managing marine environments: an introduction to issues of sustainability, conservation, planning and implementation. *In Conserving marine environments. Out of sight out of mind.* (PA Hutchings and D. Lunney Eds) Royal Zoological Society of New South Wales. P 45.47

where most or many animals spend their earliest life as planktonic and, later, swimming larvae until they are ready to settle in their adult habitat.

At any location in the sea there is generally some form of seabed community and above it an upper water column community. In deeper waters beyond the reach of surface waves and currents there may be 2 or more distinct water column communities. This can also be reflected in patterns of human use of the sea. Within a short period of time the seabed, the water column and the sea surface at a given location may be used for three or more entirely different activities. The seabed may be used for trawling or scientific research, aquaculture or mineral production; the water column may be used for pelagic fisheries for mackerel or tuna or for aquaculture while the surface may be used for commercial or military shipping and recreational boating as well as operation of vessels engaged in seabed and water column activities.

In comparison, the air column above a terrestrial environment sustains no primary productivity. It is a transport medium for pollen, spores and seeds, insects, spiders, birds and bats. Some animals may spend much of their time airborne feeding on smaller flying animals that derive their nourishment from the land surface but the air column is not a primary productive or mass transport ecosystem. The condition and management of a land area is usually determined by a single or dominant use which precludes other uses.

### ***The necessary elements of a plan to protect marine biological diversity***

There are 3 core issues: the extent of no-take areas; the capacity to apply and the effectiveness of measures other than no-take to protect habitat, particularly seabed habitat and the ability to manage fisheries on a basis that is demonstrably and auditably sustainable in terms of impacts on biological diversity.

Conservation of marine biodiversity may be approached on the basis of defining and managing no-take areas, fully protected from all extractive uses, on the basis that these will be sufficient to maintain biological diversity even though the remainder of the marine environment is not managed for sustainability. Presumably the poorer the management of uses in surrounding areas the greater is the pressure and need for large no-take areas.

Measures other than total no-take can play an important role where conservation is addressed alongside fisheries managed within objectives of demonstrable ecological sustainability. Trawling and dredging are practices that destroy seabed habitat. Fishing methods that do not destroy habitat and that are managed for verifiable sustainability may play a conservation role through habitat management of components of a large marine ecosystem as IUCN Category IV protected areas.

The background or default management category equating to IUCN Category VI should buffer the highly protected and habitat protection areas and have core objectives and performance criteria for auditable sustainability of the combined and cumulative outcomes of all uses and impacts. This should include matters such as identification, elimination or control of marine pests and management of operational and catastrophic pollution.

A review by Ardron in 2003<sup>5</sup> identified that the percentage of strictly protected marine habitat needed to assure maintenance of biological diversity fell in the range 10-50%. Gladstone (2006)<sup>6</sup> has concluded that modelling of coastal reef fish communities suggests that a 30% MPA target will cover 75% of surveyed species. A policy statement by the Pew Fellows in Marine Conservation<sup>7</sup> recommended that nations “place no less than 10% and as much as 50% of each ecosystem in no-take zones, according to identified needs and management options in a particular ecosystem” depending on species and assumptions. The position of the Parties to the Convention on Biological Diversity calls for “at least 10% of each of the world’s marine and coastal ecological regions to be effectively conserved”<sup>8</sup>.

Australia is committed to implementing a national representative system of marine protected areas as a component of a global system. It is also working with Pacific and Indian Ocean Island States committed to establishing representative marine protected areas in their jurisdictions.

These issues cannot be effectively addressed in circumstances of sectoral competition. The management of Marine Protected Areas, Fisheries and other uses of marine resources and impacts on them should be addressed together. In such a regime specialist sectoral agencies should continue to have responsibility for their areas but be subject to an overarching plan developed on a basis of clear operating principles with auditable performance measures to achieve conservation of biological diversity and demonstrable sustainability at the ecosystem scale of fisheries, other uses and impacts. This is implied by Australia’s Ocean Policy but there is no clear legislative basis.

It is important to ensure an open, accountable and multi-sectoral process for oversight and audit of the activities of all the various specialist agencies under a plan. The extent and importance of biophysical linkages in marine systems should be reflected in the policy and administrative systems established to manage them.

### ***Surveillance and enforcement of Marine Protected Areas***

An issue of particular importance in relation to the establishment of the Australian national representative system of marine protected areas is the adequacy of resources to provide adequate surveillance and enforcement capacity within Australia’s maritime jurisdiction.

There are three components of surveillance and enforcement capacity. State and Territory agencies; Coastwatch and the National Marine Unit operated by the Australian Customs Service; and the Australian Defence Force.

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<sup>5</sup> Ardron, J. (2003) BC Coast Information Team Marine Ecosystem Spatial Analysis, v. 1.2. *Excerpted and revised from:* Rumsey, C., Ardron, J., Ciruna, K., Curtis, T., Doyle, F., Ferdana, Z., Hamilton, T., Heinemyer, K., Iachetti, P., Jeo, R., Kaiser, G., Narver, D., Noss, R., Sizemore, D., Tautz, A., Tingey, R., Vance-Borland, K. *An ecosystem analysis for Haida Gwaii, Central Coast, and North Coast British Columbia*. Sept. 22, 2003. (184 pages.) [www.livingoceans.org/library.htm](http://www.livingoceans.org/library.htm) 44 pages.

<sup>6</sup> Gladstone, W (2006) 'Requirements for marine protected areas to conserve the biodiversity of rocky reef fishes', *Aquatic Conservation: Marine and Freshwater Ecosystems*, vol. 15.

<sup>7</sup> <http://www.pewmarine.org/pdf/MPA%20Statement%20formatted%20FINAL.pdf>

<sup>8</sup> UNEP 2005:44

Within the coastal waters jurisdictions of the States and the Northern Territory, police, fisheries, boating safety and national parks services have local aerial surveillance and surface patrols with specialised vessels up to 22 metres hull length. Specific arrangements differ between the States and the Northern Territory.

Around the coast and islands of mainland Australia and out to 200 nautical miles the Customs Department is responsible for Coastwatch which provides aerial surveillance for a client list that includes 12 Commonwealth Departments and agencies<sup>9</sup>:

The National Coastwatch Centre in Canberra coordinates aerial surveillance data with States and Territories and defence surveillance data relevant to civil functions.

Customs also operate the National Marine Unit (NMU) which has a similar client list to its Coastwatch service. The National Marine Unit operates around the Australian coastline and out to and sometimes beyond the 200 nautical mile limit of the EEZ in an area covering about 9 of the 16.1 million square kilometres of Australia's maritime jurisdiction. The NMU fleet consists of eight, 38 metre Bay class Australian Customs Vessels with other vessels chartered as required. The operational potential of the fleet is around 2400 sea days per annum. Highest priority is accorded to vessels suspected of people smuggling, foreign fishing vessels approaching the Australian coast and vessels assessed as posing a quarantine threat or suspected of carrying prohibited imports. The NMU operates that 3 of the boats out of Darwin, 3 in northern Queensland waters around Cairns, one around the southeast coast and one around the southern waters of Western Australia.

The RAAF flies long range surveillance operations. RAN vessels may carry out tasks for other Departments subject to availability and to maintaining the primary role of the Australian Defence Force. This is particularly relevant in the context of the role of the RAN providing effective surveillance, patrol and policing of our maritime approaches, without detracting from the core function of defending against armed attack.<sup>10</sup>

Patrol boats have been an important element of naval capacity to respond to civil requirements since 1967 when the first Attack class patrol boat (hull length 32.8 metres) was accepted into naval service. The Attack class was subsequently replaced with the large Fremantle class patrol boats (hull length 42 metres) from 1980. These are in turn now being replaced by the larger Armidale class patrol boats (hull length 56.8 metres). These can maintain operations in Sea State 5 to 1000nm offshore, be deployed for up to 42 days and are capable of surviving cyclonic conditions up to Sea State 9.<sup>11</sup> The home port for 10 of the Armidale class patrol boats will be Darwin, with Cairns for the remaining 4.

The availability and placement of patrol and enforcement vessels appears to provide inadequate capacity for oversight of a substantial network of offshore marine protected areas and fisheries south of the Tropic of Capricorn. In addition to consideration of additional patrol and enforcement capacity there is a need and

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<sup>9</sup> <http://www.customs.gov.au/site/page.cfm?u=4298>

<sup>10</sup> Australia's Defence Policy: Defence 2000: Our Future Defence Force. paragraph 2.16

<sup>11</sup> Welcome to the Armidale Class. Semaphore. Newsletter of the Sea Power Centre, Australia

opportunity for development and introduction of remote surveillance through underwater and satellite technologies.

### ***Summary***

This Association welcomes progress by Australia towards establishing a network of representative marine protected areas as a component of a global representative network. It considers that it is important that this network to be established on the basis of ecosystem scale planning. It considers that it should incorporate mandatory no take components (IUCN Category I/II) and habitat protection areas (IUCN Category IV) within an overall regime managed for verifiable sustainability of human uses and impacts (IUCN Category VI).

The extent and importance of biophysical linkages in marine systems should be reflected in the policy and administrative systems established to manage them. The planning and management processes should provide for open and accountable oversight of the activities of all the various specialist agencies under a plan.

This Association is concerned at the apparent inadequacy of surveillance and enforcement capacity to address Marine Protected Area and linked Fisheries responsibilities in much of Australia's marine jurisdiction.

### ***Recommendations***

This Association recommends that the Committee support:

1. Urgent action to meet obligations of ecosystem based management with with clear objectives and verifiable performance criteria, to ensure protection of marine biological diversity, maintenance ecosystem processes, and ecological sustainability of human uses and impact including:
2. Urgent action to establish Australia's components of the Global Representative System of Marine Protected Areas by the target date of 2012
3. Incorporation of mandatory "no-take" protected areas covering a minimum of 10% of each marine bioregion in the Australian maritime jurisdiction
4. Identification of substantial areas to be managed by exclusion of uses that destroy habitat.
5. Development of airborne, surface surveillance and patrols and remote marine and satellite based supporting technologies to ensure that Australia is capable of managing and enforcing its regulations with respect to marine protected areas and other elements of ecosystem based management in its offshore jurisdiction.