Australian Marine Sciences Association
PO Box 8, Kilkivan Queensland 4600

December 2008

Position statement on marine protected areas

1. Preamble

1.1 Australia's Exclusive Economic Zone (EEZ) covers over 11 million km^2, and is the third largest in the world. Under the *UN Convention on the Law of the Sea 1982*, and the *Convention on Biological Diversity 1992* (CBD) Australia has obligations to use the marine resources of the EEZ wisely, and to protect its biodiversity.

1.2 Australia has agreed, through its participation in the CBD, to establish (by 2012) and maintain a network of marine and coastal protected areas that are representative, effectively managed, ecologically based, consistent with international law, based on scientific information, and include a range of levels of protection. There is minimum target of "at least 10% of each of the world's ecological regions effectively conserved" by 2012.

1.3 The Australian (Commonwealth) Government, and all State and Territory Governments, are committed to the development of a national representative system of marine protected areas (NRSMPA) by 2012, which is comprehensive, adequate and representative.

2. What are marine protected areas?

2.1 Marine protected areas (MPAs) are *areas of the ocean or coastal seas, securely reserved and effectively protected from at least some threats*. Protection focuses on identified values. The level of protection, and the intent of protection may both vary. The Great Barrier Reef Marine Park (GBRMP) in Queensland is an example of a large marine protected area (345,000 km^2) containing extensive multiple-use areas (covering 67% of the marine park) where a variety of fishing activities are allowed, as well as core areas (covering 33% of the marine park) which are fully protected from all extractive activities.

2.2 There are costs involved in establishing networks of MPAs. Initial costs include scientific studies involved in identifying candidate sites, stakeholder consultation programs to select sites, and establishment costs, which often include compensation to displaced fishers. The establishment of no-take MPA areas can result in displaced fishing effort to other areas, and where these pressures are unsustainable they must be reduced. Ongoing costs of management include the maintenance of public infrastructure, education and information, compliance and enforcement programs, and ongoing scientific monitoring and review to determine the effects and effectiveness of the reserves. Costs must be balanced against long-term benefits.

3. Who does AMSA represent?

3.1 The Australian Marine Sciences Association (AMSA) is Australia's largest professional association of marine scientists with over 900 members nationally. Our Mission is to advance Australian marine science. AMSA objectives are:

- To promote, develop and assist in the study of all branches of marine science in Australia;
- To provide for the exchange of information and ideas between those concerned with marine science; and
- To engage in public debate where we have specialist knowledge.

3.2 Marine scientists are not only participants in the NRSMPA through delivering scientific information and advice to assist with the development and evaluation of the protected area network, they are also a key stakeholder group since they use the marine environment for research. AMSA wishes to emphasise the importance of this dual role for marine scientists, because a special effort by governments is needed to include them as stakeholders in the NRSMPA process.

4. Values of Australia's marine environment

4.1 Australia's marine flora and fauna encompass a very broad range of latitudes and include tropical, temperate and sub-Antarctic bioregions (from estuarine to abyssal depths). The bioregions contain ecosystems which are:

- highly endemic, particularly in the southern temperate zone;
- highly diverse and less damaged when compared to many other places in the world; and
- still poorly documented.

4.2 Australia's marine biota also belong to three oceanic systems, including assemblages from the Indo-West Pacific marine fauna, which is of high taxonomic and evolutionary significance, the Indian Ocean, and those of the Southern Ocean (polar) seas.

5. Threats to the marine environment

5.1 The living inhabitants of the marine realm face five major threats, which can often act together (synergistically):

- *climate change*: changes to oceanic temperatures, acidity, patterns of water movement (including currents, eddies and fronts), storminess and sea level, largely caused by *increasing atmospheric carbon dioxide*, as well as impacts from damage to the ozone layer;
- *overfishing* with attendant bycatch problems, both from commercial fishing, recreational fishing, illegal unregulated or unreported fishing (IUU), and ghost fishing;
- *habitat damage* caused by coastal developments as well as fishing gear, especially bottom trawling. Damage includes the destruction or radical modification of coral reefs, vulnerable benthic ecosystems, mangroves, natural freshwater flows (and passage), coastal foreshores, coastal wetlands and sometimes entire estuaries – which all support coastal marine ecosystems;
- *pollution* (in-sea and land-based, diffuse and point source) including nutrients, sediments, plastic litter, noise, hazardous and radioactive substances; discarded fishing gear, microbial pollution, and trace chemicals such as carcinogens, endocrine-disruptors, and info-disruptors; and
- ecosystem alterations caused by the introduction of *alien organisms*, especially those transported by vessel ballast water and hull fouling.

5.2 Amongst these five major threats to marine biodiversity, fishing has, until the present time, been regarded as the most damaging on a global scale. The destructive impacts of fishing stem chiefly from overharvesting, habitat destruction, and bycatch. Over the 21st century the threats posed by increasing atmospheric greenhouse gases pose huge dangers to the marine environment. At more localised scales other threats, particularly pollution and habitat loss/degradation are dominant at different localities. Coral reef, mangrove, estuarine, seagrass, mud-flat, and sponge-field habitats have been (and are being) extensively damaged. River passage, essential for anadromous and diadromous species, has been impaired or destroyed around the globe.

5.3 In Australia, fishing activities appear to be the primary threat to fishes and the second most important threat to marine invertebrates after habitat degradation. MPAs must not be seen as a substitute for well-managed fisheries – we need both.

6. What are the benefits of MPAs?

6.1 Marine protected areas serve six main functions, not all of which necessarily apply simultaneously:

(a) to protect biodiversity, and the processes on which biodiversity depends;

(b) to protect cultural, recreational, spiritual, educational and scientific values;

(c) to provide benchmarks against which the modification of the planet under human hands can be measured and assessed;

(d) to assist in maintaining ecosystem services;

(e) to enhance fishery production outside MPA boundaries; and, last but not least:

(f) to protect from disturbance the habitats of other living inhabitants of the planet.

6.2 All Australian States endorsed the *National Strategy for the Conservation of Australia's Biological Diversity* 1996. This strategy includes an important paragraph acknowledging the intrinsic value of our biodiversity:

> There is in the community a view that the conservation of biological diversity also has an ethical basis. We share the earth with many other life forms that warrant our respect, whether or not they are of benefit to us. Earth belongs to the future as well as the present: no single species or generation can claim it as its own.

7. AMSA's position

7.1 AMSA endorses the government's national representative system of marine protected areas (NRSMPA) program, and encourages its timely completion. This should be done for both present and future generations of Australians, as well as to provide undisturbed habitat for at least a proportion of the plants and animals with which we share this planet. AMSA also identifies (below) key areas where further government efforts are urgently needed to maximise the benefits of the NRSMPA to all Australians.

7.2 When an MPA is declared, AMSA believes there should be clearly articulated aims for the MPA, and that the specific MPA be planned for, and managed accordingly.

7.3 Australia's marine biota are poorly studied and in spite of efforts such as the global census of marine life, there are few comprehensive data sets that can be used for MPA design and performance measurement purposes. AMSA encourages governments to invest in taxonomic support and training, ecological modelling studies and especially building national-regional biological data sets, including habitat mapping, to support MPA design, performance measurement and evidence-based decision making. Baseline monitoring before, or at the time of MPA creation is a vital tool for the study of long-term MPA effects, and such ongoing studies must be adequately funded.

7.4 Similarly, the physical aspects of Australia's marine environment are poorly studied. For example, modern multibeam sonar bathymetry data have been collected (at mid-2008) over less than 10% of Australia's EEZ (and over less than 1% of the continental shelf). AMSA encourages governments to invest in building better marine environmental data sets to support all forms of marine management.

7.5 In establishing and expanding networks of marine protected areas, consultation with all stakeholders is vital, combined with adequate education, information and awareness programs. Stakeholders should be able to provide a variety of inputs including both baseline information on ecosystem values and usage, as well as the expression of preferences for reservation options. The selection of options, however, must be framed within Australia's national and international commitments to the protection of biodiversity, and must be based on the best scientific evidence available. Where evidence is inadequate, a precautionary stance must be taken, in line with Australia's commitment to the precautionary principle – and steps taken to provide that evidence, where feasible.

7.6 Where declaration of MPAs removes substantial and valuable legal entitlements, and where stakeholders suffer significant financial hardship as the result of reserve proclamation, adequate compensation should be paid.

7.7 Networks of marine protected areas must be adequately resourced from the start to ensure they are properly maintained and managed, and to protect them from illegal harvesting and other threats. Well-designed scientific monitoring programmes should be part of their management. It is important to document ecosystem changes following protection to provide information to managers and the wider community on their performance. Such baseline information will also help improve our ability to manage the wider marine environment in a productive and sustainable way.

7.8 AMSA believes that MPAs are vital for the conservation of Australia's marine environment and threatened species. AMSA recommends the following:

a) Given national commitments set out within the NRSMPA strategy, we urge all Australian governments to establish networks of marine protected areas, with the objective of comprehensive, adequate and representative protection of Australia's marine biodiversity assets. National or State marine reserve area targets are only useful in the absence of systematic regional conservation plans. Where detailed planning has not been undertaken, a goal should aim to protect all major marine ecosystems, with a minimum target of 10% of all habitat types under full no-take protection by 2012. Rare and vulnerable ecosystems or communities should be provided with greater protection – up to 100% where an isolated ecosystem or habitat type is endangered. Such no-take reserves should lie within larger multi-use protected areas, designed to provide limited harvesting opportunities which will not prejudice biodiversity assets. A figure of 10% under no-take protection would slow but not prevent loss of biodiversity: the current no-take level in the GBRMP of 33% is more likely to achieve substantial and sustained biodiversity benefits.

b) To be effective, MPA designation should be accompanied by a net reduction in fishing effort for affected fisheries which are at or near full exploitation, and AMSA endorses

Commonwealth and State use of structural adjustment and industry buyout packages where appropriate.

c) Although MPAs are an essential tool for marine conservation, AMSA emphasises that MPAs must be complemented by effective management strategies across the marine environment, including (urgently) climate change impact programs, well-managed fisheries, control of spread of invasive species, and control of pollutants, especially nutrients and sediments.

d) AMSA stresses the importance of MPA planning principles set out in several important government documents, for example in Australia's Oceans Policy 1998. Several of these documents stress the role and importance of stakeholder consultation, which should take place within a framework of alternative approaches constrained by the essential goals and objectives of the NRSMPA.

7.9 There are (and will continue to be) costs in establishing the NRSMPA, and it is proper that efforts should be taken to minimise these costs. However these costs are predominantly short-term, and should not overshadow the long-term benefits accruing from an effective national MPA network. It is essential that alternative options put to stakeholders do not compromise the fundamental goals, and essential design principles of the network.

7.10 Australia's marine environment has been impacted by a range of human activities. AMSA considers that the cumulative impact of multiple stressors on the marine environment constitutes a key knowledge gap not adequately addressed by existing scientific programmes. A quantitative assessment of cumulative human impacts is required to underpin comprehensive evidence-based decision making.

7.11 While most attention has focussed on the ecological and fisheries values of MPAs, it is also possible that in future MPAs could be created to protect sites of geological or physical oceanographic significance. AMSA encourages consideration of these values.

7.12 AMSA has been disappointed by the small portions of MPAs zoned as totally protected (no-take) particularly on the continental shelf. Only 0.75% of the South East Region shelf is protected by Commonwealth no-take MPAs, noting that about 6% of the SE Region is shelf (on average around 22% of Australia's EEZ is continental shelf). The shelf contains important habitats not found elsewhere. AMSA encourages the inclusion of more shelf areas within existing and future MPA networks, and increased use of full (no-take) protection as the main tool to achieve high-quality conservation outcomes.

7.13 AMSA encourages improved coordination between Federal and State-Territory governments in the design of the NRSMPAs. There is a risk that poor coordination will result in inadequate protection of some ecosystems, particularly those situated near jurisdictional boundaries. Without coordination the placement of MPAs is unlikely to be optimised in terms of cost or effectiveness.

7.14 Systematic network design must be based on biological complementarity, and must consider issues of connectivity, efficiency, uncertainty, replication and effectiveness on a regional basis. Issues relating to rare or endangered species, habitats or ecosystems must be considered, as well as critical habitat, and migratory pathways.

7.15 Good fisheries management is essential to the protection of marine biodiversity. AMSA supports improved fisheries management in conjunction with the development of MPA networks. Of particular importance is the wide application of the ecosystem and precautionary approaches to the management of both commercial and recreational fisheries. AMSA also notes that Australia is committed to the phase-out of all destructive fishing practices by 2012.

7.16 It is unfortunate that Australia lacks an up-to-date consolidated reporting mechanism on protected areas. The collaborative Australian protected area database (CAPAD), maintained by the Commonwealth (at mid-2008) lacked comprehensive information on State marine protected areas past 2004. Further, the database lacks reporting on the extent of protection of marine habitat, ecosystem, geomorphic province, or even bioregion. These are important gaps and should be addressed by the Commonwealth Government as a matter of urgency.

7.17 Marine protected areas assist in maintaining healthy ecosystems. Important ecosystem services supplied by the marine environment include the supply of seafood, passive and active recreational opportunities, dilution and assimilation of wastes (including greenhouse gases), the regulation of coastal climate, and vessel passage – almost all depending heavily on healthy marine ecosystems.