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9 March, 2006

Mr S Oxley  
Assistant Secretary  
Marine Conservation Branch  
Department of Environment and Heritage  
GPO Box 787  
CANBERRA ACT 2601

Dear Sir,

**Re: Candidate Marine Protected Areas in the South-east Marine Region**

The Australian Marine Sciences Association (AMSA) is a member of the National Oceans Advisory Group (NOAG). AMSA is responding to an invitation to members of NOAG to comment on plans for candidate Marine Protected Areas (MPAs) in Australia's South-east Marine Region (SEMR).

AMSA is Australia's largest professional association of marine scientists (over 800 members). Its members come from a broad range of disciplines and work in the private sector, government departments, research and other agencies and universities.

AMSA values its membership of both NOAG and the Oceans Policy Science Advisory Group (OPSAG): it seeks to contribute positively and constructively to implementation of Australia's Oceans Policy. Protection of Australia's marine biodiversity is a key objective of Oceans Policy. AMSA supports Federal Government initiatives in establishing the national comprehensive, adequate and representative (CAR) system of MPAs. It sees this as an important, but not the sole, means of protecting biodiversity. AMSA is pleased to see progress being made in implementation of the CAR system as part of the South-east Regional Marine Planning process.

A position paper on MPAs has been prepared by AMSA and is attached for your information. AMSA's specific comments on the candidate MPAs (below) have been divided into two groups – those dealing with the process of MPA selection and those concerned with particular aspects of the candidate MPAs.

## The Process of MPA selection

The National Representative System of Marine Protected Areas (NRSMPA) guidelines (ANZECC 1998) point out that the identification of MPAs is largely based on ecological criteria, while the selection of MPAs largely considers socio-economic criteria. AMSA recognises that in establishing each MPA the Government must be mindful of its other obligations and take account of consequences for all stakeholders. The mechanisms by which this is achieved is a matter for Government and AMSA does not wish to comment on this. AMSA would however like to highlight what it sees as the benefits in ensuring that marine science has a central role in any process for establishing MPAs.

### 1.1. *The process of MPA establishment should start with good scientific input*

AMSA believes best available scientific evidence should be used to identify the areas where MPAs may be placed. In areas where adequate oceanographic, ecological and fisheries management information is not available, the use of surrogates such as geomorphology is accepted by AMSA. Identification of biogeographic regions is central to decisions on the number and distribution of MPAs. Computer programmes such as Marxan supported by data on ecological significance (e.g. breeding, feeding or nursery areas), usage and resource potential should be used to identify broad areas of interest (BAOI) in the first instance.

AMSA also believes that it is essential that the identification of key conservation values of the SEMR not be limited to benthic ecosystems. It should also include protection of pelagic ecosystems and biodiversity. In this regard, AMSA supports the recent work by Geoscience Australia identifying the 'seascapes' of the SEMR to assist MPA identification. AMSA understands that this approach to MPA identification has been used to identify MPAs in New Zealand and also in Canadian offshore waters.

AMSA notes that clear, scientifically-based, operational planning criteria are a recognised tool for identifying potential MPAs. Such an approach has been highly successful in identifying potential MPAs in the recent re-zoning of the Great Barrier Reef Marine Park. Importantly, such agreed criteria enabled an open, transparent planning process, whereby stakeholders could assess why and how MPAs were identified. AMSA notes that early in the current SEMR process, scientists developed seven operational planning criteria for BAOI identification (outlined in the 'User Guide' 2003). These form an important tool by which the final MPA network can be assessed.

1.2 *Independent scientific review of the final system of MPAs is essential.*

The fact sheet for each candidate MPA includes the statement:

*'All MPAs are managed primarily for biodiversity conservation.'*

In addition, the network of MPAs must be comprehensive, adequate and representative. AMSA strongly supports the Government's proposed independent scientific review of the candidate MPA network to ensure it meets these objectives. An open and transparent assessment process including public release of the review findings will increase community confidence in the final MPA system.

1.3 *Well-designed scientific monitoring programmes should be part of the management of MPAs*

It is important to document ecosystem changes following protection to provide information to managers and the wider community on their performance. Such baseline information may also improve our ability to sustainably manage the marine environment (clause 6.2 of AMSA's position statement).

1.4 *There should be greater integration of fisheries management and conservation goals for MPAs*

Increasingly, MPAs are being recognised nationally and internationally as important spatial management tools for fisheries management. There is a need to identify fisheries benefits of MPAs and link fisheries to habitats at multiple scales. In the Scotian Shelf of Canada for example, fisheries habitats are being defined within the MPA process. AMSA believes achievement of fisheries management goals (protection of key fisheries habitats, spawning areas, breeding areas, reproductive capacity, etc.) and biodiversity conservation goals should be identified as dual benefits of MPA establishment. The Government has recognised that many of Australia's most overfished commercial species are found in the South-east region. High protection MPAs are recognised globally as one of the most effective spatial management tools for overfished fisheries.

## 2 South-east Marine Region candidate MPAs

### 2.1 *Continental shelf areas are under-represented.*

The multi-zoned MPAs proposed for the SEMR largely avoid Australia's continental shelf, offering little protection to its marine habitats and biodiversity. Importantly, AMSA notes that the continental shelf is one of the most productive and biologically diverse regions of Australia's maritime estate - containing key foraging areas for seals, sea-lions, cetaceans, as well as some of the highest levels of temperate benthic biodiversity (and endemism) in world. Continental shelf areas represent major areas of productivity and biodiversity, particularly for benthic ecosystems, fisheries, and protected species.

For these reasons AMSA believes the MPA network should include representative areas of:

(i) **the region's seascapes** - recent research by Geoscience Australia has shown that two (of the nine) identified 'seascapes' (the shallow wave carbonate and deep muddy carbonate seascapes) are under-represented in any of the BAOI's or proposed MPAs and there is also poor representation of seascapes at the Provincial level;

(ii) **locations with important oceanographic features such as upwellings** - upwellings are linked integrally to high primary and secondary productivity (including fisheries productivity), key seal foraging areas, cetacean feeding areas, high densities of seabirds, and areas of high benthic biodiversity (eg. macroalgae, invertebrates);

(iii) **geomorphic features such as short shelf-break canyons** - overseas studies have demonstrated that short, shelf-break canyons have a substantial influence on local water properties and plankton distribution (i.e. closed cyclonic eddies near the head of the canyon) and coastal productivity: in the south-east region the canyons are major feeding areas for the Blue Whale, as well as regions of high productivity (primary, secondary), fisheries productivity and benthic biodiversity (kelp forests).

Almost all of the high protection areas within the current SEMR MPA system are found on the region's abyssal plain.

AMSA strongly urges greater representation of shelf habitats and their biodiversity in highly protected MPAs. The degree of anthropogenic disturbance to marine ecosystems decreases rapidly with distance from the coast. It is important to protect sufficient areas representative of the shelf's habitats – these areas will be valuable for reference whereby the degree of disturbance in similar habitats external to the MPAs may be assessed.

## 2.2 *Sea mount areas should be protected.*

Sea mounts support unique ecosystems and are important breeding sites for fish and other species. They are recognised as biodiversity hotspots and contain many as yet unidentified organisms. In the past, some have been severely impacted by human activity. AMSA supports inclusion in the MPA system of important sea mount features. For the reasons outlined above, the Offshore Seamounts (South) MPA containing the Cascade Seamounts should be given the highest possible protection. The IUCN1a classification of other candidate MPAs containing seamounts is strongly supported.

## 2.3 *Spawning Areas for Fish Considered 'at Risk' should be protected.*

The MPA network should protect important sites for commercial fisheries. For example:

### (i) Blue Warehou (*Seriolla brama*) Spawning Areas.

This species is in serious and significant decline and thus considered to be at risk by the South East Fishery Assessment Group. Three spawning areas have been identified within the SEMR - off the east coast of Victoria; eastern Tasmania; and western Bass Strait. None of these regions could be considered to be protected within the current MPA proposals.

### (ii) Ocean Perch (*Helicolenus percloides*) Spawning Area.

This species is considered to be at medium risk by the South East Fishery Assessment Group. One spawning area has been identified within the Zeehan BAOI region, and could not be considered to be protected within the current MPA proposals.

2.4 *AMSA supports design of MPAs which include transects from the coast to the abyssal plains.*

To have MPAs comprise continuous sections of crust and overlying water from near shore to deep ocean provides better protection for species that migrate up or down slopes during their life cycles. This also enables the study of succession and zonation of marine organisms free from human interference.

In undertaking MPA planning in the SEMR, it is critical to acknowledge cross-shelf processes and biodiversity. Complementary, cross-shelf and cross-jurisdictional planning can protect mutual areas and features of conservation value, as well as protect essential cross-shelf ecological processes (e.g. those associated with upwellings). AMSA recognises that comprehensive, science-driven, MPA planning has been undertaken in several State jurisdictions in the SEMR. To this end, candidate MPAs have either been identified or established in South Australia and Victoria.

The proposed candidate MPAs abut only one MPA in State waters (in Bass Basin). AMSA believes opportunities to extend candidate MPAs and/or to join with State MPAs to create protected areas beginning in the coastal zone should be reassessed.

2.4 *Strict Nature Zoning (IUCN 1a category) should be increased in the MPA network in order to cover a higher number of representative habitats.*

At present, Strict Nature Zones (which serve as scientific reference zones) are included in five of the twelve candidate MPAs but these overwhelmingly incorporate deep sea habitats of the abyssal plain (south of Kangaroo Island and east of north-west Tasmania): a small area of shelf is included in IUCN1a in the Tasman Fracture candidate MPA. As such only 6% of the entire South-east region is fully protected - nearly all of this is confined to biologically poor habitats of the abyssal plain. Given AMSA's comment in 2.1 regarding the greater likelihood of anthropogenic impacts on the shelf compared with off-shelf, AMSA believes there is a greater need for scientific reference areas in the various shelf habitats.

As set out in its position statement, AMSA believes that there exist places deserving of protection for future generations through precautionary management, not just through managing according to the principles of ecologically sustainable development (clause 3.4).

*2.5 Areas under Strict Nature Zoning should be shaped in order to maximise protection*

It is well established that ribbon-shaped and dot-point-shaped zones generally offer limited protection because of 'edge-effects'. Two areas proposed for Strict Nature Zoning (in the Huon and Tasman Fracture MPAs) are so shaped. AMSA asks that the geometric shaping for these and any other Strict Nature Zones be reviewed in order to enhance protection being offered at those locations.

AMSA would be happy to provide further amplification of this submission if necessary. Please also note that it is well-placed to make a significant contribution to this MPA process, given the resources it is able to draw upon.

Yours sincerely,

Chris Smalley  
Secretary, AMSA

cc Senator The Honourable Ian Campbell  
Minister for the Environment and Heritage  
Parliament House, Canberra A.C.T., 2600

cc Ms Donna Petrachenko,  
Marine Division,  
Department of Environment and Heritage  
GPO Box 787  
CANBERRA ACT 2601

(see attachment)

**Attachment****Australian Marine Sciences****Position Statement on Marine Protected Areas****April 2002***1. Preamble*

- 1.1 Following Australia's ratification of the UN Convention on the Law of the Sea in 1994 the Nation assumed responsibility for an area of ocean nearly twice the size of mainland Australia. Only a small proportion (less than 5%) of this ocean territory has been mapped and an even smaller fraction of its biological communities described.
- 1.2 Australia's sovereignty over what is one of the three largest marine territories of any nation carries with it both benefits and obligations. While we have the right to develop its resources we are also charged with the responsibility of doing so in an environmentally sustainable manner.
- 1.3 One management strategy which has been proposed by the Commonwealth Government for conservation of marine ecosystems is the development of a national representative system of Marine Protected Areas (MPAs).
- 1.4 Progressive implementation of MPAs by Commonwealth, State and Territory governments has normally been accompanied by a community consultation process. During these consultations a wide range of views on the nature and merits of MPAs have been expressed by stake holders. Plans to implement MPAs are sometimes controversial.
- 1.5 This paper has been produced in order to make clear the general views of the Australian Marine Sciences Association in these important debates.

*2. Marine Science and MPAs*

- 2.1 AMSA is Australia's largest professional association of marine scientists with over 900 members nationally. Its basic objectives are to:
  - promote, develop and assist in the study of all branches of marine science in Australia; and,
  - provide for the exchange of information and ideas between those concerned with marine science.

2.2 Marine scientists have an interest in MPAs for a variety of reasons including:

- some marine scientists are users of marine areas that are (or may be) subjected to conservation measures;
- certain branches of marine science are directly concerned with marine conservation;
- certain branches of marine science are concerned with the consequences of marine conservation practices on other human uses of the marine environment;
- some marine scientists supply information used in decision-making for management of conservation areas.

2.3 AMSA believes that marine scientists:

- are legitimate users of marine protected areas,
- have an important role to play in the planning and management of marine protected areas

### 3. *Australia's Marine Environment*

3.1 Australia's marine environment is at risk from human activities such as:

- alteration of catchments - with consequent changes to the quality and quantity of water flowing to the sea,
- sewage and other waste disposal to oceans,
- commercial and recreational fishing,
- off-shore oil exploration and extraction
- coastal and estuarine developments such as port construction and residential development.
- shipping and recreational boating.
- introduction of exotic marine species.

Their relative significance can be determined by location-specific assessments.

3.2 Australia's marine flora and fauna encompasses a very broad range of latitudes and includes tropical, temperate and polar ecosystems. These ecosystems are:

- highly diverse when compared to other places in the world
- highly endemic ,
- still poorly documented.

3.3 Australia's marine biota also belong to three ocean systems and include assemblages such as the Indo-West Pacific marine fauna, which is of taxonomic and evolutionary significance, and the highly productive Antarctic seas.

3.4 AMSA believes that there exist places deserving of protection for future generations through precautionary management, not just management according to the principles of ecologically sustainable development.

#### 4 *MPAs as a Conservation Tool*

- 4.1 Terrestrial National Parks are widely accepted as critical for protection of land-based ecosystems. AMSA considers that an equivalent level of protection is appropriate for Australia's marine environment. An increasing number of international scientists are also advocating the creation of marine reserves to reverse declines in the health of marine ecosystems world-wide.
- 4.2 AMSA recognizes that marine parks have been declared in the territorial waters of most States and Territories and in Australia's Exclusive Economic Zone by the Commonwealth Government. Currently the size and management of some of these reserves are under review.
- 4.3 MPAs can have a variety of management regimes – from reserves in which many human activities are prohibited to multiple-use reserves in which certain prescribed activities may be allowed in some areas but not others.
- 4.4 AMSA supports the concept of totally protected (“no-take”) zones as part of a National system of marine protected areas. Such a system should aim to provide a network of biogeographically based protected areas containing representative examples of all significant marine habitats
- 4.5 The prime purpose of no-take marine reserves is to provide maximum protection of their marine ecosystems from human disturbance. As such, they can provide important reference areas by which we can assess the extent to which people have altered similar ecosystems in other places. Reserves should be sufficiently large to meet their conservation objectives.
- 4.6 While most attention has focussed on the ecological values of MPAs it is also possible that in future they could be created to protect sites of geological or physical oceanographic significance.

#### 5 *Other Benefits of MPAs*

- 5.1 MPAs may benefit human communities and marine environments in other ways. They may :
  - provide educational opportunities,
  - help sustain exploited species populations and their fisheries,
  - improve scientific understanding of marine ecosystems,
  - provide enriched opportunities for non-extractive human recreational activities,
  - benefit regional communities through enhanced tourism activity.
- 5.2 Fisheries stock assessments and models are extremely complex and frequently lack necessary information to reliably predict sustainable catches. No-take reserves thus provide a “second line of defence” should current management fail. Protected populations of exploited species may assist stock recovery outside a reserve in two ways:
  - through movement of mature individuals outside reserve boundaries, and;
  - by dispersal of planktonic life stages beyond reserve boundaries by water currents which move through a reserve.

- 5.3 No-take reserves remove all fishing pressure from exploited stocks in a limited area. For some species in bays and inlets the size of the recreational catch is comparable to the commercial catch.
- 5.4 Research into no-take marine reserves has shown dramatic increases in size (and as a consequence, also in fecundity) and abundance of commercially exploited marine species within them. The effectiveness of reserves for specific fisheries requires location specific research.

## 6 *Resourcing of MPAs*

- 6.1 Marine Protected Areas must be adequately resourced from the start to ensure they are properly managed and to protect them from illegal harvesting.
- 6.2 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 may also improve our ability to sustainably manage the marine environment.