



Australian Government
Department of Sustainability, Environment,
Water, Population and Communities

SUBMISSION FORM for the Commonwealth marine reserve network proposal and draft Marine Bioregional Plan for the North Marine Region

Submission ID
(Office use only)

Thank you for your interest in the Commonwealth marine reserve network proposal and draft Marine Bioregional Plan for the North Marine Region. Good information on our ocean habitats, wildlife and resources, and the people who use and enjoy them is critical to the marine bioregional planning process and the identification of Commonwealth marine reserves. This public consultation period is an important opportunity for you to give feedback on the North marine reserve network proposal and the draft North Marine Bioregional Plan.

To ensure your submission is as relevant and effective as possible, please ensure that you:

- complete **Part 1** identifying yourself and/or your organisation
- provide clear and concise feedback
- in **Part 2** refer to specific marine reserves and/or parts of the marine reserve network you have feedback on
- in **Part 3** refer to specific parts and sections of the draft Marine Bioregional Plan that you have feedback on

Submissions must be received by the Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) no later than close of business on Monday 28th November 2011.

How to make a submission

Please refer to the Commonwealth marine reserve network proposal and draft Marine Bioregional Plan for the North Marine Region when making your submission:

www.environment.gov.au/coasts/mbp/north/index.html

Please ensure that you provide your contact details on your submission so that the Department can notify you that your submission has been received.

To submit your feedback :

- **email** this form complete with your contact details, feedback and any additional information to:
Submissions.North@environment.gov.au

or

- **post** this form **free of charge** to:

Department of Sustainability, Environment, Water, Population and Communities
MBP submissions – North Marine Region
Reply Paid 787
Canberra
ACT 2601

Submissions must be post-marked or received by the Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) no later than close of business on Monday 28 November 2011.



Part 1- Personal Information

Required fields are marked with an asterisk (*)

Any personal information you provide to the Department is protected by the provisions of the *Privacy Act 1988* and will only be used to assist the Australian Government complete the marine bioregional planning process. Please include relevant contact details where possible so that the Department can notify you that your submission has been received.

Please fill out in black ink only

1. First Name:* Lynnath Surname:* Beckley
2. Postal Address:* School of Environmental Science, Murdoch University, 90 South Street Suburb:* Murdoch State/Territory:* WA Post Code:* 6150
3. Telephone: 08-93606392
4. Email: L.Beckley@murdoch.edu.au
5. Are you making this submission on behalf of an Organisation? Yes X
Name of Organisation: Australian Marine Sciences Association (900 members)

Primary Interest		
6. What is your primary interest in the marine environment? (please pick one)		
<input type="checkbox"/> Commercial fishing	<input type="checkbox"/> Research	<input type="checkbox"/> Mining
<input type="checkbox"/> Recreational fishing	<input type="checkbox"/> Conservation	<input type="checkbox"/> Ports
<input type="checkbox"/> Game fishing	<input type="checkbox"/> Yachting or private boating	<input type="checkbox"/> Oil and Gas
<input type="checkbox"/> Charter fishing	<input type="checkbox"/> Indigenous use and stewardship	<input type="checkbox"/> Shipping
<input type="checkbox"/> Aquaculture	<input type="checkbox"/> Tourism	<input type="checkbox"/> Leisure and recreation
<input type="checkbox"/> Fishing related business	<input type="checkbox"/> Community/local resident	
X Other please specify: AMSA has a specific interest in advancing marine science in Australia		

Secondary Interest

7. Please specify: Research

All comments will be treated as public documents and may be made public on the DSEWPaC website.
I consent to my name/organisation and comments (including any personal information in my comments) being made publicly available*
X Yes
Note: If you wish your comments to remain confidential, you must clearly mark all or part of your comments as 'confidential', providing reasons why the Department should consider your request for confidentiality. Please note that public submissions are not normally confidential and a request for confidentiality does not make your comments automatically exempt from release. Submissions (including submissions marked confidential) may be shared with other government agencies to assist the Australian Government to complete the marine bioregional planning process. All submissions may be subject to release under the <i>Freedom of Information Act 1982</i> .



Part 2: Commonwealth marine reserve network proposal for the North Marine Region

To complete **Parts 2a and 2b** you will need to refer to the Commonwealth marine reserve network proposal for the North Marine Region available at:

www.environment.gov.au/coasts/mbp/north/index.html

Part 2a.

Please provide feedback on the Commonwealth marine reserve network proposal for the North Marine Region noting, where relevant, the name of the specific reserve to which your feedback relates. In providing your feedback you may wish to consider:

- any aspects of the proposed marine reserve boundaries and/or zones that you would like to see amended
- the impacts of the proposed marine reserves on you/your sector/organisation/community
- the benefits of the proposed marine reserves for you/your sector/organisation/community

Proposed Oceanic Shoals marine reserve	Feedback
<p>The multiple use Oceanic Shoals protected area (IUCN VI) offers relatively little protection to the unique biodiversity of this region. Nevertheless, exclusion of demersal trawling could prevent further damage to the remarkable carbonate and algal assemblages in this area. Continuity from the adjacent proposed protected area in the NW plan is a welcome feature and allows a considerable connectivity corridor. We recommend that in light of recent discoveries by the Australian Institute of Marine Science that some of this area be afforded IUCN Category II protection.</p>	

Proposed Joseph Bonaparte Gulf marine reserve	Feedback
<p>The proposed Joseph Bonaparte Gulf protected area (IUCN VI) offers relatively little protection to biodiversity of the region though the exclusion of trawling could reduce the effects of this type of fishing on turtles and other biodiversity and reduce impacts on the carbonate platforms. We note that this area is adjacent to a proposed protected area in the NW plan.</p>	

Proposed Arafura marine reserve	Feedback
<p>The proposed Arafura protected area (IUCN VI) offers relatively little protection to biodiversity of the region though the exclusion of trawling and pelagic gill nets could reduce the detrimental effects of these types of fishing on turtles and other biodiversity. We are surprised that this area was not linked to the nearby Garig Gunak Balu National Park, especially as the proposed area extends inshore to the edge of NT waters.</p>	

Proposed Arnhem marine reserve	Feedback
<p>The proposed Arnhem protected area (IUCN VI) offers relatively little protection to biodiversity of the region though the exclusion of trawling could reduce the detrimental effects of these types of fishing on turtles and other biodiversity.</p>	

Proposed Wessel marine reserve	Feedback
<p>The proposed Wessel protected area includes some higher level protection (IUCN II) and this protection in shallow shelf waters is to be commended. Exclusion of fishing and mining will allow opportunity for marine research in relatively un-impacted ecosystems.</p>	

Proposed Limmen marine reserve	Feedback
<p>The proposed Limmen protected area (IUCN VI) is small and offers relatively little protection to biodiversity of the region though the exclusion of trawling and other netting should reduce the detrimental effects of these types of fishing on turtles and other biodiversity.</p>	

Proposed Gulf of Carpentaria marine reserve	Feedback
<p>The proposed Gulf of Carpentaria protected area includes some higher level protection (IUCN II) and this protection in shallow shelf waters is to be commended. Exclusion of fishing and mining in this area will allow opportunity for marine research in shallow, tropical, coastal ecosystems that are relatively un-impacted.</p>	

Proposed West Cape York marine reserve	Feedback
<p>The proposed West Cape York protected area includes some higher level protection (IUCN II) and this protection in shallow shelf waters is to be commended. Exclusion of fishing and mining in this area will allow opportunity for marine research in shallow, tropical, coastal ecosystems that are relatively un-impacted.</p>	



Part 2b.

Please provide general feedback on the Commonwealth marine reserve network proposal for the North Marine Region.

General feedback on the Commonwealth marine reserve network proposal for the North Marine Region

The Australian Marine Sciences Association, which represents about 900 marine scientists, acknowledges the considerable effort that has obviously gone into developing the northern marine protected area network proposal. The marine biodiversity of northern Australia deserves adequate protection as it is particularly species rich and, unlike other parts of Australia is largely associated with shallow shelf areas. However, marine protected areas are only one of a suite of management strategies available to conserve biodiversity and ensure the marine environment of the northern region remains healthy and resilient. We thus strongly encourage the federal government to carefully manage extractive use of living and non-living marine resources, threatened species and communities, invasive species, off-reserve areas and overall ecosystem health in this large area of Australia's EEZ. This should be done with due regard to the cumulative effects of anthropogenic impacts and the increasingly apparent consequences of climate change on the marine environment. We also have concerns over research and monitoring aspects and we recommend that a well-designed marine environmental monitoring programme be established for this region.

We are surprised that no detailed socio-economic impact assessment was presented particularly as the goals and principles for the establishment of the National Representative System of Marine Protected Areas in Commonwealth waters indicate minimising social and economic impacts while meeting conservation objectives. The consultation that this requires would have engaged NT people more and possibly avoided some of the acrimonious media debate.

With respect to the proposed NW marine reserve network, we wish to acknowledge the demarcation of special purpose and multiple use zones (IUCN VI) that restrict the harmful effects of demersal trawling on ecosystem function (Kumar & Deepthi 2006). Despite these positive aspects, we have strong concerns that the proposed network does not appear to be based on the well-established scientific principles of marine reserve network design, namely, comprehensiveness, adequacy and representation. These core principles have been adopted in the national representative system of marine protected areas (NPSMPA) and endorsed by the Australian Government (ANZECC 1998).

Our main concern relates to the poor spatial representation in highly protected areas (IUCN II) of the habitats on the continental shelf in the west of the bioregion (roughly 127°E - 132°E). The northern marine bioregion has large areas that are adjacent to parts of the continent where there is little population pressure. We are of the opinion that the federal government could have gone further with respect to including high protection areas on the shelf towards the western part of the bioregion so that Australia could have good examples of relatively intact ecosystems to provide baseline data for monitoring and further our understanding of healthy ecological function. These concerns are similar to those raised by AMSA and expressed by others (Edgar *et al.* 2008) about the South East Bioregional Plan.

We are concerned that there is little understanding of the key oceanographic processes and mechanisms driving the biodiversity patterns in the region. Globally, protection of oceanographic processes is now being recognised as extremely important in pelagic biodiversity conservation (Game *et al.* 2011, Grantham *et al.* 2011).

The areas in the proposed network with low level protection (IUCN VI) do little to relieve the current pressures of fishing (including spatially expanding, open-access recreational fishing), shipping and the oil and gas industry. In fact, the poor spatial resolution of fisheries data that has become evident during this bioregional planning process should be attended to at a federal level. Data collected in 1° blocks are clearly inappropriate for establishing the necessary cost layer for systematic conservation planning. Further, we note the poor spatial data available for recreational fishing in the northern part of Australia and would urge the Federal Government to engage in a co-operative study with the NT government to collect data on the extent and intensity of recreational fishing.

We note that there has been some attempt to ensure corridors of connectivity and siting of protected areas adjacent to those in the NW plan (eg Oceanic Shoals). Nevertheless, highly protected (IUCN II) areas proposed for the shelf are very few and it is unlikely that such small isolated areas will be able to maintain connectivity and fulfil the goal of protecting Australia's marine biodiversity. Scientific evidence suggests that, in a network, highly protected areas need to be spaced about 20 - 80 km apart to ensure that connectivity among them facilitates replenishment (Shanks *et al.* 2003; Halpern *et al.* 2006; McCook *et al.* 2009, 2010). That the proposed network does not appear to take into account the current scientific consensus on size and spacing of reserves is particularly concerning for conservation of biodiversity of the northern continental shelf.

This also makes replication in the design of monitoring programmes to assess the effectiveness of management very difficult. Our concerns regarding research and monitoring concern both strategy and implementation. With such an extensive zoning scheme the strategies and actions section of the plan should have, as a clear goal, development of research and monitoring which would enable performance assessment against its objectives. In particular, this strategy should include before, and after, studies both within, and



outside of, zones with different levels of protection. With the current zones adequate replication may be difficult to achieve, particularly for key species and areas of interest.

In summary, AMSA welcomes the general recognition of scientific information that has been used in the planning for the northern bioregion. Nevertheless, AMSA encourages the Australian Government to amend the proposed network of marine protected areas to address the above mentioned concerns, in particular, by adequately representing habitats in the western part of the bioregion. We are concerned that the gaps in the proposed system of marine protected areas will result in poor performance of the network and negate the strong biodiversity conservation outcomes that could be achieved.

- ANZECC 1998. *Guidelines for Establishing the National Representative System of Marine Protected Areas*. Australian and New Zealand Environment and Conservation Council, Task Force on Marine Protected Areas. Environment Australia, Canberra.
- Edgar, G.J., Langhammer, P.F., Allen, G.R., Brooks, T.M., Brodie, J., Crosse, W., De Silva, N., Fishpool, L.D.C., Foster, M.N., Knox, D.H., McCosker, J.E., McManus, R., Millar, A.J.K. & Mugo, R. 2008. Key biodiversity areas as globally significant target sites for the conservation of marine biological diversity. *Aquatic Conservation: Marine and Freshwater Ecosystems* 18: 969-983.
- Game, E.T., Grantham, H.S., Hobday, A.J., Pressey, R.L., Lombard, A.T., Beckley, L.E., Gjerde, K., Bustamante, R., Possingham, H.P. & Richardson, A.J. 2009. Pelagic protected areas: the missing dimension in ocean conservation. *Trends in Ecology & Evolution* 24(7): 360-369.
- Grantham, H.S., Game, E.T., Lombard, A.T., Hobday, A.J., Richardson, A.J., Beckley, L.E., Pressey, R.L., Huggett J.A., Coetzee, J., van der Lingen C.D., Alpine J.E., Attwood, C., Peterson, S.L., Merkle, D. & Possingham, H.P. 2011. Accommodating dynamic oceanographic processes and pelagic biodiversity in marine conservation. *PLoS ONE* 6(2):1-16.
- Halpern, B.S., Regan, H.M., Possingham, H.P. & McCarthy, M.A. 2006. Accounting for uncertainty in marine reserve design. *Ecology Letters* 9:2-11.
- Kumar, A.B. & Deepthi, G.R. 2006. Trawling and bycatch: implications on marine ecosystems. *Current Science* 90(7): 922-31.
- McCook, L.J., Almany, G.R., Berumen, M.L., Day, J.C., Green, A.L., Jones, G.P., Leis, J.M., Planes, S., Russ, G.R., Sale, P.F. & Thorrold, S.R. 2009. Management under uncertainty: guide-lines for incorporating connectivity into the protection of coral reefs. *Coral Reefs* 28:353-366.
- McCook, L.J., Ayling, T., Cappo, M., Choat, J.H., Evans, R.D., De Freitas, D.M., Heupel, M., Hughes, T.P., Jones, G. P., Mapstone, B., Marsh, H., Mills, M., Molloy, F.J., Pitcher, C.R., Pressey, R.L., Russ, G.R., Sutton, S., Sweatman, H., Tobin, R., Wachenfeld, D. R. & Williamson, D.H. 2010. Adaptive management of the Great Barrier Reef: A globally significant demonstration of the benefits of networks of marine reserves. *Proceedings of the National Academy of Sciences of the United States of America* 107:18278-18285.
- Shanks, A.L., Grantham, B.A. & Carr, M.H. 2003. Propagule dispersal distance and the size and spacing of marine reserves. *Ecological Applications* 13:S159-S169

Part 3: Draft Marine Bioregional Plan for the North Marine Region

To complete **Parts 3a and 3b** you will need to refer to the draft Marine Bioregional Plan for the North Marine Region available at: www.environment.gov.au/coasts/mbp/north/index.html



Part 3a.

Please provide feedback on the draft Marine Bioregional Plan for the North Marine Region noting the parts and sections to which your feedback relates. In providing your feedback you may wish to consider:

- any aspects of the draft Plan that you would like to see amended
- any information that you believe is missing
- your feedback on the supporting information to the draft Plan (for example, are the proposed information tools such as the North Report Cards and Conservation Values Atlas easy to use and informative?)
- the effects of draft Plan on you/your sector/organisation/community

Part, section and page number of the draft Marine Bioregional Plan for the North Marine Region	Feedback
General	The plan appears to be a good start towards improved marine management in the northern region.
Section 2 – Conservation values	The conservation values, particularly with respect to protected species, have been addressed in a comprehensive manner. However, maintenance of overall ecosystem health should be given more attention. The plan concentrates on protecting pattern with little attention to the processes that drive these patterns. We recommend that federally- supported research be undertaken in this region to improve understanding of the complex processes (particularly oceanographic processes) that support the observed patterns.
Section 3 – Priorities and strategies	The strategies to address the pressures are well-intentioned but there are no clear guidelines on how this will be done and by whom. Delivery of the strategies will be particularly difficult for this bioregion because of the low population density and relatively limited human resources along the adjacent coast. We encourage inclusion of a clear framework for management responsibility in the final plan. The issue of cumulative impacts has not been comprehensively addressed in the plan and we strongly encourage further work on this through scenario analysis and modelling.



Part 3b.

Please provide general feedback on the draft Marine Bioregional Plan for the North Marine Region

General feedback on the draft Marine Bioregional Plan for the North Marine Region

While the plan makes considerable reference to climate change there is little indication of how this will be measured. In the north of Australia there are already some established oceanographic moorings (and several others being installed) and the data are open access, and should be explicitly mentioned in the plan. The Australian National Mooring Network (ANMN), a facility of the Integrated Marine Observing System (IMOS), has moorings measuring basic oceanographic parameters (temperature, salinity and current velocity) and, at some sites, biological parameters such as phytoplankton and zooplankton. In the bioregion there is a National Reference Station offshore of Darwin.

Thank you for your interest and feedback on the Commonwealth marine reserve network proposal and draft Marine Bioregional Plan for the North Marine Region.

