



Australian Government

Department of Sustainability, Environment,
Water, Population and Communities

SUBMISSION FORM for the Commonwealth marine reserves network proposal and draft Marine Bioregional Plan for the Temperate East Marine Region

Submission ID

(Office use only)

Thank you for your interest in the Commonwealth marine reserves network proposal and draft Marine Bioregional Plan for the Temperate East 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 Temperate East marine reserves network proposal and the draft Temperate East 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 reserves 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 21 February 2012.

How to make a submission

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

www.environment.gov.au/coasts/mbp/temperate-east

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 :

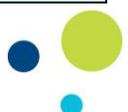
- **email** this form complete with your contact details, feedback and any additional information to:
Submissions.TemperateEast@environment.gov.au

or

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

Department of Sustainability, Environment, Water, Population and Communities
MBP submissions – Temperate East
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 21 February 2012.



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 to 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:* Tim Surname:* Lynch
2. Postal Address:* GPO Box 1538
Suburb:* Hobart State/Territory:* TAS Post Code:* 7001
3. Telephone: 0416 089 749
4. Email: tim.lynych@csiro.au
5. Are you making this submission on behalf of an Organisation? Yes No
- Name of Organisation: Australian Marine Science Association

Primary Interest

6. What is your primary interest in the marine environment? (please pick one)

<input type="checkbox"/> Commercial fishing	<input checked="" 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	
<input type="checkbox"/> Other please specify: AMSA has a specific interest in advancing marine science in Australia		

Secondary Interest

7. please specify: _Conservation, Commercial Fisheries, Recreational Fisheries

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*

Yes No

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 *Freedom of Information Act 1982*.



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

To complete **Parts 2a and 2b** you will need to refer to the Commonwealth marine reserves network proposal for the Temperate East Marine Region available at:
www.environment.gov.au/coasts/mbp/temperate-east

Part 2a.

Please provide feedback on the Commonwealth marine reserves network proposal for the Temperate East 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 Jervis Commonwealth marine reserve
Feedback
<p>AMSA supports the restriction on Danish seine, Demersal trawl, Gillnet (dermal and pelagic) and Demersal longline activities. In particular the preclusion of demersal trawling is supported because of the known destructive effects of such fishing gear on marine benthos (Kumar & Deepthi 2006).</p> <p>AMSA suggests that every effort is made to connect the state protected areas to the federal reserve to ensure the connectivity of movement for species such as snapper between inshore and offshore reefs. An example of a state water habitat that should be considered in conjunction with the Commonwealth reserve is the Sir John Young Banks.</p> <p>AMSA is disappointed that the reserve does not include 'no-take' IUCN II protection, in particular of shelf, canyon and slope habitats. This is where most of the fishing impacts occur and is generally poorly protected both in this reserve, the temperate plan and other Commonwealth marine protected areas plans. Location of high protection (IUCN II) areas would also be beneficial for research purposes. For example, recent research at the Maria Island reserve in Tasmania has indicated strong ecological effects, such as major declines in urchins and abalone, being driven by protection of predatory rock lobsters from fishing (Barrett et al. 2009).</p>

Proposed Hunter Commonwealth marine reserve
Feedback
<p>AMSA supports the restriction on Danish seine, Demersal trawl, Gillnet (dermal and pelagic) and Demersal longline activities.</p> <p>The shape of the reserve is a better design compared to others as it includes both slope and shelf habitats. AMSA also supports the connectivity opportunities in the design which abuts the state reserve.</p> <p>AMSA supports the zone for scientific reference, as it is at an appropriate scale, but is concerned</p>

that it will not be able to fulfil this role as the reserve does not include 'no-take' IUCN II protection of habitats. Shelf, canyon and slope habitats are where most of the fishing impacts occur and are generally poorly reserved both in this reserve, the temperate plan and other Commonwealth marine protected areas plans.

Proposed amendment to Cod Grounds Commonwealth marine reserve

- **existing reserve with proposed boundary adjustment and zone name change**

Feedback

AMSA supports the no-take IUCN II reserves at the Cod Grounds and also supports the change from a radius to a box shape as this will allow ease of compliance.

The east coast population of grey nurse sharks was listed as Critically Endangered by the Australian Government in 2001 (EA, 2002), and by the IUCN in 2003 (Pollard et al., 2003).

Despite protection, numbers have failed to recover and the total population has been suggested to have declined to between 300 - 3000 individuals (Otway et al., 2004). Anthropogenic mortality is known to continue as a result of by-catch from commercial fishers and from the more than 1 million recreational fishers that fish each year within the range of these sharks (Henry and Lyle, 2003).

When this ongoing mortality was modelled with the species reproductive ecology, population extirpation seemed likely in the near future (Otway et al., 2004). The current reserve proposal, while supported, could be improved in the face of the decline in the species.

AMSA does not support the small size of the reserve and lack of buffer zone based on what is now known regarding the behavioural ecology of the grey nurse shark. While grey nurse sharks predictably aggregate in relatively shallow gutters and caves on rocky reefs during the day (Pollard et al., 1996; Smale, 2002) sonic tagging studies show that they also range away from their aggregations sites at night over reef and sandy substrates (Bruce et al 2005). Gut content analyses of South African grey nurse sharks have provided additional insights into habitat utilisation, with teleosts, elasmobranchs and cephalopods associated with both reefs and sandy substrata present in the diet; and including prey typical of deeper shelf waters as well as inshore species (Smale, 2005).

With this in mind, it is recommended that the Cod Grounds reserve should be scaled up to at least an 8km by 3km box that includes the entire patch of reef. In addition, it is recommended that the expanded Cod Ground reserve should also have a buffer of 3 km width around it to protect sharks foraging away from the reef at night time; this should be of at least IUCN Cat IV with no nets, baits or long lining allowed.

In its current state the reserve only provides partial protection of a one off special feature.

While the Cod grounds and Pimpernel rock reserves may provide conservation benefits, to encourage recovery of grey nurse sharks the Commonwealth should consider protection of habitats where sharks have been observed in low numbers or where historical records are available of occurrence of grey nurse sharks (see Otway et al., 2003). This would allow areas for any expanding population to recovering into and it is suggested that similar sized reserves to those already established are developed with a core of 'no-take' IUCN II protection and adequate buffer zones of IUCN IV or better protection.



AMSA was surprised over the emphasis placed on the conservation of Bleeker's devil fish for this and other reserves as they are not listed as vulnerable or threatened under Commonwealth legislation.

<http://www.environment.gov.au/cgi-bin/sprat/public/publicthreatenedlist.pl?wanted=fauna>

Proposed amendment to Solitary Islands marine reserve (Commonwealth waters)

- existing reserve with proposed boundary adjustment to Pimpernel Rock and zone name change

Feedback

AMSA supports the no-take IUCN II reserves at the Pimpernel Rock and also supports the change from a radius to a box shape as this will allow ease of compliance.

AMSA suggests, however, that the current reserve proposal, is not sufficient in the face of the decline in the east coast grey nurse shark population. AMSA does not support the small size of the reserve based on what is now known regarding the behavioural ecology of the grey nurse shark (see comments relating to the Cod grounds reserve).

AMSA does not understand the rationale for a 2 km box at the Cod Grounds and only a 500m box at Pimpernel Rock? It is recommended that the Pimpernel Rock reserve should be scaled up to a 2 km square box. Further, it is recommended that a 3 km – wide buffer (of at least IUCN IV) be implemented to protect animals migrating out of the zone at night to forage. AMSA is also concerned over the closeness of the Pimpernel rock reserve to the edge of the Solitary Island marine reserve and hence to un-zoned ocean. The closeness of the SIMR boundary means that commercial fishing will continue within 1 km of the shark aggregation. AMSA thus suggest that the SIMR reserve as a whole should be expanded to encompass the proposed changes to zones.

In its current state the reserve is only provides partial protection of a one off special feature.

Proposed Clarence Commonwealth marine reserve

Feedback

AMSA supports the restriction on Danish seine, Demersal trawl, Gillnet (dermal and pelagic) and Demersal longline activities.

AMSA is concerned over the reserves lack of connectivity with Solitary Island Marine Park. Every effort should be made to connect the state protected areas to the federal reserve to protect the connectivity of movement for species such as snapper between inshore and offshore reefs.

AMSA is disappointed that the reserve does not include 'no-take' IUCN II protection of shelf, canyon and slope habitats. This is where most of the fishing impacts occur and is generally poorly reserved both in this reserve, the temperate plan and other Commonwealth marine protected areas plans. In particular, the lack of any protection to the canyons and heads of canyons is of concern. Canyons and canyon heads are recognised as biologically important areas where many species aggregate, often as part of diurnal or seasonal cycles (Hooker et al 1999). These species are often of commercial importance (Stefanescu et al 1994) but little is known of the ecology of these aggregations, in particular for Australian waters, or their susceptibility to human exploitation, either



through overfishing or other impacts. Aggregations are often formed for breeding and can require critical densities or the species can fail to breed successfully. Protecting canyons but not protecting canyon heads is also not desirable as species may migrate between these two habitat types.

Proposed Tasmanian Commonwealth marine reserve

Feedback

AMSA supports the restriction on Danish seine, Demersal trawl, Gillnet (dermal and pelagic) and Demersal longline activities.

AMSA also supports the large 'no-take' IUCN II component of this reserve.

Proposed Gifford Commonwealth marine reserve

Feedback

AMSA supports the restriction on Danish seine, Demersal trawl, Gillnet (dermal and pelagic) and Demersal longline activities.

AMSA is disappointed that the reserve does not include 'no-take' IUCN II zones.

Proposed amendments to Lord Howe Commonwealth marine reserve includes:

- proposed new areas
- existing Lord Howe Island Marine Park (Commonwealth Waters) with proposed boundary adjustment and zone name change
- existing Elizabeth and Middleton Reefs Marine National Nature Reserve with proposed boundary adjustment

Feedback



AMSA supports the restriction on Danish seine, Demersal trawl, Gillnet (dermal and pelagic) and Demersal longline activities.

AMSA supports the 'no-take' IUCN II component of this reserve. However, AMSA is highly critical of the change to the zoning of Elizabeth reef. By allowing a recreational use zone, protection of this area has declined with both recreational and charter fishing allowed into a previously IUCN II protected site. In particular black cod will be decimated through by-catch and increased mortality from hooking. It is unlikely that this recreational zone will deliver substantial benefits as several studies have shown that partial protection does not deliver strong conservation outcomes (Denny & Babcock 2004; Shears et al. 2006; Lester & Halpern 2008). AMSA strongly suggests that this change to zoning is reconsidered.

Proposed Norfolk Commonwealth marine reserve

Feedback

AMSA supports the restriction on Danish seine, Demersal trawl, Gillnet (dermal and pelagic) and Demersal longline activities.

AMSA also supports the large 'no-take' IUCN II component of this reserve but notes that most of this is abyssal plain which has minimal use and impacts at present. While we applaud this pre-emptive move to protection we are concerned that stringent and extensive protection is being given to this habitat type when near shore shelf and canyon habitats, that are heavily used and under threat, are not afforded similar levels of protection.



Part 2b.

Please provide general feedback on the Commonwealth marine reserves network proposal for the Temperate East Marine Region.

General feedback on the Commonwealth marine reserves network proposal for the Temperate East Marine Region

The Australian Marine Sciences Association, which represents about 900 marine scientists, acknowledges the considerable effort that has obviously gone into developing the proposed marine reserve network and strongly supports the development of protective zoning for the Temperate East Marine Region. However, the draft plan is inadequate to achieve both national and international targets for biodiversity conservation. Further, the current design will make it difficult to quantitatively assess the performance of the zoning plan. That said, many now established and strongly protected Marine Protected Areas (MPAs), most notably the Great Barrier Reef Marine Park (GBRMP) began with similar planning schemes and then developed over time into well managed reserves, through research, maturing of operations and management and subsequent rezoning.

The marine biodiversity of temperate east Australia deserves adequate protection as it exhibits wide taxonomic breadth and distinctness and has a high proportion of endemic species. However, marine reserves are only one of a suite of management strategies available to conserve biodiversity and ensure the marine environment 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 of the plan and we recommend that a well-designed marine environmental monitoring programme be established for this region.

With respect to the proposed Temperate East marine reserve network, we note the high level of protection (IUCN II) afforded to seamounts and the abyssal area. This represents forward thinking since, although there are currently limited threats in these deep areas, it is likely that anthropogenic pressures will increase in the future (Game et al. 2010). Further, we wish to acknowledge the demarcation of habitat protection and multiple use zones (IUCN IV and VI) that restrict the harmful effects of demersal trawling and other fishing types such as long lining on ecosystem function. 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 of the habitats on the continental shelf, slope, canyon heads and canyons. In particular, we note that there are no areas of IUCN II level protection of these habitat types in the plan. We are of the opinion that the federal government include high protection areas on the temperate east shelf so that Australia could have good examples of protected ecosystems to provide data for monitoring recovery of previously exploited habitats and further our understanding of 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.



The highly protected (IUCN II) areas proposed for plan, while large, are of one-off features and are separated by large distances (> 250km). It is unlikely that such isolated areas will be able to maintain connectivity and fulfil the goal of protecting Australia's marine biodiversity. This also makes replication in the design of monitoring programmes to assess the effectiveness of management very difficult. 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 temperate east continental shelf in particular.

Generally, the zoning appears to be developed along avoidance of any interaction between fishing, mining and protective zoning with this identified as being a positive outcome for the plan with less than 1% interaction identified. This planning principle, however, assumes that there is no relationship between the location of these industries – in particular the fishing industry - and areas of importance for biodiversity conservation.

An example of where this planning approach may break down in the draft plan is the relative low protection of submarine canyons and in particular the heads of canyons. As mentioned previously canyons have been recognised as biologically important but little is known of their ecology, particularly in Australia. Other areas of concern are a lack of high level (IUCN II) protection for the continental shelf and slope which are habitats that are impacted by fishing.

Changes to the draft plan to increase 'no-take' IUCN II zoning of key habitat types to levels required to achieve biodiversity conservation protection are recommended by AMSA. As a first step AMSA recommends identification of a small suite of sites where key habitats are protected in replicated 'no-take' IUCN II reserves for research purposes. At this stage of spatial planning and management of Australia's continental shelf, slope canyon, seamount and deepwater bioregions a focus on zoning for research is appropriate.

The Commonwealth should consider a design that allows replication at several spatial scales. For example, two reserves could be chosen and within each three canyons and their associated continental shelf, slope, heads and abyssal plains provided with 'no-take' IUCN II protection. This would provide replication to assess the ecological role of these habitat types and the extent that these habitats need to be protected to achieve bio-diversity conservation. To better understand the behaviour of species and the inter-connectiveness of habitats over the bathymetry these 'no-take' reserves would ideally be cross-shelf transects and aligned with similarly highly protected zones in state waters. A similar replicated approach for seamounts and other features in the plan could also be considered.

This approach would provide scientific reference zones across multiple habitats. This is the only method currently available to disentangle the impacts of fishing and climate change. For scientific reference purposes these IUCN II protection transects do not need to be extensive. A width of 10km for each transect would encompass the representative movements of many species of interest.

Performance assessment of the plan will require assessment of fish and other species at depth. AMSA suggests that the Commonwealth liaise with Associate Professor Stephen Williams from UNSW, Dr Rudy Kloster from CSIRO and Mr Tim Moltmann from UTas. Stephen is currently managing an autonomous underwater vehicle as an IMOS facility with a strong emphasis on performance assessment of habitat protection in MPAs which are too deep to be surveyed by divers. Dr Kloster is managing an IMOS facility that is using echo location to assess deep water fish



populations, while Mr Moltmann is the director of IMOS. More mapping is also required, in particular for inshore shelf habitats and we suggest that the Commonwealth contact Dr Alan Jordan from the NSW MPA who has conducted extensive habitat in various areas offshore from NSW.

In summary, AMSA welcomes the general recognition of scientific information that has been used in the planning for the Temperate East Commonwealth Marine Reserve Network. Nevertheless, AMSA encourages the Australian Government to amend the proposed network of marine reserves to address the above mentioned concerns, in particular, by adequately representing habitats in all the continental shelf and offshore bioregions and providing a higher level of protection for key features such as the continental shelf, slope, canyon and canyon heads. We are concerned that the gaps in the proposed system of marine reserves and lack of 'no-take' IUCN II in many habitat types, will result in poor performance of the network and negate the strong biodiversity conservation outcomes that could be achieved.

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Part 3: Draft Marine Bioregional Plan for the Temperate East Marine Region



To complete **Parts 3a and 3b** you will need to refer to the draft Marine Bioregional Plan for the Temperate East Marine Region available at: www.environment.gov.au/coasts/mbp/temperate-east

Part 3a.

Please provide feedback on the draft Marine Bioregional Plan for the Temperate East 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 Temperate East 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 Temperate East Marine Region	Feedback



Part 3b.

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

General feedback on the draft Marine Bioregional Plan for the Temperate East Marine Region

Thank you for your interest and feedback on the Commonwealth marine reserves network proposal and draft Marine Bioregional Plan for the Temperate East Marine Region.

