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May 28th 2009

To: The National Biodiversity Strategy Review Task Group, National Resource Management Ministerial Council

Re: AMSA Submission on the Review of the National Biodiversity Strategy, Australia's Biodiversity Conservation Strategy, 2010 - 2020.

The Australian Marine Sciences Association (AMSA) is Australia's major professional association for marine scientists of all related disciplines and its membership base ranges from around 800 to 1000. AMSA has a proud 46 year history of advancing marine science in Australia through information exchange, fostering collaboration, and contributing to public awareness and debate on marine related issues (see www.amsa.asn.au). As an organisation, AMSA has embraced an inclusive philosophy of supporting both marine biodiversity conservation and the sustainable use of marine resources. This philosophy is underpinned by the understanding of marine science practitioners that both biodiversity conservation and sustainable resource use must be supported by a foundation of sound scientific principles and processes.

AMSA National Council applauds the efforts of the National Biodiversity Strategy Task Group in developing such a comprehensive and progressive document as the consultative draft for ***Australia's Biodiversity Conservation Strategy 2010 -2020***. The proposed strategy is clearly articulated, well considered, forward reaching and represents a considerable 'next generation' leap from previous national strategies. The vision, underlying principles, 'call to action' approach and six priority actions provide both inspiration and clarity of direction. The 20 objectives and 61 specific actions together form a clear 'road map' for all jurisdictions and stakeholders to follow and achieve effective outcomes. If backed by appropriate resourcing and conviction, the strategy is well placed to make a real difference to Australia's ongoing challenge of declining biodiversity in a changing climate.

Notwithstanding the above, AMSA Council considers that the strategy would benefit from attention to some aspects of detail in the current version. The following (not in any particular priority order) provides a list of the issues, comments and feedback identified throughout the document:

- Page 13. Table of priority actions; Priority 1. Building ecosystem resilience.

Building ecosystem resilience requires an understanding and/or the identification of ecosystem components and process and their 'thresholds' or trigger-points' (eg. of condition, function, population, etc.) at which the system can no longer be resilient.

Action 1.1.2 could make mention of the need to better understand and identify ecosystem thresholds, particularly those related to ecosystem processes.

- Page 13. Table of priority actions; Priority 2. Mainstreaming biodiversity.

Nothing is provided here about facilitating the 'how to' of changed behaviour or the need to identify and prioritise problem behaviours (2.1.2).

Regarding education and awareness, an example might be to look at discontinued programs like the highly successful national 'Hands on Habitats' awards to schools (2.1.1).

- Page 13. Table of priority actions; Priority 3. Knowledge for all.

Action 3.1.1 only relates to the spatial scale. It is imperative that this action recognises the need to address the temporal scale for Australia. By comparison internationally, Australia has a poor record of long-term data series. These are proving critical in the face of climate change - to monitor trends and change, and to enable adaptation to climate change, including enhancing resilience. There is an urgent need to support and facilitate the collection of long-term data series in both terrestrial and aquatic (including marine) Australian environments.

- Page 13. Table of priority actions; Priority 4. Getting results.

The action provided here relates generically to legislation. Another important aspect is that of recovery and restoration. Could there be reference here about that? Also could there be some reference to 'making a difference' in what the priority entails?

- Page 13. Table of priority actions; Priority 6. Measuring success.

It is important here to consider whether the aim is to maintain or increase biodiversity, and this would then influence the evaluation of conservation methods used.

Action 6.1.1. mentions key indicators. Some of these would be the 'thresholds' and 'tipping points' mentioned above. Identification of thresholds is essential to monitor and measure performance. In particular, quantifying or qualifying a threshold often precedes setting of a meaningful policy or management target.

Regarding indicators: In isolation, environmental indicators (and performance measures) are merely measures - they need to be imbued within an interpretive framework to have meaning to decision-makers. For example, indicators and their trends need to be compared to baseline data or target levels to determine assessments of condition or the effectiveness of response measures. The National State of the Environment Reporting process has used an interpretive framework for indicators which may be of note for this area of the biodiversity strategy. A good example is that of the greenhouse gas issue, with the indicator being greenhouse gas concentration:

- ***Goal/Objective: (eg. prevent deleterious changes to the world's climatic system by reducing greenhouse gas emissions)***
- ***Target: (may be a 'threshold' or a policy decision, eg. as was set by the Kyoto Protocol, a small reduction in greenhouse gas emissions by a certain year)***

- ***Benchmark: (eg. a % reduction in emissions to stabilise greenhouse gas concentrations at twice pre-industrial levels by 2050. The % set by expert consensus).***

- ***Baseline: (eg. pre-industrial levels of greenhouse gases).***

- Page 15. Monitoring progress.

This section mentions the need to develop a long-term monitoring and evaluation framework. Could this be tied in with utilising the wealth of information on indicators already developed as part of national and state based state of the environment reporting processes? If so, this could be mentioned as it would highlight value-adding to past efforts. In addition, tracking of trends is also dependent on identification of thresholds as mentioned above.

- Page.16 Background

The last sentence considers the rate of sustainable use. A follow-on from this is the importance of recognising that 'rate of change' is more critical now and fundamental to biodiversity conservation in the face of climate change impacts.

- Page 17. Australia's biodiversity

The statement 'Australia is home to 600 000 to 700 000 species' needs to be qualified. It is an estimate that does not highlight the fact that many invertebrate taxa remain to be discovered or described (identified), particularly from the marine environment.

It is estimated that marine life represents some two thirds of the world's biodiversity. For example, of the 32 or so invertebrate phyla, 31 occur in the oceans, 15 in freshwater habitats and 10 on land.

It is sobering to note that while the marine invertebrate phyla represent some 95% of Australia's marine biodiversity, the vast majority are yet be discovered and/or identified. [At the same time, Australia's taxonomic skills base lacks support and is declining.] It is also recognised that biodiversity in the marine environment often peaks on the continental slope, in depths of about 200 to 1000 m. While some 80% of Australia's Exclusive Economic Zone is deeper than 200 m, these deepwater systems have been little explored. In fact it is estimated that only about 5% of Australia's entire marine jurisdiction has been explored to date.

Given the above, the statement 'Only about 25% of our species have been formally described' would seem inappropriate - unless qualified as terrestrial species.

- Page 21 and 22. Priority 1. Building ecosystem resilience

This section does not mentioned how the Environment Protection and Biodiversity Conservation Act 1999 (our national conservation legislation) links in, nor the listing of threatened ecological communities generally. Again, mention of thresholds is relevant here.

Perhaps there be a specific action related to better understanding and identifying ecosystem process thresholds and tipping points, as this will assist managers in planning in the future?

Enhancing Australia's taxonomic skills base, both with traditional and modern techniques is an important and critical issue that warrants a specific action under this priority. Without better taxonomic skills, much of our biodiversity will remain unexplored and unexplained, hindering our understanding of the capacity for resilience in ecosystems under change. AMSA believes there should be a specific action devoted to improving Australia's taxonomic skills base. It has been very little mentioned in the consultation draft strategy and commentary in this section would provide focus on the need while acknowledging an important end use for the taxonomic knowledge. While classical morphological identification skills of traditional taxonomy will always be essential, training and support for molecular/genetic technologies offers new opportunities to accelerate species discoveries and descriptions, and hence our understanding of ecosystems and their resilience.

- Page 29 and 30. Priority 3. Knowledge for all.

AMSA believes this section is an appropriate place for comment on the importance of long-term data sets, particularly for tracking trends and change and dealing with the impacts of climate change. Long-term data sets also enable more effective predictive modelling capability, which is essential for planning. Action 1.1.1 could specifically mention facilitation and enhancement of Australia's long-term data sets.

The foundation CSIRO report 'Impacts of Climate Change on Australian Marine Life' by Hobday et al. 2006 states as the lead item of the key findings:

'Notable impacts of climate change on marine biodiversity have been observed throughout the world - principally due to the existence of long-term data series. Evidence from Australian marine waters is sparse, mainly due to a lack of historical long-term data collection***.*** Importantly, little modelling has been conducted to predict future changes in Australian marine ecosystems and this remains a critical gap.***'***

Again, this section could have an action that specifically relates to the support and enhancement of Australia's taxonomic skills base and capability (eg. as part of Action 3.1.3). In short, Australian marine taxonomy is in crisis. There is only a relatively small pool of taxonomic experts and most of these are ageing rapidly - without a well established 'next-generation' in place.

- Page 34. Getting results

Action 4.1.1 – would an appropriate tool be to include some form of formal MOU between jurisdictions to facilitate action? Clearly this is not a scientific issue, but one where AMSA has seen these tools work well in other cases, hence our suggestion.

This section of actions is lacking attention to restoration and recovery - these are important components of conservation (along with prevention, protection and enhancing resilience), particularly for community based actions (eg. replanting or removing invasive species) but also for instruments such as recovery plans.

- Page 43 and 44. Measuring success

On Page 43 there needs to be here a few sentences on the reporting side of things (currently reporting is not mentioned other than in the lead-in statement in blue). For example, state of the environment (SoE) reporting could be mentioned, and the fact that it has a legislative basis in many jurisdictions. Also important, however, is that the timing of reporting currently does not align. For example, national SoE reports every 5 years,

while some states/territories report every 3 to 4 years. Also, it may be useful to consider some form of annual reporting framework for the in-between SoE years.

Importantly, there has been no link made here in the text nor in the listed actions (on page 44) between measuring success, reporting, and the proposed 'National Biodiversity Indexes' (first mentioned in Action 2.1.3 under Priority 2. Mainstreaming biodiversity; perhaps there should be some form of cross-reference). The National Biodiversity indexes sound like a great communication and reporting tool. It seems reasonable to assume there could be a strong link between these measures and SoE or some form of other annual reporting. In particular, Action 6.1.1 could be linked to the Indexes. Also this action could perhaps consider mentioning 'policy targets' - again, refer to the SoE indicator interpretive framework mentioned above.

There is currently no action under 6.1 specifically related to reporting. Perhaps this should be considered or mentioned in the results.

For the Actions under 6.4, there is no mention of related Communication strategies or Awareness raising campaigns/programs that would be required to achieve this objective.

In Conclusion

There is a sentiment in Appendix 5 that says it all - the statement is a key premise for the new strategy, and it would enhance the material in the body of the strategy - especially in the Executive Summary or Call to Action.

From Page 62:

"All Australian landscapes, seascapes and species are sustained by an array of ecological processes whose functioning determines the health and composition of all ecological communities and, indeed, the productivity and use of lands and waters. These ecological processes are the foundation of Australia's biodiversity and thus merit a greater conservation management focus."

The Australian Marine Sciences Association hopes that this collection of feedback and comments is of value to the production of a finalised ***Australia's Biodiversity Conservation Strategy 2010 - 2020***, and appreciates the opportunity to contribute to this important and historic process. Please do not hesitate to contact me on 0418 393 489 or via email (president@amsa.asn.au) should you require clarification or further input.

Yours sincerely

Dr Anthony Boxshall, Federal President
for and on behalf of National Council
Australian Marine Sciences Association
28 May 2009