



Submission by The Underwater Research Group of NSW (“URG”)

in response to

Draft Marine Estate Management Strategy 2018-28

by NSW Marine Estate Management Authority

December, 2017

About URG

URG is able to offer a unique perspective. URG is a non-profit diving club comprising people who share an interest in, and a commitment to, the underwater world. Its aim is to further all aspects of underwater exploration, research, safety, photography and sport.

URG is highly respected by marine researchers for our knowledge of the underwater world and our ability to gather ecological data. We spend several hundred hours underwater on SCUBA every year. We are presently involved in a range of citizen science projects including Project AWARE marine debris, weedy seadragon monitoring with UTS, sea slug census with SCU, Shiprock biodiversity surveys with UNSW, Reef Life Surveys (coordinating Sydney surveys and surveying further afield), Reef Explorers Down Under, and Operation Crayweed with UNSW.

The membership of URG is quite diverse and includes marine scientists, qualified professionals in other disciplines, university students and others with a personal interest in science and marine issues.

What’s missing in the draft Strategy

We commend MEMA for taking a strategic approach to the management of the NSW marine estate. However, the strategic approach, as it currently stands, has a number of serious limitations which we wish to highlight here.

a) An initiative to maintain biodiversity and ecosystem integrity

There needs to be an explicit management initiative which addresses biodiversity and ecosystem integrity, consistent with the ecologically sustainable development principles

contained in the objects of the Estate Management Act 2014. Biodiversity is not mentioned in the vision and not mentioned in any of the management initiatives.

Enhancing and protecting marine biodiversity and ecosystems in a way that is **comprehensive, adequate and representative (CAR)** should be a priority of this Strategy.

Although initiative 6 addresses targeted fishes, and initiative 5 addresses wildlife (which we assume comprises air-breathing animals), there is a huge gap regarding the protection of the thousands of other species in the ecosystem: non-targeted fishes, molluscs, tunicates, corals, hydroids, bryozoans, sponges, crustaceans, worms, algae, etc. Targeted fishes do not exist in isolation. There are interdependencies between species and we cannot presume to understand them all. Entire ecosystems require protection.

An initiative to protect biodiversity and ecosystem integrity should include an extensive scientific program of biodiversity monitoring to measure the effect of this and other initiatives over time. None of the current eight initiatives provide any way to comprehensively monitor biodiversity. Reports that focus on fishing catch and by-catch are not adequate. Until sufficient monitoring exists, there will be limited measures of the effect of any new initiative.

We were told in the DPI workshop on 14 November that habitats are a “proxy” for biodiversity. We disagree. A healthy habitat alone does not necessarily mean a healthy biodiversity, biomass or ecosystem integrity. We have seen this firsthand through URG involvement in the Reef Life Survey (a program in which trained divers gather data about biodiversity and biomass). The data show that different areas with equivalent habitat can have distinctly different biodiversity and biomass. In particular, recreational fishing has a huge impact on the level of biodiversity and biomass. For example, rocky reef and kelp habitat in Cabbage Tree Bay Aquatic Reserve supports twice the richness and abundance of fish, four times the biomass all fish, and eleven times the biomass of targeted fish compared to similar habitats in other parts of the Hawkesbury Bioregion¹.

b) A focus on the environment

The vision of the draft Strategy is incredibly human-focused: a healthy coast and sea, managed for the greatest wellbeing of the community. "Healthy" is very subjective, and is qualified by being for the wellbeing of the community. We were told at the workshop on 14 November that protection of the environment was implied indirectly by other statements in the draft Strategy, but they need to be stated explicitly in the vision and initiatives.

A healthy marine environment supports jobs and economic development in regional areas along the NSW coast. Coastal tourist authorities heavily promote the natural values of the marine environment because they realise it is a drawcard for visitors. Therefore, environmental protection actually supports economic benefits. For this reason, science-based environmental protection should be the foundation of the draft Strategy and should be stated explicitly.

¹ Turnbull, J. W., Y. S. Esmaeili, G. C. Clark, W. F. Figueira, E. L. Johnston and R. Ferrari (2017). “Key drivers of effectiveness in small marine protected areas”, in review.

The use of such subjective, socially-derived criteria for success raises questions about the efficacy of the entire Strategy. Ecosystems do not care for human politics; biodiversity does not respond to opinion polls. Ultimately, ecosystems will respond to the environmental conditions and pressures to which they are subjected, and so must be managed primarily on the basis of our best scientific knowledge. Given the incompleteness of this knowledge, precautionary approaches such as reserving significant CAR no-take areas must be the foundation of any successful environmental strategy. Social considerations should then be applied to engage the community in the management approaches required, and fine-tune the specifics (e.g. boundaries of zones). The contested nature of the marine environment requires strong science-based decision-making that may not be popular with all groups, but is necessary for the preservation of the marine estate for future generations.

c) Progressing marine protection

In the last six years, the NSW marine estate lost protection in 30 sanctuary zones under the O'Farrell government. Of those 30 zones, Premier Baird eventually restored 20 zones, leaving a deficit of 10 sanctuary zones.

Furthermore, the Independent Scientific Audit of Marine Parks in NSW highlighted the gap in marine parks in the Hawkesbury Bioregion in 2012. Five years later, we seem no closer to addressing this major shortcoming. Anything short of a large-scale, multi-use marine park in this region will fail to address the primary threats to the marine estate in the Hawkesbury bioregion.

Fishing is a point of contention in the management of the marine estate, and has been throughout the consultation process. This does not, however, reduce the magnitude of its impact on marine ecosystems. The draft Strategy appears to downplay the threat posed by fishing – for example it is not even mentioned in the list of priority threats on page 17. This is in direct contradiction of the scientific evidence; for example, the AMSA Position Statement on MPAs (2012) states:

"In Australia, fishing remains the primary threat to fishes and is the second most important threat to marine invertebrates after habitat degradation. Fishing also affects marine mammals, reptiles and birds through entanglement and drowning in fishing gear, removal of food sources, and boat strikes"².

The report by Roper (2011), which assesses the condition of estuaries and coastal lake ecosystems in NSW, further confirms the importance of fishing as a local threat, indicating that wild harvest fisheries are the only threat to fishes that is ranked as "strong" (p 133)³.

URG submits that, at a bare minimum, the 10 sanctuary zones downgraded by the O'Farrell government should be reinstated as quickly as they were removed, without waiting for years of more of consultation. Further, a marine park should be established in every bioregion, designed based on CAR principles. This requires a strategic approach, rather than the currently fragmented references to spatial management sprinkled throughout the draft

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https://www.amsa.asn.au/sites/default/files/AMSA_MPA_PositionStatement_June2012_final.pdf

³ Roper, T., Creese, B., Scanes, P., Stephens, K., Williams, R., Dela-Cruz, J., Coade, G., Coates, B. and Fraser, M., 2011. Assessing the condition of estuaries and coastal lake ecosystems in NSW.

Strategy and qualified by terms such as “consider” and “investigate”. It requires an explicit initiative on spatial management and the establishment of MPAs.

d) An explanation of the science of marine parks

We keep hearing misinformed claims that there is no evidence of marine parks having positive effects on biodiversity and biomass. There is ample evidence as to the effectiveness of well-designed and well-managed MPAs. To reference one of the most comprehensive global studies in this area, encompassing 964 sites in 87 MPAs compared with 1022 non-MPA sites in 76 marine ecoregions of the world, effective MPAs have twice as many large fish species and five times the large fish biomass of fished areas⁴.

We call on DPI to explain and summarise the science about the positive benefits of effective MPAs, in no more than a few pages, and actively promote this with the public. South Australia has done this already:

http://www.environment.sa.gov.au/files/sharedassets/public/marine_parks/mp-fact-scienceshowsmplibenefits.pdf

The current draft Strategy, which has a section on MPAs, speaks only of reviews, assessments and consolidated plans, with no clear commitment to any improvements on the water, despite years of consultation. DPI has all the evidence and is the appropriate organisation to present evidence and a clear plan for extending the network of effective MPAs in NSW. The ongoing lack of leadership in promoting the importance and value of protected areas allows community opinion to dominate the debate, even when the science is clear. This is analogous to the current issues that we face regarding climate change.

Comment on the TARA conclusions

The impact of fishing has been split into separate seven sub-categories, which is misleading. If all extractive activities were represented in a single line, the combined impact would be much higher, and the priority would be higher. Other threats, such as climate change, have not been split out and so the evaluation of one line in the table against another is inaccurate. If climate change is to be assessed in aggregate, rather than splitting it into for example, sea level rise, acidification, warming etc, so should extractive activities be treated and prioritised in aggregate.

Comments on selected initiatives

Initiative 1: Improving water quality and reducing litter

- There needs to be more focus on stopping certain pollutants at the source, and using stronger methods than the "Hey tosser" campaign e.g. banning plastic bags, banning microplastics in products, filtering microfibres at houses. URG's clean-up activities, and recent research into subtidal debris indicate the importance of fishing

⁴ Edgar, G. J., Stuart-Smith, R. D., Willis, T. J., Kininmonth, S., Baker, S. C., Banks, S., ... & Buxton, C. D. (2014). Global conservation outcomes depend on marine protected areas with five key features. *Nature*, 506(7487), 216-220.

debris – particularly plastic fishing line⁵. Whilst we understand that snagging a line is accidental, we must find a way to tackle the accumulation of these plastics and lead sinkers in the environment.

- Heavy metal pollution from stormwater run-off is an ongoing issue in Sydney⁶, but not addressed by the water quality strategies. We were told that this was because it's only an issue for Sydney and doesn't affect the North or South regions, but it is an ongoing major issue that deserves to be addressed.

Initiative 5 – Wildlife

- We do not know enough about our marine life to manage threats to them in a specific way. Years of under-investment in marine monitoring and management have left us unable to answer basic questions like:
 - Is kelp habitat declining throughout NSW, and if so, where and why?
 - Are (protected) weedy seadragons in decline?
 - What is the status of other locally endemic species, like Sydney pygmy pipehorse and Bare Island anglerfish?
- Given these uncertainties, the best way of mitigating threats to our wildlife is to follow the precautionary principle and put in place a comprehensive, adequate and representative system of MPAs. Yet spatial management is merely addressed in sub-point 5.8 under this initiative, with the weak goal to “investigate opportunities to address...spatial management”.
- The Science Statement on Marine Park Zoning in NSW, signed by 222 scientists in 2014, states:
“Sanctuary zones free of extractive activities, such as recreational fishing i.e. ‘no-take’, must be the corner stone of marine conservation. Their prime purpose is the conservation of marine life and ecological processes, but there is increasing evidence from Australia and overseas that sanctuary zones can help reverse the decline in marine health, build the resilience of marine life to climate change, and serve as buffers against overharvest which often occurs under conventional fisheries management.”
The best way of addressing multiple threats to the marine estate, including wildlife, is staring us in the face – yet we are too frightened to use it.

Initiative 6: Sustainable fishing and aquaculture

- There needs to be more comprehensive monitoring of the whole ecosystem - not only catch and by-catch. We were pleased to hear that DPI have started working with Reef Life Survey to obtain biodiversity data. This type of monitoring should be expanded and explicitly stated in the draft Strategy.
- There is a severe lack of fisheries compliance officers to catch illegal fishing. We understand there are only a few officers for the Sydney region.

⁵ Smith, S. D., & Edgar, R. J. (2014). Documenting the density of subtidal marine debris across multiple marine and coastal habitats. PLoS One, 9(4), e94593.

⁶ Montoya, D. S, Pollution in Sydney Harbour: sewage, toxic chemicals and microplastics, NSW Parliamentary Research Service, Briefing Paper No. 03/2015.

Conclusion

URG welcomes a strategic approach to the management of marine ecosystems in NSW, but the approach taken is compromised by too much focus on populism and opinion, and insufficient recognition of established science. Ultimately, the environment will not respond to popular opinion, however politically desirable this may be, and future generations will inherit a lesser world as a result. We urge MEMA to re-focus on the science, truly implement ESD including the precautionary, biodiversity and intergenerational equity principles, and establish a comprehensive, adequate and representative network of MPAs in NSW.