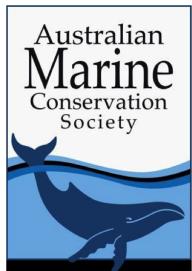


30 March 2017

Submissions to the draft New South Wales Marine Estate Threat and Risk Assessment

Australian Marine Conservation Society and Nature Conservation Council of NSW



The **Australian Marine Conservation Society** (AMCS) is a national environmental organisation working towards the conservation of Australia's coastal and marine environment and the marine biodiversity they support. Our mission is to help protect Australia's oceans for the sake of current and future generations.

AMCS has over 100,000 members and supporters who support our work financially, undertaking voluntary activities and through social media.

AMCS has a long-standing involvement in improving the protection and management of Australia's marine environment. We were formed in 1965, initially named the Queensland Littoral Society and subsequently the Australian Littoral Society, then the Australian Marine Conservation Society.

Throughout our 50 year history we have worked through science based research, policy advocacy, on ground activity, community engagement and education to take effective action to protect Australia's marine and coastal environment. We work with and empower individuals, volunteers and communities to also be voices for marine conservation. We work with industry, stakeholder groups and Indigenous organisations to identify solutions to unsustainable use of marine resources. We seek to work with and persuade government to make long term, precautionary and ecosystems-based decisions founded on the principles of ecologically sustainable development.



The **Nature Conservation Council of NSW** is the lead environmental organisation in New South Wales. We represent over 150 community environmental organisations across the state, with a combined membership of over 60,000 people. For over 60 years we have advocated for the protection of our forests, wildlife and marine environment. We have a long standing interest in the protection of the marine environment through marine parks and in best practice fisheries management.

The following outlines our general comments on the New South Wales government's draft Threats and Risk Assessment (TARA).

Concern about information levels underpinning risks and threats

The ‘risk and threat’ approach assumes that our level of understanding of the marine environment is sufficient to allow us to accurately determine risk/threat levels, predict how they might change, and prioritize them for management responses with predictable consequences.

It is the view of our organisations – and also of much of the marine science community – that the scientific underpinning of successful marine environmental management is centred on acknowledging uncertainty¹ - our *lack of understanding*.

The justification for this is simple. Many of the major risks and threats to eventuate that have most severely impacted the Australian marine environment, and those who derive benefit from it, were not predicted *a priori*. History demonstrates that issues caused by the effects of a particular threat in NSW waters have rarely, if ever, been predicted and addressed through management action before they caused serious environmental and social damage. Instead they were allowed to happen (for whatever reason), and began to be addressed *after* serious impacts occurred, often significantly as a result of determined community action and advocacy of the type our organisations and others have long pursued. That history and experience suggests that it is a largely a dangerous conceit - and expensive, in real economic terms - to assume that a management approach such as the TARA process that depends on far higher levels of informational input to accurate guide management than is often available can be successful without being underpinned by a suitably precautionary suite of management initiatives that are undertaken independently of specific TARA findings. Examples that apply to the Marine Estate in NSW include:

- the impacts of marine plastic pollution.^{2,3,4}
- the effects of industrial contamination such as the leaching of firefighting chemicals into catchments.⁵
- species/habitat range shifts caused by climate change.⁶

These are not historic issues, they are ongoing issues. None were predicted, assessed and managed on the temporal scale of the draft TARA.

We acknowledge that risk levels in the TARA have generally been increased when uncertainty has been identified; however it cannot be determined whether the degree of elevation of that risk/threat is appropriate.

The overall level of uncertainty in the draft TARA is severe, with the great majority of categories of

¹ Rachel D. Long, Anthony Charles, Robert L. Stephenson (2015) *Key principles of marine ecosystem-based management*, Marine Policy, Volume 57, 53-60,

² Duckett Paul. E., Repaci Vincenzo (2015) *Marine plastic pollution: using community science to address a global problem*. Marine and Freshwater Research 66, 665-673.

³ Frost A, Cullen M (1997) *Marine debris on northern New South Wales beaches (Australia):sources and the role of beach usage*. Marine Pollution Bulletin 34, 348-352

⁴<http://www.smh.com.au/nsw/sydneys-plastic-pollution-problem-has-an-impact-on-property-values-report-shows-20161123-gsvgxt.html>

⁵ <http://www.epa.nsw.gov.au/MediaInformation/williamtown.htm>

⁶ Hobday, AJ & Matear R (eds) (2005) *Review of climate impacts on Australian fisheries and aquaculture: implications for the effects of climate change*, Report to the Australian Greenhouse Office, Canberra, December 2005.

evidence underpinning the ‘level of confidence’ in TARA findings described as ‘limited’ or ‘very limited’. Gathering the necessary data to increase these levels of confidence in a way that can make TARA a more effective management approach, while a worthwhile endeavour, will be prohibitively expensive in terms of time and cost unless other precautionary management tools are applied independently of the TARA. The costs of procuring an acceptable level of confidence in the TARA should be compared to that of management approaches that are known to provide resilience against a broad range of threats, and deliver clear environmental and social benefits with low associated costs. A no-take reserve (‘sanctuary zone’ hereafter) system designed around Comprehensive, Adequate and Representative principles (CAR) is an obvious example of such a management measure. This management tool has a history of implementation in NSW that demonstrates low social and economic cost and strong benefits - as the TARA itself identifies.

Treatment of baselines inadequate

We are concerned that the TARA approaches threats and risks to particular environmental and social values as if their current state is the appropriate ‘bar’ or baseline from which to manage them. In our view the appropriate environmental baselines from which to manage threats and risks in most cases, would be the current state of environmental values in the absence of anthropogenic impacts such as pollution, fishing, coastal development and climate change. Although this is only hypothetically possible in many instances, the establishment of science-based CAR sanctuary zones in marine parks goes a long way towards providing this baseline in the North region and much of the South region through their utility as scientific reference zones, but not in the Central region. Relatively undisturbed/undeveloped estuaries and catchments will also have utility for some environmental and social values. For this reason, these resources must be ‘built in’ to the TARA process as the best baseline-providing tool from which to manage threats and risks where they exist. Marine parks with sanctuary zones and our remaining relatively undisturbed estuaries and catchments are already consistently used for this purpose in Australian marine environmental management.⁷

Many environmental assets – reefs, beaches, seagrass habitats, fish assemblages, are undoubtedly in a state that reflects both a broad range of cumulative pressures but also by legacy impacts. For example, the historical depletion of Crayweed beds from reefs around Sydney was likely caused by pollution issues that are largely historical, but have not returned, possibly as a result of cumulative pressures that may include the harvest – even at current low levels – of key urchin/herbivore predators. The productivity of these reefs is likely significantly reduced as a result. For such impacted assets, their present state will not be the best baseline from which to manage them, if the best achievable social, economic and environmental benefits are the desired outcome.

Key risks and threats not identified in draft TARA

Our organisations are concerned that, based on our long experience working on marine environmental issues in NSW; two overarching risks and threats that have demonstrably shaped environmental function and social and economic benefits/impacts associated with the marine environment have not been identified in the draft TARA. These are the risks and threats created by failures of policy/decision making, and those created by a lack of investment in scientific research and monitoring.

⁷ Beeton RJS, Buxton CD, Cutbush GC, Fairweather PG, Johnston EL & Ryan R (2012) *Report of the Independent Scientific Audit of Marine Parks in New South Wales*. NSW Department of Primary Industries and Office of Environment and Heritage, NSW. Pp. 1–124.

1) Policy failures that have caused, or resulted in serious impacts to the NSW marine estate include:

- A lack of action to address climate change impacts (while a global issue, we are of the view that local action – such as habitat/species range mapping and monitoring, and basic ecological research – is inadequate).⁸
- Overfishing, and the historic overallocation of fishing licenses.⁹
- Oceanic sewage/stormwater outflows.¹⁰
- Opening marine sanctuary zones to shore-based recreational fishing without securing baseline data, or conducting adequate socio-economic monitoring.¹¹

2) The consequences of a lack of investment in science is a key risk not acknowledged in the draft TARA. This risk is amplified through shifting management of the NSW marine environment to a threats and risk-management base framework that depends on a high level of ‘known knowns’, and has difficulties in adequately incorporating ‘known unknowns’ by requiring allocation of a specific level of risk to them regardless of the level of uncertainty. Recent examples of management done in absence of data include:

- the opening of sanctuary zones in NSW to fishing from shore. There was no associated monitoring program to assess the environmental impacts of implementing this policy, nor was there any research to determine the social and economic merit of doing so. Since that policy was implemented, new data is becoming available demonstrating that key recreational target species may be far less mobile than previously thought - and therefore both more effectively protected in sanctuary zones around beaches and headlands, and more likely to be impacted by fishing from shore in these habitats.^{12,13}
- Stock assessments of target species in NSW managed fisheries are largely based on expert opinion. There is an acknowledged need for further fisheries-independent data on stocks, recreational fishing take, and information on more indirect ecological effects of fishing.¹⁴ Most fish

⁸ Booth D. J., Bond N. & Macreadie P. (2011) *Detecting range shifts among Australian fishes in response to climate change*. Mar Freshw Res 62, 1027-42.

⁹ Voyer, M., K. Barclay, A. McIlgorm and N. Mazur (2016). *Social and Economic Evaluation of NSW Coastal Professional Wild-Catch Fisheries: Valuing Coastal Fisheries* (FRDC 2014-301). Canberra, Australia, Fisheries Research and Development Corporation (FRDC). July.

¹⁰[http://www.smh.com.au/nsw/raw-sewage-released-near-bondi-as-decades-of-government-ditherin g-runs-on-20161216-gtcvqy.html](http://www.smh.com.au/nsw/raw-sewage-released-near-bondi-as-decades-of-government-ditherin-g-runs-on-20161216-gtcvqy.html)

¹¹http://www.dpi.nsw.gov.au/_data/assets/pdf_file/0008/539405/media_release_141219_decision_fishing_amnesty1.pdf

¹² Ferguson AM, Harvey ES, Taylor MD, Knott NA (2013) *A Herbivore Knows Its Patch: Luderick, Girella tricuspidata, Exhibit Strong Site Fidelity on Shallow Subtidal Reefs in a Temperate Marine Park*. PLoS ONE 8(5): e65838.

¹³ Fetterplace, L. C., Davis, A. R., Neilson, J. M., Taylor, M. D. & Kno , N. A. (2016). *Active acoustic tracking suggests that soft sediment fishes can show site attachment: a preliminary assessment of the movement patterns of the blue-spotted flathead (*Platycephalus caeruleopunctatus*)*. Animal Biotelemetry, 4 15-1 - 15-11

¹⁴ Beeton RJS, Buxton CD, Cutbush GC, Fairweather PG, Johnston EL & Ryan R (2012) *Report of the Independent Scientific Audit of Marine Parks in New South Wales*. NSW Department of Primary

stocks assessed in the most recent NSW fish stock status reports have uncertain status (>60% of all stocks assessed)¹⁵, and of the stocks whose status is known, 25% are assessed as overfished or growth overfished.

- **Data** that allows us to understand the impacts of recreational fishing on ecosystem function is extremely limited, as well as data to support monitoring and distinguishing the effects of environmental changes from fishing impacts in key areas that don't have CAR-designed sanctuary zone protection, such as the Central region.
- Our **lack of understanding** of the impacts of climate change on the marine environment in NSW, identified by the draft TARA as a key threat to social and environmental values, is another example of a failure to adequately invest in science. See our comments earlier regarding policy failure to invest in better understanding and managing local impacts.

Concerns relating to process

Our organisations share serious concern around the complexity of the TARA engagement process. As leaders in marine environmental advocacy, we feel the capacity demands required to engage with the draft TARA to a level of detail sufficient to satisfy the obligation we feel to our supporters, places prohibitive demands on our capacity and resources. We note that the same concerns have been raised by the marine science community (a point raised by Sydney Institute of Marine Science representatives at the Sydney stakeholder workshop on 22/2/17), and are likely to apply to other important stakeholder groups, such as recreational and commercial fishing representative, tourism and community groups.

In our view this compromises the process. Additionally, the draft TARA submission process demands a too high level of technical expertise, which in our view has the effect of emphasizing the input of a narrow set of stakeholders with a level of direct professional expertise, and deemphasize the input of passionate but inexpert community members whose views on the marine environment are no less valid; given their equal stake in the marine environmental assets of NSW.

Industries and Office of Environment and Heritage, NSW. Pp. 1–124

¹⁵ NSW DPI (2017) *Status of fisheries resources in NSW 2014–2015 summary*

Recommendations

Recommendation 1 - consultation: Where government is making plans and decisions for the shared coastal and marine environment, including the TARA process, community consultation must be accessible to provide good guidance. Consultation must be designed around the needs of the community as much as the needs of government.

Recommendation 2 – management baselines: The current state of many environmental assets is not be the appropriate baseline to manage them from, given the largely unquantified effects of cumulative and legacy impacts. Doing so will likely diminish the environmental, social and economic benefits available in future. Where valuable reference areas are not in place, such as sanctuary zones in existing marine parks, they should be established as an important priority independently of the TARA through a precautionary approach.

Recommendation 3 – Inclusion of additional risk and threat categories: Include two new risk and threat categories, reflecting two of the major historical (and ongoing) drivers of environmental impacts and threats to social benefits. These are the failure to adequately invest in science, and policy failures. It is our view that these threats pose serious risks to the benefits derived from the marine estate of NSW in the future in the same way they have indisputably caused serious impacts in the past.

Recommendation 4 - need for management action complementary to TARA approach:

It is the strongly held view of our organisations that the draft TARA cannot silo environmental issues from the need for ongoing precautionary management action. The potential for targeted management action on some specific risks and threats that may have otherwise continued to be overlooked by managers is welcome. However, we cannot be confident that the TARA approach can deliver the outcomes that the NSW marine environment needs without being underpinned by the following three core precautionary management initiatives; whose implementation must not be delayed by the TARA process:

- 1) Implementing a network of science-based sanctuary zones according to CAR principles, in regions where they are currently inadequate (particularly as the central region);
- 2) Establishing clear targets for reducing industrial, agricultural, sewage and urban discharge pollution to below levels that harm or prevent recovery of the environmental and social assets in the TARA, such as seagrass beds and shallow reefs; and
- 3) Establishing clear targets for resolving the uncertainty around the status of NSW managed fish stocks, and for rebuilding stocks where they are overfished/subject to overfishing.

We welcome the opportunity to provide comment into the draft NSW Threat and Risk Assessment. If you would like to discuss any of the issues raised in our submission please contact Adele Pedder, Marine Campaign Manager at the Australian Marine Conservation Society on amcs@amcs.org.au or Daisy Barham, Campaigns Director at the Nature Conservation Council on ncc@nature.org.au

Yours sincerely,



Adele Pedder
MArine Campaign Manager



Daisy Barham
Campaigns Director

Australian Marine Conservation Society

Nature Conservation Council NSW