

SUBMISSION TO THE EPBC ACT REVIEW

ANON-K57V-XQ5X-3

Name

Madeline Davey

Organisation

Centre for Marine Science University of Queensland

State or Territory

Queensland

Areas of Interest

The objects of the Act; Threatened species; International obligations; Matters of National Environmental Significance; Great Barrier Reef; Cumulative impacts; Compliance and enforcement; Decision making; Public participation in decision making; Biodiversity; Conservation; Commonwealth national parks; Water;

Attachment provided

Yes

Do you give permission for your submission to be published?

Yes - with my name and/or organisation (if included)

SUBMISSION RESPONSES

This submission was provided as an attachment only. The attachment is provided on the following pages of this document.

17th April, 2020.

Professor Graeme Samuel AC

Submission to Independent Review of the Environment Protection and Biodiversity Conservation Act 1999

Dear Professor Samuel,

We are members of the University of Queensland Centre for Marine Science. Work from our research centre in the fields of marine and freshwater biology has contributed to significant conservation and research outcomes, including the 2004 rezoning of the Great Barrier Reef Marine Park (GBRMP). We frequently collaborate with policymakers, non-governmental organisations and private stakeholders, regularly inform Australian marine environmental policy and produce peer-reviewed publications in high impact scientific journals. We believe this review of the *Environment Protection and Biodiversity Conservation Act 1999* is taking place at a pivotal moment for Australia's nature environment, and we appreciate the opportunity to engage with the review process.

As a nation, Australia has the tools, mechanisms, and capabilities to ensure our unique and irreplaceable biodiversity and ecosystems are protected into perpetuity; yet we are seeing mass devastation and biodiversity loss. While we acknowledge the complexity of the environmental issues we are facing, we now have an important opportunity to improve the *Environment Protection and Biodiversity Conservation Act 1999*, and ensure that we protect and preserve Australia's invaluable natural environment. Our aim is to discuss the Act and how it might be improved specifically for marine species and ecosystems. Our comments and recommendations follow four broad themes:

1. The precautionary principle should be applied to all facets of the Act, in order to elevate environmental protection and biodiversity conservation as its primary aim. This is especially critical in the marine space where there remain large gaps in our knowledge of species and ecosystems;
2. The Act should focus on outcomes-based conditions that are properly implemented, monitored and audited;
3. Avoidance should be prioritised for sensitive marine habitats for which restoration (including offsetting) is costly and highly risky/uncertain;
4. Increased environmental monitoring, data collection and data-sharing should be incentivised, including comprehensive mapping efforts to enable better understanding of species and ecosystems.

Australia's ocean territory (economic exclusion zone) covers around 16 million square kilometres, spanning over 40 degrees of latitude, and includes a huge diversity of bioregions, ranging from Antarctic waters to tropical seas (Adler & Ward, 2001). While Australia's marine estate is recognised globally for its diversity, endemism, and conservation value, our oceans are under pressure from multiple and cumulative uses of the space including fisheries, shipping, petroleum and mineral exploration and extraction, tourism

and recreation, and multiple land-use activities (Fig 1). Overarching these local-impacts, climate change is having a deleterious effect on the entire ocean. There is consensus that Australia’s marine ecosystems are in a precipitous decline, with evidence of losses in almost every coastal and marine ecosystem across Australia, from a 50% reduction of coral in the GBRMP, to significant losses of saltmarsh on the east coast, widespread death of mangroves in northern Australia, reductions in biodiversity across Australia's rocky and temperate reefs, and dramatic declines in Tasmania’s iconic kelp forests (Lovelock et al., 2019; Carnell & Keough, 2019; Stuart-Smith et al., 2015; Wernberg et al., 2011; Asbridge et al., 2019). Essentially, there are no marine or coastal ecosystems that remain pristine and undisturbed by human threats or pressures.

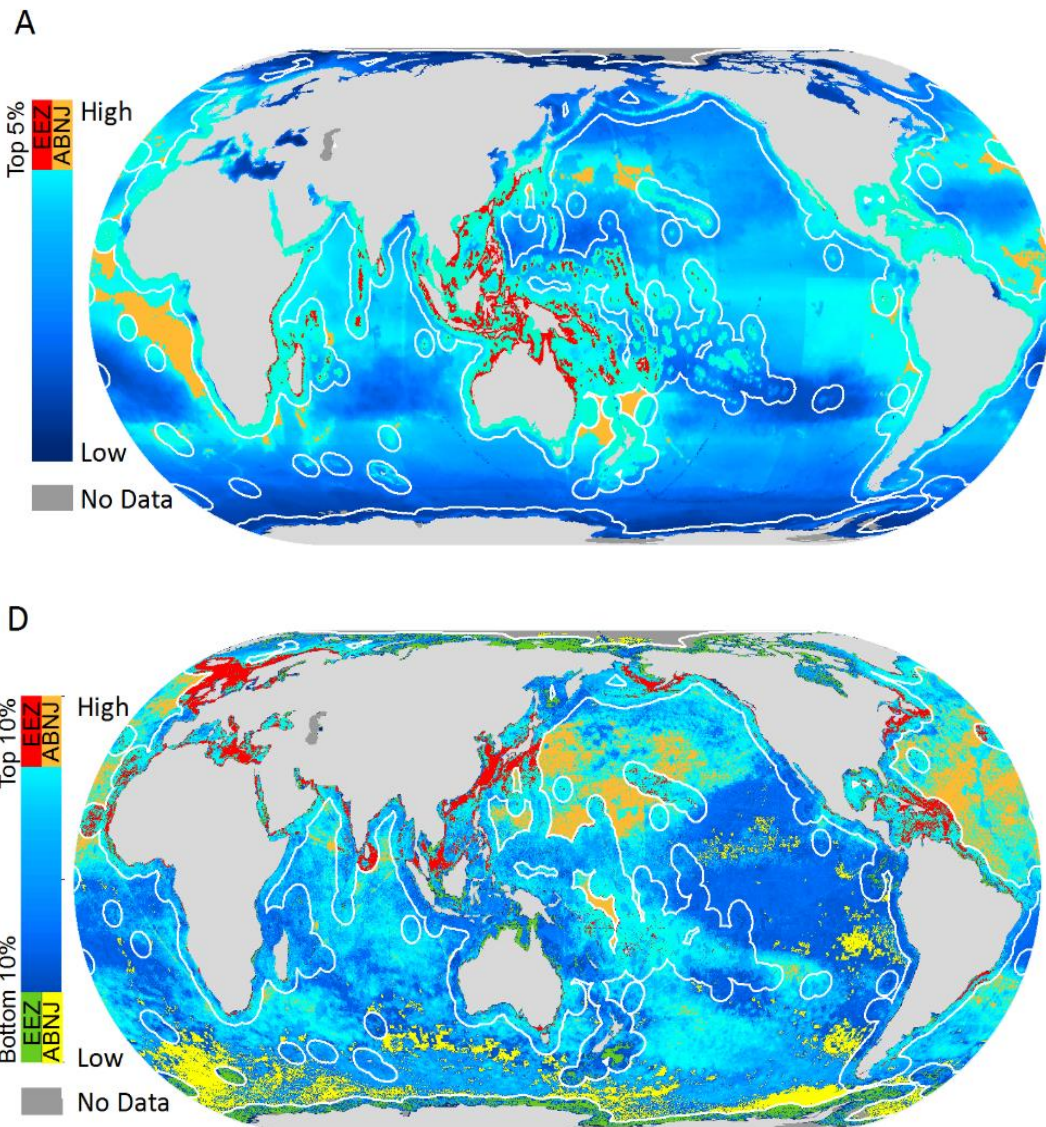


Figure 1. Marine species richness (A) and cumulative human impacts (D) for Australia’s EEZ compared to the rest of the world (from Selig et al., 2014).

The *Environment Protection and Biodiversity Conservation Act 1999* (from here on “the EPBC Act”) is the key federal environmental law for the management and protection of Australia's environment, including our marine environment. However, it is clear that the current iteration of the EPBC Act has, overall, failed to provide adequate protection of biodiversity, or met conservation outcomes.

The threatened species list, provided for under the EPBC Act, is meant to focus financial and regulatory attention on priority species and ecosystems with the aim of aiding their recovery. In the past decade, no marine species has recovered sufficiently to merit removal from the list. Instead, the number of marine organisms listed as threatened with extinction is increasing at an alarming rate (Butler et al., 2010). Since 2011, two sea snakes, two seabirds, and four bony fish and sharks have been listed; two fish species have deteriorated to critically endangered; the iconic giant kelp forests across south-eastern Australia were listed as a threatened ecological community; and there is growing evidence that coral reefs in many parts of the GBRMP should also be listed. While there have been some modest conservation successes that may trigger a downgraded threat status - most notably the increase in humpback whale populations - the overall trend in Australia's marine environment is one of increasing threats and decreasing health (e.g., Figure 2). These declines threaten over \$50 billion of annual economic activity that the marine environment contributes to Australian commerce through industries such as fisheries, shipping, resource extraction, and recreational activities, including tourism (Evans et al., 2016). Often overlooked essential ecosystem services that are also threatened, such as carbon sequestration, nutrient cycling, and coastal protection, are estimated to be worth an additional \$25 billion (Evans et al., 2016).

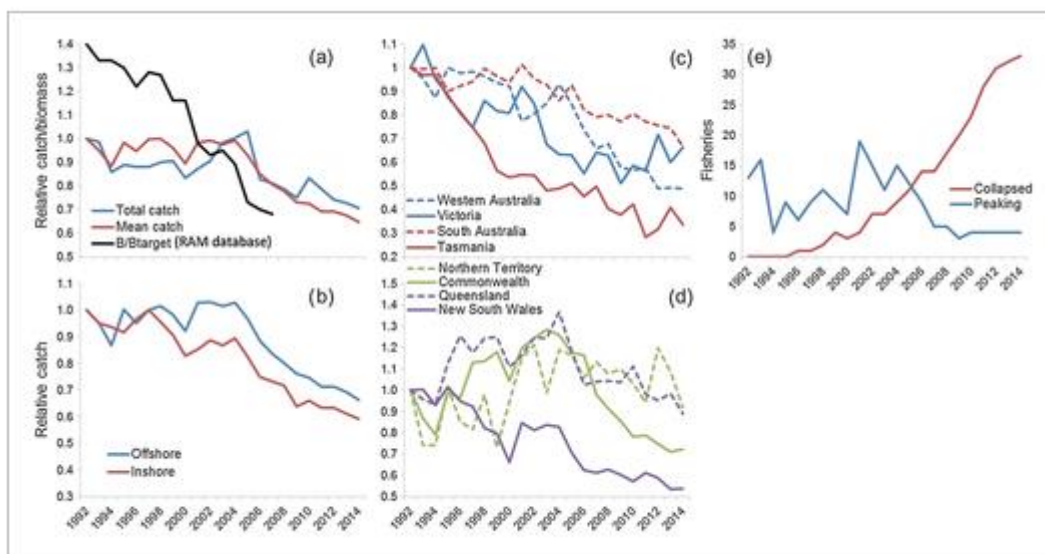


Figure 2. Trends in Australian fishery catches. (a) Catch across all reported Australian fisheries relative to 1992, mean catch across fisheries relative to 1992 after standardization of each fishery (b) Mean catch for inshore and offshore fisheries relative to 1992 after standardization (c, d) Mean catch across fisheries in different jurisdictions relative to 1992 after the standardization (e) Total number of 213 reported Australian fisheries that peaked each year since 1988, and also those regarded as having collapsed (Edgar et al. 2018).

Alongside the natural value and economic importance, Australia's marine estate is a cornerstone of the nation's historical and cultural identity and values. Indigenous Australians have strong and continual links to the marine and coastal environment, with archaeological evidence dating back centuries and examples of fish traps still seen today along Australia's coast and islands (i.e. North Stradbroke Island, Hinchinbrook Island) (Nurse-Bray, 2009). Currently, more than 80% of Australia's population lives within 50kms of the coast (Evans et al. 2018) and modern cultural links to Australia's marine estate are evident in the number of people using the ocean and coasts for recreational activities such as fishing, surfing, and diving. The strong cultural link to our marine environment is paramount to our nation's identity, but these cultural values are threatened by the declining condition of many marine ecosystems. Thus, it is critical that the

EPBC Act help to regulate and better protect the marine environment while allowing for sustainable economic activity to take place.

Preventing further declines to the marine environment and biodiversity will require a legal framework that: (i) elevates environmental protection and biodiversity conservation as the primary aim of the Act explicitly; (ii) better regulates threatening processes to our Matters of National Environmental Significance (MNES); (iii) provides effective mechanisms for enforcement of those regulations; (iv) promotes environmental monitoring, increased data collection and data-sharing, and comprehensive mapping efforts to enable better understanding of species and ecosystems and (v) focuses on positive outcomes for both terrestrial and marine biodiversity. Although these improvements will require substantial financial investments, evidence suggests that these costs are substantially less than the expected social and economic losses from continual degradation and demise of our marine ecosystems (Duarte et al. 2020, Hoegh-Guldberg 2019), and is far outweighed the intrinsic value of Australia's marine environment.

We believe the EPBC Act does not currently achieve these objectives and has therefore failed to ensure the survival and enhancement of our natural marine heritage. Below, we detail our primary concerns with the EPBC Act, and outline our recommendations for strengthening the EPBC Act to better safeguard our natural marine heritage. We comment specifically on Australia's marine species and ecosystems because of our collective expertise and because they tend to draw less research, monitoring, and protection compared to more visible and accessible terrestrial systems (Kearney et al., 2013). We have elected to structure our recommendations as responses to the questions posed in the EPBC Act Review Discussion Paper (Samuel AC, 2020) that we believe are of particular relevance to the marine environment. We do not endeavour to comment on all sections of the review, and emphasize that there are additional points and examples that should be considered in the 2020 review. We hope that our submission can help build on other responses to help guide the EPBC Act towards a stronger conservation outcome for Australia's terrestrial and marine environment into perpetuity.

Again, thank you for the opportunity to share our submission to the Independent review of the Environment Protection and Biodiversity Conservation Act 1999.

Yours faithfully,



Associate Professor Ian Tibbetts, Member of the Centre for Marine Science, University of Queensland



Madeline Davey, PhD candidate, Member of the Centre for Marine Science, University of Queensland



Leslie Roberson, PhD Candidate, Member of the Centre for Marine Science, University of Queensland

Responses to select questions raised in the Independent review of the EPBC Act - discussion paper

Question 1: Some have argued that past changes to the EPBC Act to add new matters of national environmental significance did not go far enough. Others have argued it has extended the regulatory reach of the Commonwealth too far. What do you think?

We believe that the best scientific evidence available shows that past changes to add new MNES did not go far enough, and that there is no over-extension of the regulatory reach of the Commonwealth for the marine environment. In contrast to the terrestrial jurisdictions, the State and Federal boundaries are such that the vast majority of Australia's marine environment falls under federal regulation. As the EPBC Act requires impacts to MNES to be avoided, mitigated, or offset, we believe there needs to be greater focus on the impacts that many of the approved activities under the EPBC Act have allowed, and how they have infringed on the EPBC Act by neglecting to avoid, mitigate, and offset. The ongoing decline of marine fauna and ecosystems is strong evidence that the Commonwealth regulation has not done enough. Current marine protections are limited, and are often not effective at curbing threatening processes in marine ecosystems. For instance, seagrass meadows, kelp forests, shellfish reefs, and coastal saltmarsh habitats fall under up to six of the nine MNES (McLeod et al., 2018). Yet, these are some of the habitats where the most severe declines have been recorded (Laurance et al., 2011). Further, apart from the GBRMP, Australia's marine protected areas were found to have no effect on 'business as usual' for most ocean uses - meaning that sensitive areas are continuing to be degraded by human activity in spite of the stated protections of the EPBC Act (Devillers et al., 2015). Simply adding new MNES has not resulted in positive outcomes for species and ecosystems.

A major problem for marine MNES is the lack of data, both quantitative and spatial, that is available for the marine environment. Many of Australia's coastal and marine bioregions (i.e. mangrove forests, sand dune regions) have been historically undervalued, making them susceptible to pressures and impacts based decisions made without adequate data, rather than using the precautionary principle. This means many species and habitats are at great risk. This is also the case with recovery plans under the EPBC Act. For example, a stronger focus on restoration is required as a tangible action within offsetting, as this is a large component of marine biodiversity into the future under serious pressures from climate change (McLeod et al., 2018).

Because of the uniqueness and importance of our marine estate, we believe the EPBC Act should include a more rigorous list of MNES, including more ecosystems of national importance (i.e. Tasmanian kelp forests), protected areas, and include more triggers relating to water quality management, greenhouse gas emissions and climate change related impacts, marine debris, and cumulative impacts from small-scale triggers (i.e. recreational fishing). Ecosystems of national importance need to be expanded beyond World Heritage sites, and include areas of ecological and scientific significance, and any areas under direct or potential threat according to the precautionary principle. Protected areas from all governance levels should also be included as MNES, so that activities that could potentially impact on these areas must undergo Commonwealth assessment and approval via the EPBC Act.

Question 2: How could the principle of environmentally sustainable development (ESD) be better reflected in the EPBC Act? For example, could the consideration of environmental, social and

economic factors, which are core components of ESD, be achieved through greater inclusion of cost benefit analysis in decision-making?

Australia's *National Strategy for Ecologically Sustainable Development (1992)* defines ecologically sustainable development as: 'using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased (environment.gov.au). We believe the EPBC Act should have a more holistic approach to adhering to the above-defined framework for ESD. The most critical component of environmentally sustainable development in the marine context is adherence to the precautionary principle. Given that we have little or no data or monitoring for most marine species (and many species remain undiscovered (Crespo et al., 2019), there are likely many more ecosystems and species that are in danger of extinction than are reflected in the threatened species list. Development of any kind in the ocean or coastal zone should take this into account and only proceed after a thorough and transparent process of investigation into the environmental impacts of a proposed project. In cases where impacts are identified, but projects are allowed to go ahead, a principle of no net loss needs to be implemented and have enforced compliance in both the pre- and post-approval stages. Climate change realities are critical to the definition of EDS - and the EPBC Act must consider this in all actions.

Using cost-benefit analyses (CBAs) can be helpful in this process, however they suffer from several important shortcomings. For instance, they are very sensitive to the discount rate, the choice of which is subjective, is highly contested amongst economists (Drupp et al. 2018), and is not able to adequately incorporate considerations of climate change (Weitzman 2009). Furthermore, CBAs are not well-equipped to deal with cultural or moral considerations: how is the potential extinction of a threatened species - and perhaps a culturally significant species - going to be factored into a CBA?

While CBAs are an important accounting tool, the outcomes should not be misconstrued as definitive solutions and should be used merely as tools to estimate the value of a project. The EPBC Act needs to incorporate concepts of environmental irreplaceability, ecosystem resilience, and acknowledge and consider that the natural environment cannot be reduced to a dollar value that adequately reflects the benefits of any ecosystem remaining intact, rather than the current reality of the majority of environmental costs are generally set at lower-bound estimates of the true cost. Thus, environmentally sustainable development in the marine realm requires much greater emphasis on the precautionary principle for measuring and predicting costs and benefits to biodiversity to ensure the EPBC Act is consistent with maintaining, and improving Australia's marine estate.

Question 3: Should the objects of the EPBC Act be more specific?

There is a difficult balance to strike between simplicity and specificity. Currently, the EPBC Act is over 100 pages. If the EPBC Act is too complex and restrictive, that will discourage engagement and compliance. Yet, we believe that engagement and compliance could be improved by making the certain aspects of the objects more specific. For example, the objects should clearly articulate environmental conservation outcomes, such as delisting species and ecosystems through restoration and aiming for "no net loss." There is debate in the literature surrounding the feasibility and utility of no net loss, especially for certain extractive activities in vulnerable habitats such as deep sea mining (Niner et al., 2018). However, employing the precautionary principle and aiming for no net loss to biodiversity should help ensure that we are conducting activities in a manner that allows for maintenance or improvement of our marine environment. The principle of no net loss in the ocean is often approached through biodiversity offsetting, which requires any residual environmental impacts to be compensated for in equivalent biodiversity gains

(Niner et al., 2017). Instead of defaulting to offsets, more specific objectives should be set to minimise habitat or biodiversity loss in the first place. This will require what the no net loss is compared to an alternate scenario (Maron et al., 2018). In the context of the approvals process under the EPBC Act, there should be explicit consideration of the counterfactual, where the area is protected against any activity.

Another way in which greater specificity would improve the EPBC Act is in compliance and congruence with international regulations and agreements. In the marine context, it is especially important to align specific objectives with international targets and conventions because of the abundance of migratory species and internationally shared populations. The EPBC Act should have objectives that are in line with the international agreements Australia is party to (i.e. The World Heritage Convention, The Convention on Biological Diversity, the Ramsar Convention on Wetlands of International Importance, the Convention on International Trade in Endangered Species of Wild Fauna And Flora, the Convention on Migratory Species, the UN Straddling Fish Stocks Agreement, the UN Framework Convention on Climate Change, and others).

Question 4: Should the matters of national environmental significance within the EPBC Act be changed? How?

Matters of national environmental significance within the EPBC Act should be increased, both in terms of the number of ecosystems represented as MNES and the strength of the MNES protections.

Regarding ecosystem representation, it is encouraging that the GBRMP is included as an MNES, however there are several other marine ecosystems that are in urgent need of the protections offered by MNES status. A national assessment of each marine bioregion should be undertaken to ensure that a comprehensive and connected, adequate, representative, and efficient marine spatial plan is implemented on a national level, ensuring our marine environment is protected under the EPBC Act. Biodiversity hotspots such as the sponge reefs in Exmouth bay (Hooper et al., 2002), climate refugia such as deep reefs (Assis et al., 2015), and areas of high endemism such as the southern Australian macroalgal habitats (Phillips, 2011). Moreover, areas of vulnerability such as salt marshes and mangroves (Laurance et al., 2011), and areas of particular uniqueness such as Lord Howe Island (Anderson et al., 2013), should be classified as MNES, and continual development and inclusion of threatened, unique, and culturally significant sites should be included in the EPBC Act under an iterative process and adaptive management principles.

Regarding the strength of MNES protections and the effective meaning of this status, evidence suggests that the current MNES does not afford enough real protections, especially in the marine context. The Commonwealth Marine Area (3 - 200 nautical miles from the coast) is listed as a MNES, including an extensive network of marine protected areas which are recognised to have high conservation value. Yet, analyses of Australia's Commonwealth marine reserve network suggests that existing protected areas are mostly residual, meaning they cater heavily towards minimising costs to business and industry instead of protecting important biodiversity (Devillers et al., 2015). While it is important to consider costs and benefits of protected areas, an area recognised as a MNES should be afforded real protections and careful consideration of potential impacts and activities, in accordance with the principles of the Act.

Question 6: What high level concerns should the review focus on? For example, should there be greater focus on better guidance on the EPBC Act, including clear environmental standards? How effective has the EPBC Act been in achieving its statutory objectives to protect the environment and

promote ecologically sustainable development and biodiversity conservation? What have been the economic costs associated with the operation and administration of the EPBC Act?

There are key fundamental concerns the review should address. Primarily, the EPBC Act needs to be reshaped to better represent its namesake - and be our national Act for the protection and conservation of our natural environment. The review should focus on how to build and foster a culture among stakeholders of a shared responsibility for the health of the natural world while pursuing economic prosperity, and cultural links for all Australians. A prosperous economy is only possible in the long-term with the support of a healthy environment. To date, the EPBC Act has failed to achieve its statutory objective to protect the marine environment, which is already imperilling the economic well-being of Australian communities, most notably those that depend directly on fisheries resources or on the GBR. For this reason, conservation and protection - particularly of complex systems like coral reefs and kelp forests - need to be high level concerns. In general, this review should focus on making the EPBC Act more environmentally focused, with stronger emphasis on climate change, cumulative impacts, and biodiversity protection. The precautionary principle and no net loss should guide approvals and offsetting processes to prevent further declines in ecosystems and biodiversity.

Of course, the challenge is to achieve these biodiversity outcomes without making the costs of the EPBC Act prohibitive to sustainable development. Thus, this review should focus on analysing and redesigning the approvals process to make it as streamlined as possible while achieving better outcomes, greater transparency in decision-making, and greater accountability for approved activities. The review should not only take into consideration how the EPBC Act has been operating to date, but also include a thorough assessment of 'complete' projects that were granted approval, and conduct audits of the post-approval stages, particularly if offsetting and restoration projects have been successful, or if there were iterative process for changes included in the submission. This will ensure the EPBC Act is reviewed for its adaptive management success, which is a critical component that is often overlooked in any development or projects. If projects are approved but no audit is done to ensure compliance, this is a key failure of the EPBC Act that should be closely reviewed.

Question 7: What additional future trends or supporting evidence should be drawn on to inform the review?

The EPBC Act should use supporting evidence from bioregional plans that are based on a national spatial assessment of the marine environment, with climate change projections and better baseline data to inform any decisions into the future. Further, increased recognition and inclusion of Aboriginal and Torres Strait Islander traditional environmental management through stakeholder engagement and formal recognition of Indigenous Protected Areas should be included into the review of the EPBC Act.

Question 8: Should the EPBC Act regulate environmental and heritage outcomes instead of managing prescriptive processes?

Yes, there is no 'one-size-fits-all' approach to managing marine species or ecosystems. Currently there are no enforceable outcomes mandated in the EPBC processes (e.g. no requirement that a species' status improve or that the threat is reduced in a measurable way). This means that the EPBC Act may be deemed 'effective' through adherence to the processes set out, without having provided much-needed environmental protections or without having arrested the declines of endangered species.

Question 10: Should there be a greater role for national environmental standards in achieving the outcomes the EPBC Act seeks to achieve? In our federated system should they be prescribed through: Non-binding policy and strategies? Expansion of targeted standards, similar to the approach to site contamination under the National Environment Protection Council, or water quality in the Great Barrier Reef catchments? The development of broad environmental standards with the Commonwealth taking a monitoring and assurance role? Does the information exist to do this?

Yes, marine ecosystems would benefit from national environmental standards. Currently, most restoration efforts and recovery plans for degraded ecosystems are ad hoc and lack strategic oversight and direction. The EPBC Act lacks clear, coordinated goals, aims, and outcomes that can be measured to assess conservation success. The required biological outcomes for the marine environment will only be realised with a stronger focus on goal and objective setting, inclusion of targets into the EPBC Act, and better monitoring and reporting. The geopolitical divisions of Commonwealth versus State domains are problematic for biodiversity in general, but especially in the marine realm where biological and ecological processes are connected and fluid across many scales. The federal government should act as lead-collaborator with states to develop complementary, aligned strategies and standards. The federal government should also play an active role in monitoring and assurance to ensure that outcomes are being achieved.

Standards and strategies should be established to at least meet our international targets, such as the Convention on Biological Diversity and the Paris Climate Accord, if not exceed them. Considering that climate change is a key threat to Australia's marine biodiversity, climate change mitigation needs to be more explicitly incorporated into the EPBC Act's objectives, with measurable targets. Another important target that should be more standardized at the national level is prevention of species and ecosystem extinctions. The Commonwealth could assume a monitoring and assurance role to make sure that local or state-level actions (e.g. state fisheries) meet the federal standards (e.g. monitoring requirements or bycatch thresholds in Commonwealth fisheries).

Question 11: How can environmental protection and environmental restoration be best achieved together? Should the EPBC Act have a greater focus on restoration? Should the EPBC Act include incentives for proactive environmental protection? How will we know if we're successful? How should Indigenous land management practices be incorporated?

In general, protection is better (and more cost-effective) than restoration, especially in the marine environment. For example, it is more feasible to prevent runoff from destroying seagrass habitat, than it is to restore that same seagrass habitat after the fact. Similarly, rebuilding a depleted fishery can be an expensive and lengthy process, compared to implementing management measures to effectively manage catch of a healthy stock (Pinsky et al., 2011). However, restoration is the only option for ecosystems and species that are already significantly degraded, such as the GBRMP. In these contexts, restoration must be accompanied by strict measures to arrest those threatening processes hindering recovery. These restoration measures then need to be subject to long-term monitoring to ensure intended outcomes that are equal to or greater than the baseline are achieved, and adaptive management strategies need to be implemented to respond to deviations from desired recovery trajectories.

Ultimately, protection and restoration are two sides of the same coin, and Australia's marine ecosystems require both tools (Possingham et al., 2015). To maximise the success of marine restoration projects, we

need to increase investment into research about restoration methods and feasibility of restoration in different types of ecosystems. This can be facilitated through the creation of a federal database and through greater engagement from the federal government's scientific capacity to ensure that protection and restoration efforts are being targeted to improve habitat connectivity within and between the State's coastal waters, the waters of the Australian EEZ, and extending beyond 200 nautical miles offshore to areas beyond national jurisdiction. In instances where restoration is undertaken in accordance with the EPBC Act, it is critical that a system of monitoring and evaluation be in place to ensure that the outcomes of the restoration meet the no net loss principles.

Question 13: Should the EPBC Act require the use of strategic assessments to replace case-by-case assessments? Who should lead or participate in strategic assessments?

Both strategic assessments and case-by-case assessments are important. Spatial bioregional planning with strategic assessments are needed to look at spatially and temporally cumulative impacts. Case-by-case assessments are important to make sure that minimum environmental standards are met and to accommodate highly connected or migratory species. Both approaches are now especially critical, given the rapid changes predicted to affect the oceans as a result of climate change and the growth of the blue economy (Halpern et al., 2015; Smith et al., 2010; Garcia Molinos et al., 2015). By including both a national strategic assessment as well as case-by-case assessments, the EPBC Act will be better equipped to include critical aspects such as connectivity of marine ecosystems and cumulative impacts, a record of past, present and future activities, and the spatial scale of activities under the EPBC Act and its impacts. At the same time, the strategic assessment is important to help streamline the approvals process, ensure there is a basis for each decision, and that all activities meet minimum environmental standards and have the appropriate offsetting procedure.

Question 15: Should low-risk projects receive automatic approval or be exempt in some way? How could data help support this approach? Should a national environmental database be developed? Should all data from environmental impact assessments be made publically available?

All projects should be subject to some degree of scrutiny, including mapping protocols and a structured approval process, from pre-approval to post-approval, to ensure continued compliance with regulations and that outcomes are met. Our understanding of the cumulative nature of anthropogenic impacts in the marine space suggests that even impacts from 'low-risk' projects can push species or ecosystems beyond resilience thresholds (Dales 2011), especially where systems face multiple threats (e.g. climate change, ocean acidification, low-water quality, fishing). Employing systems thinking and requiring a thorough study of the possibility for non-intuitive, indirect impacts would help to identify impacts that might threaten the stability of an ecosystem or a population.

It would be prudent to create a national database of environmental issues, and these data should be made publically available. This would provide regulators, private interests, and researchers with an important resource to draw upon when considering new project proposals, and would help identify best management practices. Additionally, a national database would help to document the magnitude and extent of impacts on an ecosystem or species. This would help us to predict and avoid the 'death by a thousand cuts' often seen in marine systems. It could also aid in expediting approvals processes for projects deemed "low-risk." If information were more readily available about the species or habitat in question, then it would be much easier to judge whether a project is actually low-risk and should qualify for a quicker approvals process.

This federal database would ideally draw from data collected by local and state governments and research institutions, and should also solicit data from private businesses, such as environmental consulting firms.

Question 16: Should the Commonwealth’s regulatory role under the EPBC Act focus on habitat management at a landscape-scale rather than species-specific protections?

It is important that the Commonwealth focus on both landscape-scale protection and species-specific protections. Protecting habitats can be a useful way to protect many species all at once, but often leaves many highly mobile or migratory species unprotected. Compared to terrestrial species, marine animals travel large distances and use many different habitats throughout their life history (e.g. manta rays, sea turtles, whales, tunas and sharks) (Fujioka & Halpin 2014; Pompa et al., 2011). Many of these species rely on a complex network of geographically separate and ecologically distinct habitats during their lives. This necessitates an approach that protects the animal in their breeding grounds, along their migratory routes, and in their feeding grounds. Due to our limited understanding of the species richness of the deep ocean, the only way to protect as-yet undescribed species and ecosystems is to employ the precautionary principle and provide landscape-scale protections.

Question 22: What innovative approaches could the review consider that could efficiently and effectively deliver the intended outcomes of the EPBC Act? What safeguards would be needed?

There are many possible innovations that could potentially improve the outcomes of the EPBC Act. Here, we comment only on one measure - independent experts - which we believe is of paramount importance to improving the EPBC Act. This review should carefully consider input from further independent experts who could best inform new approaches for bettering the EPBC Act’s ability to protect Australia's marine estate. We strongly believe a thorough inventory of activities - including their ongoing impact and measurable success - will ensure the review can adequately address the gaps and shortcomings within the EPBC Act as it stands.

Question 24: What do you see are the key opportunities to improve the current system of environmental offsetting under the EPBC Act?

There should be more stringent restrictions on project proposals that impact MNES, including a moratorium on allowing offsets for impacts on some critical habitats or endangered species. Certain communities like coral reefs and kelp forests should be classified as too significant and unique to adequately offset.

When offsets are approved, they need to meet the following criteria (Maron et al., 2016, Miller et al., 2015):

- Defined, implemented, and monitored using rigorous science-based standards and procedures.
- Designed to, at the minimum, benefit the habits and/or species that the project is projected to harm.
- Designed to adhere to the principles of adaptive management so that management actions can be quickly evaluated and adopted and/or discarded as scientific understanding improves.
- Subject to strict compliance measures including monitoring and periodic evaluation.
- Have clear science-based limits.
- Automatic rejection for activities that are offsetting impacts on critical habitat, endangered or threatened species and any irreplaceable habitats
- Developed with an explicit adherence to the precautionary principle

- Established into perpetuity, and protected from being offset themselves

Question 26: Do you have suggested improvements to the suggested principles? How should they be applied during the Review and in future reform?

The fundamental principle guiding all components of the EPBC Act should be to protect and restore Australia's unique natural environment. The EPBC Act must mandate clear outcomes for biodiversity, not just actions that may or may not have any positive effects on the species or ecosystems of concern. For example, a project can be approved with data collection and monitoring of a threatened species as the offset, but there is no provision to respond on account of the findings of that monitoring program. Without clear specification of the required outcome for species or ecosystems as part of approval conditions, there is no liability for preventing net negative impacts on threatened biodiversity. In order to ensure positive outcomes for Australia's biodiversity, monitoring for compliance with conditions would need to include not only monitoring of actions, but of the enduring outcomes of those actions. The national environmental database (discussed in Question 15) would help to draw connections between actions and outcomes by providing spatial, temporal, and case specific data for analysis.

Collating and expanding data and knowledge is of paramount importance to management of the marine environment. There is a severe lack of baseline and spatial data for Australia's marine biodiversity, compared to terrestrial species and ecosystems. Lack of data has allowed many marine species and ecosystems to slip through the cracks because there was insufficient information on species and habitats, and their interactions with the proposed activities. Thus, for the marine environment, it is especially critical to implement the precautionary principle when considering potential impacts.

Concluding remarks on the EPBC Act review

We would like to thank you for taking the time to read and consider our submission for the 2020 review of the EPBC Act. We hope our suggestions help to guide the Nation's policy to ensure that Australia's unique and biodiverse marine estate is protected well into the future.

We believe this review presents an important opportunity to expand and improve the EPBC Act to better incorporate best-practice management and achieve positive conservation outcomes for Australia's biodiversity and environment. We hope that, rather than being an opportunity to streamline the approval process of the EPBC Act by removing 'green tape', this review focuses on incorporating the last ten years of science into policy and decision making to encourage engagement and participation with the EPBC Act, and provide better outcomes for biodiversity. The steep declines in biodiversity and habitat condition across Australia's marine ecosystems are a clear sign that "business as usual" is unacceptable. We identify four broad themes for improvement of the EPBC Act: (i) elevate environmental protection and biodiversity conservation as the primary aim of the Act, including better incorporation of the precautionary principle; (ii) focus on positive outcomes for (marine) biodiversity, including better regulation of threatening processes to our MNES and effective mechanisms for enforcement of those regulations; (iii) recognize that biodiversity offsets are the least desirable action and the least likely to deliver positive outcomes for biodiversity; and (iv) promote environmental monitoring, increased data collection and data-sharing, and comprehensive mapping efforts to enable better understanding of species and ecosystems

Finally, we note a general concern with the political environment surrounding the EPBC Act and this sanctioned review. The framing of “green tape” and excessive legislation is especially concerning for the marine environment, where habitat destruction and threats to species have proceeded largely unchecked, compared to terrestrial environments. Even though the vast majority of Australia’s marine environment is out of sight and out of mind of most Australians, the economic and cultural value of the nation’s marine estate is beyond measure. The EPBC Act is the key legislation that can provide protection and prevent - or hopefully reverse - the continued degradation of marine ecosystems, if we capitalize on this critical opportunity to revise and improve it.

Works cited

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