

20 September 2017

Ms Sally Barnes
Director of National Parks
Australian Marine Parks Management Planning Comments
Department of the Environment and Energy
Reply Paid 787
CANBERRA ACT 2601

Dear



RE: COMMENTS ON THE DRAFT MANAGEMENT PLANS – AUSTRALIAN MARINE PARKS AND PARKS AUSTRALIA

It is with pleasure and great interest in the future of the Australian marine environment that we provide the following comments to your Draft Management Plans for the proposed Australian Marine Parks. These comments are presented in two main parts, being general comments and others more specific in nature. Given the remit of the WA Museum, the specific comments arise from our understanding of the Western Australian coast-line, although the tenor of the comments may be applied to other jurisdictions. [References are included in the Attachment].

A. General Comments

It is encouraging that a large marine reserve network is being put in place Australia-wide. This approach is very timely as we continue to examine the “Blue Economy” and its contribution to global health. This is particularly important in our Indian Ocean Region as its influence is extensive on the Australian coastline.

With respect to the selected marine park areas, these appear to have been chosen for a number of reasons including representation, unique features and existing usage. However, there is a deficiency in research to understand the basic biodiversity, ecology and life history of marine invertebrates beyond a handful of commercially important taxa. The importance of this aspect is outlined below.

Throughout the draft Management Plans (especially under the heading of *Marine Science Plan*), there is emphasis on ecological and monitoring research to inform management decisions through an adaptive management approach. This is to be welcomed, but one of the fundamental assumptions of ecological, biodiversity and fisheries research is that the species under study are correctly identified.

This is the realm of taxonomists and systematists. In Australia, taxonomy is largely associated with state museums, although some other agencies (CSIRO and some universities) are also major contributors. The knowledge within these institutions is based on many years of experience and on extensive specimen reference collections. Unfortunately, this resource is often not utilised, or underutilised, in some ecological research and decision-making, yet the quality of the research is only as good as the identification of the species. The importance of accurate identifications cannot be overlooked and there are many examples of how inaccurate identifications can limit or undermine other research (e.g. see Bickford *et al.*, 2007).

The focus on adaptive management is excellent with regular monitoring, evaluation, reporting and review of the implementation of the plan well worthwhile, but how and who will undertake the monitoring? There seems to be an interest in getting citizen science surveys (e.g. ReefLife) to perform these monitoring tasks. There is no doubt that citizen science projects can contribute significant value to such monitoring but there is also a requirement for 'quality control' that may well require the involvement of experts. In the past, monitoring of national marine reserves, such as Ashmore Reef, has been tendered out to consulting companies. There is an argument that nationally funded agencies like AIMS should conduct such monitoring as part of their core business in tropical Australia, possibly in partnership with species experts from museums and universities.

Consideration of the effectiveness of monitoring and evaluation and the appropriateness of key indicators and performance measures (p. 18) is good but how is this to be achieved? What are the key indicators and performance measures? There is a lack of detail about these.

Taxonomic research determines the characteristics and definitions of species and, therefore, how many species there are. The accuracy of estimates of biodiversity is only as strong as our taxonomic understanding, which is constantly improving with new technologies and information.

There are other implications for conservation and ecological studies. For example, one 'species' may be a complex of several species, each with its own suite of specialised ecological attributes. Each species might require different management practices or habitat protection, which would be overlooked without accurate taxonomy (e.g. Geller, 1999).

We cannot stress strongly enough the importance of the underpinning conservation science authoritative taxonomy. Without this aspect being fully acknowledged and supported, the Australian marine parks management and that of our entire coastline will be found wanting. Taxonomy is relied upon across many areas including legislation of endangered species, timely recognition of invasive species which requires knowledge of not only local fauna, but species in a global context (e.g. Clavero and García-Berthou, 2005) and environmental management programs following significant disruptions, such as marine heatwaves, acidification, mining and marine harvesting.

In the interest of sound science, research informing the adaptive management approach should routinely engage and collaborate with taxonomists and systematists. Most taxonomists also have skills in ecology, evolutionary biology, genetics, biology and more.

It is recommended a funding program be established to support this critically important aspect; BushBlitz which is run by the Australian Biological Resources Study may serve as a useful model.

There is a vision to “establish network advisory committees for the marine parks to ensure users and interested stakeholders have ongoing input to the management of Australian Marine Parks” (p. 30). When will this advisory committee be set up? Who will be invited to join?

The vision to develop a commercial tourism authorisation system to encourage best practice and eco-accredited businesses operating in Australian Marine Parks is a good suggestion.

Additional emphasis on Aboriginal rights and engagement is welcome, but careful thought is necessary to establish how this will take place in practice. Some examples are provided (p. 30) of ways for Aboriginal peoples to collaborate and engage but it is not clear how approvals are obtained, and the best practice approach for engaging with Aboriginal peoples for conducting research. At present the way forward is to contact the community representatives individually and seek permission, then the community representatives discuss the project with the Traditional Owners (TOs). Permission is usually granted, and TOs or rangers participate. In order for participation to occur, salaries must be covered along with all travel costs, which in some cases necessitates hiring charter planes. Usually science research budgets, especially for students and early career researchers, are tight and the funding TO/ranger participation in fieldwork is a challenge. It would be ideal if the Commonwealth could support research and science endeavours by an indigenous engagement grant system. For example, small (>\$10,000) grants could be applied for on a case-by-case basis to support collaboration and indigenous engagement in science and research projects.

B. Specific Comments

Adaptive Management

The Director will undertake periodic monitoring, evaluation, review and reporting on the implementation of this plan (e.g. Item 1.12, page 16, South-west Commonwealth Marine Reserves Network Management Plan 2017)

The adaptive management approach is welcomed, but the term periodic is rather vague. In contrast, the Implementation Plans (1-3) have defined timeframes for action. A more defined commitment to timeframes about how frequent the monitoring and evaluation will be, especially biological monitoring, is desirable.

Positioning of Zones

The draft Management Plans provide little or no evidence-based biological/ecological justification for the positioning, size and types of zones within each Marine Park. One of the criticisms often levelled at the process of establishing protected areas (by a range of stakeholders) is the seemingly arbitrary nature of determining zones. The draft Management Plans could deflect much of that criticism by providing defensible evidence for these decisions. If evidence is scarce and the decision is a 'best-guess', then that should be acknowledged with the commitment to refinements through the adaptive management approach.

Invertebrates

We believe that the importance of invertebrates as indication of biodiversity, ecological identity and environment quality is under recognised. For example, for at least three of the marine park areas (Abrolhos p. 125 in Southwest draft plan, Carnarvon Canyons p. 92 in Northwest draft plan, and Eighty Mile Beach p. 104 in Northwest draft plan) the major conservation values listed were all related to large vertebrates (e.g. birds, whales, sea lions), with an 'expectation' of invertebrate species likely to occur, with direct statements that there is 'limited information about species use of this Marine Park' (p. 92 for Carnarvon Canyon Marine park). Given that invertebrates comprise 99% of global biodiversity by species, (Ponder & Lunney, 1999), it is unfortunate decisions are made with so little actual data on such a significant proportion of the fauna. This also makes it impossible to assess what type of activities to permit in each park, as it is unknown what a given impact will be on a massive faunal subset that remains largely unstudied and undocumented in the area (Middelfart et al., 2016).

An example is Eighty Mile Beach. This is a huge sandy area and similar areas are always highly important for infauna (taxa that live in the sediments), including bivalves and other burrowing organisms. However, little is known about this fauna and it is not mentioned in the reasons for ongoing recognition of this marine park, even though importance of the area for migratory seabirds, which eat invertebrates, does receive mention (Eighty Mile Beach p. 104 in Northwest draft plan). A recent study, for instance, has highlighted significant and unexpected impact on zooplankton subject to marine seismic survey air gun operations (McCauley et al., 2017). This suggests that impacts can be specific and need targeted study. Invertebrates such as zooplankton are often food sources for larger animals, including vertebrates, such as whales. In all cases there is a need to survey and better understand marine invertebrate biodiversity in each proposed park. This is likely to be significant given recent survey work in other areas, such as the Kimberley Marine Parks, which reveal a high diversity of sponges, soft corals and other taxa. This fauna is important to protect in its own right, but also creates habitat for other species.

Activities in the Marine Parks

Mining: There is a lack of specificity in relation to the existing mining operations and their continuation which is of some concern. The footnote on p. 57 outlines *proposed mining operations conducted under usage rights that existed immediately before the declaration of a marine park do not require approval from the Director*. How many of these proposed mining operation agreements are in place, and which parts of the marine parks do they affect? More clarity would enable a considered response on this aspect. Clearly there are ongoing risks if operations that are to be prohibited are allowed due to prior approach.

Mining operations are only allowed in Special Purpose Trawl Zones or Multiple Use Zones but the construction and operation of pipelines appear to be allowed in National Park Zone II (p. 58). The pipelines are directly related to mining operations so why are these treated separately?

International fishing: It is unclear if Indonesian traditional fishers are still permitted to extract resources at Ashmore Reef under Memorandum of Understanding (MoU) agreements. What is the timeline for this agreement to be reviewed? A similar situation applies for Browse Island. It would be reasonable to outline these matters and any other international fishing agreements that have rights over areas of the Marine Parks.

Specific zones:

Bremer (p. 110), Twilight (p. 102) and Eastern Recherche (p. 104) Marine Parks

The invertebrate fauna of shallow coastal waters of the southern WA coast has been addressed in two marine biological workshops covering the Albany and Recherche Archipelago areas (Wells et al., 1991; 2005). The references within both volumes provide details of various fauna and highlight the biodiversity and endemism of the southern coast, and thus help support the justification for marine parks. Deep water research along the southern coast is largely restricted to one survey, which surveyed depths from 100–1000 m from Bald Island westwards (McEnnulty et al., 2011). As such, the deep water fauna of southern WA has effectively not been surveyed in a systematic way. There have been a recent series of surveys in the eastern parts of the Great Australian Bight, which sampled in waters >5000 m, the results of which should be forthcoming (e.g. http://www.misa.net.au/GAB/research_results). The proposed marine parks cover a range of depths from 15–6000 m of significant underwater features, such as Bremer Canyon, an area of periodic upwelling and aggregations of charismatic megafauna. The paucity of biodiversity data in these areas needs to be addressed. The recent surveys in the eastern Bight should be used as a model on which to base future biodiversity research and increase understanding of why these areas have been identified as having high natural values.

Adjacent areas to the east have been surveyed for hydrocarbons as part of oil and gas exploration, and this has been used to leverage funding from industry for baseline biodiversity surveys. This model should also be explored for the shelf slope, abyssal and hadal depths in Western Australia.

Perth Canyon Marine Park (p. 116)

The Perth Canyon has had only few, limited biodiversity surveys to determine the importance of the area (McEnnulty et al., 2011, McCulloch et al., 2016). Even though faunal sampling during these surveys was limited, they found a unique fauna in the Canyon, but further surveys to build on this knowledge and to look at similar depths of adjacent areas is needed to determine the extent of the natural values highlighted within the proposed marine park. We support the creation of a marine park covering this geological feature as it would protect a feeding ground where the largest aggregations of blue whales can be found in Australia, but propose further groundwork on the faunal biodiversity should be undertaken to build on the knowledge base as to why this feature is biologically important.

Montebello Marine Park (p. 100)

The shallow water fauna of the Montebello and Barrow Islands region has been relatively well documented (e.g. Allen, 2000; Jones & Berry, 2000; Marsh, 2000; Wells & Bryce, 2000). The present proposal simply extends the areas covered from the WA State Marine Park to include deeper waters (~120 metres) further north and west. Significant surveys have recently been undertaken and more are planned in the next few years, making this area one of the best surveyed in Australia and providing a solid basis for establishing marine parks and other conservation management practices in an area of extremely high industrial importance.

Ashmore Reef and Cartier Island (p. 117-120) are the only Class 1a Sanctuary Zones in the entire north-west region. There are no Class 1a Sanctuary Zones in the entire Kimberley Marine Park. This seems like an anomaly.

Kimberley Marine Park (p. 114)

The maps are relatively rudimentary and do not illustrate the benthic habitats/reefs within the marine park, so it is difficult to see what is, and what is not, included. For example in the Kimberley marine park, are Rob Roy Reefs or Heritage Reef included? Are the midshelf shoals like Heyward Shoal included? If they are included, why is there no special zonation of any of these important parts of the central and northern Kimberley?

It is stated on p. 115 in the Kimberley Marine Park Plan that the “Benthic biological communities in the deeper parts of the bioregion (e.g. banks/shoals) have not been extensively studied, although high levels of species diversity and endemism occur among demersal fish communities on the continental slope”. Is there a plan to enable further research into these communities?

North-west Marine Park Network (p86)

It is not clear whether Hibernia Reef is included in the North-west Marine Park Network (p 22, 119). Clarity on this would be welcomed as it forms part of the Ashmore – Cartier network and may contribute to the extensive marine ecology and migratory importance of this area. If Hibernia Reef (42 km north east of Ashmore Reef) is not included, an explanation should be provided.

We would like to thank you for the opportunity to comment on the Draft Management Plans for the Australian Marine Parks and that you find these comments helpful.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Alec Coles', written in a cursive style.

Alec Coles OBE
Chief Executive Officer

ATTACHMENT

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