

18 September 2017

Director of National Parks  
Temperate East Marine Reserves Network Draft Management Plan  
Department of Environment and Energy  
Reply Paid 787  
Canberra ACT 2601

Dear Ms Barnes

**Re: Draft Temperate East Commonwealth Marine Reserves Network Management Plan**

Thank you for the opportunity to comment on the draft Temperate East Commonwealth Marine Reserve Network Management Plan.

The Temperate East Commonwealth Marine Reserves Network encompasses the most diverse range of habitats of all Commonwealth Marine Parks Networks. The proposed management plan changes alter the protection framework within the Temperate East Network as proposed in the *2017 Draft Temperate East Commonwealth Marine Reserves Network Management Plan* (hereafter the Draft Plan) and will significantly compromise the maintenance of its biodiversity.

Given the high level of fishery activity in the area and other anthropogenic impacts, we are strongly concerned by further reduction in ‘no take’ *Marine National Park* zones (IUCN category II) (“Green Zones”) over the already minimal proportion of such zones. We are concerned because, being critical sources of larval supply, *Marine National Park Zones* seed surrounding areas and provide additional system resilience to the impacts of climate change (Halpern *et al.* 2006; Barrett *et al.* 2009; Edgar *et al.* 2014; Harrison *et al.* 2012). They also provide important baseline reference sites for monitoring the effectiveness of management strategies. Thus, *Marine National Park Zones* not only help sustain biodiversity but also support viable fisheries and enable evidence-based decision making.

The majority of the currently proposed *Marine National Park Zones* are in deep waters where there is no human activity – with about two-thirds of the total concentrated in the Norfolk Province. In contrast, the few highly protected areas on the continental shelf and upper slope where high biodiversity values are threatened by concentrated human impacts (Williams *et al.* 2009) are miniscule and isolated. These require more protection to be effective. Indeed, the Cod Grounds and Solitary Islands *Marine National Park Zone* (IUCN Category II) are currently so small that they are unlikely to satisfy the definition of such areas, which are supposed to be “of sufficient size and ecological quality so as to maintain ecological functions and processes that will allow the native species and communities to persist for the long term with minimal management intervention.” (see: <https://www.iucn.org/theme/protected-areas/about/protected-areas-categories/category-ii-national-park>).

Specific points of concern to the Australian Museum Research Institute in the draft Management Plan:

**1. Proposed Marine National Park Zones too few and too widely spaced for effective connectivity**

The proposed *Marine National Park Zones* in the region covered by the Management Plan are too few and too widely spaced. Although some *Marine National Park Zones* in oceanic parts of the region are large, they are essentially one-off features separated by large distances, in most cases by more than 250 km. It is unlikely that these few, isolated areas could maintain adequate genetic connectivity. The Draft Plan therefore risks not meeting stated goals EPBC of maintaining marine biodiversity. Such a design also makes replication for designing effective monitoring very difficult. In a network, highly protected areas should be spaced about 20–80 km apart to ensure that connectivity facilitates replenishment (Shanks *et al.* 2003; Halpern *et al.* 2006; McCook *et al.* 2009, 2010).

Additional *Marine National Park Zones* with closer spacing should be included in order to adequately conserve the biodiversity of these regions, and of the temperate east continental shelf in particular. We recommend A Comprehensive, Adequate and Representative (CAR) network of IUCN level II reserves. Such a CAR-based system with extensive *Marine National Park Zones* will more effectively service fishery stocks and meet the challenges of damaged ecosystem recovery. Each component of the network should include a nominated *Marine National Park Zone* in order to best protect the biodiversity in these areas. Hunter, Jervis Bay and Gifford Commonwealth Reserves do not presently contain *Marine National Park Zones* despite their high biodiversity.

**2. Critical habitat underrepresented**

The proposed network of reserves covers about ~370,000 km<sup>2</sup>, comprising about 25% of the Temperate East Region, but the proportion of complex habitat protected from mining and fishing on the continental shelf, slope and canyons are negligible. This is incompatible with “Shelf rocky reefs” and “Canyons of the eastern continental slope” being listed as two of the 16 regional priorities. Undersea canyons channel nutrient-rich waters that promote biological productivity that feeds ecosystems and fisheries (Hooker *et al.* 1999). A number of areas along the NSW coast have distinct, low level ridges running parallel to the coast between the 60 and 120 m contours. These features separate the inner shelf reef systems from the relatively level mid-outer shelf plain (Heap & Harris 2008). These ridges are relictual coastline features and provide significant habitat for a host of marine species. Tagging data indicate that these ridges act as corridors for movement of species such as white sharks along the east Australian coast. These features likely provide navigation cues and foraging opportunities for shelf-migrating species.

**3. Lack of co-ordination with zoning in NSW State reserves**

A significant number of the reserves in the region are near NSW State reserves, including Cod Grounds Marine Park, Hunter Marine Park, Jervis Marine Park, Lord Howe Marine Park and Solitary Islands Marine Park. It is not clear, from the Management Plan, how Commonwealth and State reserves will interact, particularly as the latter include higher proportions of more highly protected habitat. For example, the Proposed Hunter Commonwealth Marine Reserve is contiguous with the NSW Port Stephens – Great Lakes Marine Park. The entirety of the proposed Commonwealth reserve near the State park is a *Multiple Use Zone* (IUCN Category VI). However, some of the proposed reserve is adjacent to *Sanctuary Zones* in the NSW Marine Park. We recommend clearer documentation on how these reserves will interact from a management perspective, focusing on two key issues. The first is compliance and enforcement since the boundary between these zones is not simple. The second is the failure to leverage the biodiversity benefits of the better protected areas in State Parks. The Proposed Hunter Commonwealth marine reserve is biologically important for many species including cetaceans and a range of seabirds and is a known aggregation area of the White Shark, listed as a vulnerable species in NSW. Three identified areas of critical habitat for the NSW-listed critically endangered eastern population of the Grey Nurse Shark are located in the NSW Port Stephens – Great Lakes Marine Park. As individuals of this species can move substantial distances, the Grey Nurse Shark undoubtedly utilises parts of the proposed Commonwealth Marine Reserve. Because of the importance of the region to such species, we recommend a higher level of protection than the currently proposed *Multiple Use Zone* (IUCN Category VI). We strongly recommend that the reserve should include *National Marine Park Zones* (IUCN Category II) to improve the protection of cetaceans, seabirds and endangered sharks.

#### 4. Lord Howe and Norfolk Marine Parks

In the draft, no proposed high-level marine protection surrounds Norfolk Island. The waters around the island are proposed to receive only the lowest level of protection (*Multiple Use Zone*; IUCN Category VI) in which a broad range of fishing methods, aquaculture, mining and petroleum exploration and development will be allowed. Regulation under the Memorandum of Understanding between the Norfolk Island Government and the Australian Fisheries Management Authority will provide some additional conservation protection. However, the Memorandum largely ignores invertebrates and the intertidal habitat. (Memorandum available at: <http://www.afma.gov.au/wp-content/uploads/2010/06/mou.pdf>). We recommend a *Marine National Park Zone* include the waters around Norfolk Island.

The efficacy of the *Marine National Park Zone* proposed for the northern section of the Norfolk Marine Park would be greatly enhanced if it was extended further south to ensure a selection of seamounts, some of which rise to within 1000 m of the surface and to ensure that a good representation of the continental slope and shelf as well abyssal depths are protected as this area. The Norfolk Eddy creates stable conditions different from those found in other areas of the Province and larvae are retained within the area (Brewer *et al.* 2007). This area has relatively high productivity and high biodiversity with endemic species (Clarke *et al.* 2003). As such we do

not support reduced protection from mining in the Norfolk and Lord Howe Marine Parks. We also strongly oppose the proposed downgrading of protection to Elizabeth Reef to permit line and spearfishing, given its important black cod populations, which are genetically distinct from mainland populations and therefore of conservation significance (Denny & Babcock 2004). Moreover, Black Cod are a listed threatened species in NSW. Elizabeth and Middleton Reefs will probably also act as important refugia for tropical species as water temperatures increase under projected effects of climate change. We strongly recommend extending *Marine National Park Zone* protection from Middleton Reef southwards to include Elizabeth Reef.

#### 5. Gifford Marine Park

We recommend the *Habitat Protection Zone* be upgraded to a *Marine National Park Zone* and extended southward to protect the endemic seamount fauna of this area. This area includes a cluster of seamounts with limestone caps (formed by ancient drowned reefs) over volcanic basalt bases. The limited knowledge on the fauna of these seamounts strongly suggests that it qualitatively differs from that found in the nearby Elizabeth and Middleton Reefs, warranting conservation consideration. North-south ecological connections are influenced by south flowing surface currents passing along the Chesterfield ridge seamounts into the Coral Sea and by the northward subtropical front moving along the sea floor along the Lord Howe ridge. These different systems of connectivity interacting in the Tasman Basin account for the unique biota of the region (Lörz *et al.* 2012). No protection is given in the proposed plan to protect connectivity between the Gifford and Lord Howe Marine Parks.

#### 6. Jervis Marine Park

We note that a large proportion of the Jervis Marine Park has been zoned as IUCN category IV, which is an improvement over earlier plans in which the entire reserve had only the lowest level of protection (IUCN Category VI) which would have permitted a broader range of fishing methods, aquaculture, mining and petroleum exploration and development. This reserve is separated from the NSW Jervis Bay Marine Reserve by a narrow margin; the principles of reserve design dictate that it would be logical that they should be made contiguous.

I look forward to the opportunity to work with the Australian Government, the Director of National Parks, and the Department of Environment and Energy in resolving these issues.

Yours faithfully

Dr Rebecca Johnson  
Director  
Australian Museum Research Institute

On behalf of:  
Dr Shane T. Ahyong  
Dr Donald J. Colgan  
Dr Pat A. Hutchings

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