Biodiversity Council

Submission on the proposed South Coast Marine Park Indicative Management Plan

14 June 2024

About The Biodiversity Council

The Biodiversity Council brings together leading experts including Indigenous knowledge holders to promote evidence-based solutions to Australia's biodiversity crisis. The Council was founded by 11 universities with the support of Australian philanthropists.

Introduction

The Biodiversity Council welcomes the opportunity to provide feedback on the interim South Coast Marine Park Management Plan.

Our understanding

The interim management plans have been developed to address a gap in Western Australia's marine biodiversity conservation strategy, with inadequate protection currently provided to the ecosystems of Western Australia's South Coast. The initiative to develop the South Coast Marine Park is a critical component of the State's commitment to a National Representative System of Marine Protected Areas, providing protection for a critical stretch of the Great Southern Reef.

The proposed marine parks also represent important steps towards Australia's commitments under the Convention on Biological Diversity Convention's Kunming-Montreal Global Biodiversity Framework to have 30% of global land and oceans in effective protected areas by 2030, in representative and well-managed areas, generally referred to as the '30x30' commitment.

The interim plans are for the creation of four marine parks on the South Coast from Bremer Bay to the South Australian border, with the marine parks named:

- Mamang Maambakoort Marine Park
- Wudjari Marine Park
- Western Bight Marine Park, and
- Mirning Marine Park

These four parks are to be jointly managed by the Western Australian State Government through the Department of Biodiversity Conservation with Traditional Owners of the Sea Country.

The design principles behind the establishment of these marine parks are that they should be Comprehensive, Adequate and Representative (CAR). These principles have been endorsed by the Australian Government and reflect best practice. The goal of a CAR network is to build protected area systems which embrace a full range of viable representatives of all biodiversity, taking into consideration biodiversity composition, structure and function and evolutionary processes (Althaus et al. 2017). In practice, this approach means the inclusion of 'as many species as possible' in reserves (Beger and Possingham 2008). Ensuring that marine reserve systems are effective for biodiversity conservation from the outset is critical as ad-hoc planning approaches can compromise long-run objectives (Stewart et al. 2003).

The Biodiversity Council has some key concerns about the design and management of the proposed marine parks and makes recommendations to address each of them. These are described below.

Key concerns

The area of sanctuary zones is inadequate for biodiversity conservation and societal benefits

Across the four marine parks, 25% of the area is in highly protected sanctuary zones. This falls short of international scientific evidence for the need to fully protect at minimum 30% of marine areas for biodiversity conservation (Sala and Giakoumi 2018; Dinerstein et al. 2019; O'Leary et al. 2016; Díaz et al. 2019). This includes recommendations from the recent Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) report, involving scientists from more than 130 governments, underpinned the scientific argument for full protection of 30% of our global oceans (Díaz et al. 2019).

Twenty-five per cent also falls short of community expectations of the Western Australian public for biodiversity conservation in the South Coast Marine Park. Surveys in 2023 by the University of Western Australia showed that the Western Australian public on average thought 49% of the South Coast Marine Park should be fully protected in sanctuary zones (Spencer-Cotton et al. 2023). Similar research has shown that recreational fishers in established marine parks are highly supportive of the sanctuary zones within them, including in parks with high levels of sanctuary zones protection (i.e. >30%) (Navarro et al. 2018). This is reflective of strong ocean values amongst the Western Australian public and recreational fishers resulting in demands for high levels of protection.

The placement of sanctuary zones across the four parks is biased towards protecting areas farthest away from population centres. The remote Western Bight marine park has 46% of it's area in sanctuary zones, whilst Wudjari marine park which is closest to population centre of Esperance has the lowest level of protection at 20% in sanctuary zones.

The relatively low levels of protection in the Wudjari marine park in particular (20%) as well as the Mirning (23%) and Mamang Maambakoort (28%) suggest a lack of Adequacy of protection of the ecosystems in these areas.

The sanctuary zones of the proposed marine parks have a median size of approximately 60 km^2. International research on the effectiveness of sanctuary zones has demonstrated significantly greater conservation benefits for sanctuary zones more than 100 km^2 (Edgar et al. 2014). At present just 11 of the 32 proposed sanctuary zones are greater than 100 km^2. Larger sanctuary zones ensure that fish with larger home-ranges and ecosystem processes operating at larger scales can be protected.

Recommendation 1: The Biodiversity Council recommends that the Western Australian State Government increase the area in fully protected sanctuary zones to at minimum 30% for each of the four marine parks.

Recommendation 2: The Biodiversity Council recommends that the Western Australian State Government increase the size of individual sanctuary zones in the marine parks to ensure that at least two-thirds of the sanctuary zones exceed 100 km^2.

Protection must reach the beach in sanctuary zones for conservation and community benefits

The indicative management plans leave open the possibility for a sanctuary zone's boundaries to be offset from the mainland high water mark by 200 metres to allow commercial and recreational fishing. Allowing commercial and recreational fishing along the shore boundary of sanctuary zones compromises the conservation potential of these areas by increasing the boundary length of the reserve across which fish can travel and be caught. International studies on the effectiveness of marine sanctuaries demonstrates that minimising the movement of exploited fish from protected areas into unprotected areas fish boundary movement into fished areas is critical for conservation benefits for fish (Edgar et al. 2014).

Having sanctuary zones reach the coastline is also critical for realising the tourism and community engagement opportunities that sanctuary zones can offer. A 2023 survey of the Western Australian public demonstrated strong public support for sanctuary zones to reach the beach (Spencer-Cotton et al. 2023). Through presenting a range of scenarios for the South Coast Marine Park, the study demonstrated that the public's preference for shore access was a substantial component of the appeal of the sanctuary network whilst concerns about impacts on recreational and commercial fishing were not important in their preferences for all but the most restrictive impacts on commercial fishers.

Sanctuary zones that reach the beach have been demonstrated to provide substantial economic, tourism and educational benefits. The sanctuary zones of Ningaloo Marine Park that reach the shore (e.g. Turquoise Bay in the Mandu Sanctuary Zone) provide outstanding opportunities for the public to snorkel and experience fish populations in large densities unconstrained by nets and lines. In South Australia, sanctuary zones that reach the beach have been used explicitly for marine education through the Experiencing Marine Sanctuaries program which includes snorkel experiences for school groups. Being able to experience the benefits of marine sanctuaries through coastal swimming and snorkelling is potentially critical for building ocean awareness and literacy amongst the Australian public (Nursey-Bray et al. 2024).

Recommendation 3: The Biodiversity Council recommends that the Western Australian State Government ensure that sanctuary zones reach the beach and do not allow fishing along the shore-ward margin.

The current plans do not protect the adjacent beach, dune and coastal systems that interact with nearshore environments

Beaches and coastal ecosystems provide vital habitat for shore-feeding and shore-nesting birds such as plovers, terns, and oystercatchers. Heavy recreational presence on shorelines and in particular permitting vehicles to drive along beaches can have substantial impacts on

populations of breeding birds (Hardiman and Burgin 2010; Schlacher et al. 2013). Ideally, some areas of beach should be recognised as habitat and protected from dogs, vehicles, and foot traffic-in a similar way to how areas underneath the water are protected. Seasonal closures of sections of beach during avian breeding seasons would also support this conservation objective.

Recommendation 4: The Biodiversity Council recommends that the management plans for each marine park include a clear objective to protect shore-feeding and shore-nesting birds with effective actions to address threats to these species, including protection from recreational beach use.

It is unclear how well the marine parks protect different aspects of biodiversity

The indicative management plans fail to identify how the proposed zoning arrangement achieves adequacy of protection across a range of mappable biodiversity constructs (e.g., habitat, fish communities, depth) within each marine park. This makes alignment of the indicative management plans with the CAR principles, and ultimately the biodiversity conservation value of the plans, difficult to assess.

Recommendation 5: The Biodiversity Council recommends that the management plans for each marine park include reporting of the representation of mappable biodiversity constructs (e.g., habitats, fish communities, depth) and ensure that at least 30% of each mappable biodiversity area is highly protected in sanctuary zones.

References:

Althaus, F., Williams, A., Alderslade, P., & Schlacher, T. A. (2017). Conservation of marine biodiversity on a very large deep continental margin: how representative is a very large offshore reserve network for deep-water octocorals? *Diversity & Distributions*, *23*(1), 90–103.

Beger, M., & Possingham, H. P. (2008). Environmental factors that influence the distribution of coral reef fishes: modeling occurrence data for broad-scale conservation and management. *Marine Ecology Progress Series*, *361*, 1–13.

Díaz, S. M., Settele, J., Brondízio, E., Ngo, H., Guèze, M., Agard, J., Arneth, A., Balvanera, P., Brauman, K., & Butchart, S. (2019). *The global assessment report on biodiversity and ecosystem services: Summary for policy makers*. Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services.

Dinerstein, E., Vynne, C., Sala, E., Joshi, A. R., Fernando, S., Lovejoy, T. E., Mayorga, J., Olson, D., Asner, G. P., Baillie, J. E. M., Burgess, N. D., Burkart, K., Noss, R. F., Zhang, Y. P., Baccini, A., Birch, T., Hahn, N., Joppa, L. N., & Wikramanayake, E. (2019). A Global Deal For Nature: Guiding principles, milestones, and targets. *Science Advances*, *5*(4),

eaaw2869.

Edgar, G. J., Stuart-Smith, R. D., Willis, T. J., Kininmonth, S., Baker, S. C., Banks, S., Barrett, N. S., Becerro, M. A., Bernard, A. T. F., Berkhout, J., Buxton, C. D., Campbell, S. J., Cooper, A. T., Davey, M., Edgar, S. C., Försterra, G., Galván, D. E., Irigoyen, A. J., Kushner, D. J., … Thomson, R. J. (2014). Global conservation outcomes depend on marine protected areas with five key features. *Nature*, *506*(7487), 216–220.

Hardiman, N., & Burgin, S. (2010). Recreational impacts on the fauna of Australian coastal marine ecosystems. *Journal of Environmental Management*, *91*(11), 2096–2108.

Navarro, M., Kragt, M. E., Hailu, A., & Langlois, T. J. (2018). Recreational fishers' support for no-take marine reserves is high and increases with reserve age. *Marine Policy*, *96*, 44–52.

Nursey-Bray, M., Wootton, N., Holland, S., Page, K., & Gillanders, B. M. (2024). Site unseen: Engaging communities on marine protected areas. *Biological Conservation*, *292*, 110515.

O'Leary, B. C., Winther-Janson, M., Bainbridge, J. M., Aitken, J., Hawkins, J. P., & Roberts, C. M. (2016). Effective coverage targets for ocean protection. *Conservation Letters*, *9*(6), 398–404.

Sala, E., & Giakoumi, S. (2018). No-take marine reserves are the most effective protected areas in the ocean. *ICES Journal of Marine Science: Journal Du Conseil*. https://academic.oup.com/icesjms/article-abstract/75/3/1166/4098821

Schlacher, T. A., Nielsen, T., & Weston, M. A. (2013). Human recreation alters behaviour profiles of non-breeding birds on open-coast sandy shores. *Estuarine, Coastal and Shelf Science*, *118*, 31–42.

Spencer-Cotton, A., Navarro, M., & Hamre, N. (2023). *Working Paper: Public preferences for marine park design in Western Australia. Working Paper 2303, Agricultural and Resource Economics*. The University of Western Australia. https://ageconsearch.umn.edu/record/339006/

Stewart, R. R., Noyce, T., & Possingham, H. P. (2003). Opportunity cost of ad hoc marine reserve design decisions: an example from South Australia. *Marine Ecology Progress Series*, *253*, 25–38.