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RESPONSE TO THE DRAFT CORNER INLET FISHERY MANAGEMENT PLAN

On behalf of The Nature Conservancy Australia (TNC), I would like to thank you for the opportunity to provide feedback on the draft Corner Inlet Fishery Management Plan. TNC welcome the development of the first fishery management plan for the Corner Inlet fishery. Comments regarding specific sections of the management plan are provided below, specifically in relation to the benefit of including shellfish reef restoration as a priority for improving fish stocks and the overall ecological value of Corner Inlet in line with the objectives of the management plan and principles of ecologically sustainable development.

Section 2.3: Catch History in the Fishery

While the focus of Section 2.3 is on modern commercial fishing catch and effort since 1978 and relates to records held by the Victorian Fisheries Authority, it is recommended that this historical background section also acknowledges the Australian flat oyster (*Ostrea angasi*) dredge fishery that operated in Corner Inlet in the mid 1800's. This fishery was actually more lucrative than fishing at the time (Bowen 2012). The oyster fishery ran intensely from 1842 to 1854, so much so that within this time natural oyster beds were completely removed (Bowen 2012).

Section 2.4: Environmental Significance and Marine Protected Area

Section 2.4.1 states that based on BMT WBM (2011) "The Corner Inlet Ramsar site...is largely in a near natural condition". However, Ford and Hamer (2016) conclude that the tidal channels and shallow banks of Corner Inlet and Nooramunga historically supported large beds of Australian flat oysters, which co-existed with seagrass, with the presumed past distribution covering the entire enclosed waterway and some sandy stretches on the open coast (refer to Figure 1). As such, the subtidal environment of the Ramsar site has been substantially altered since European settlement and is not considered a 'near natural' state. It is recommended that the history of shellfish reefs is acknowledged, despite the conclusion of BMT WBM (2011), to accurately depict the history of the now functionally extinct shellfish reef ecosystems of Corner Inlet. In Corner Inlet today, Australian flat oysters occur as isolated clumps or individuals and no longer form a continuous reef matrix.

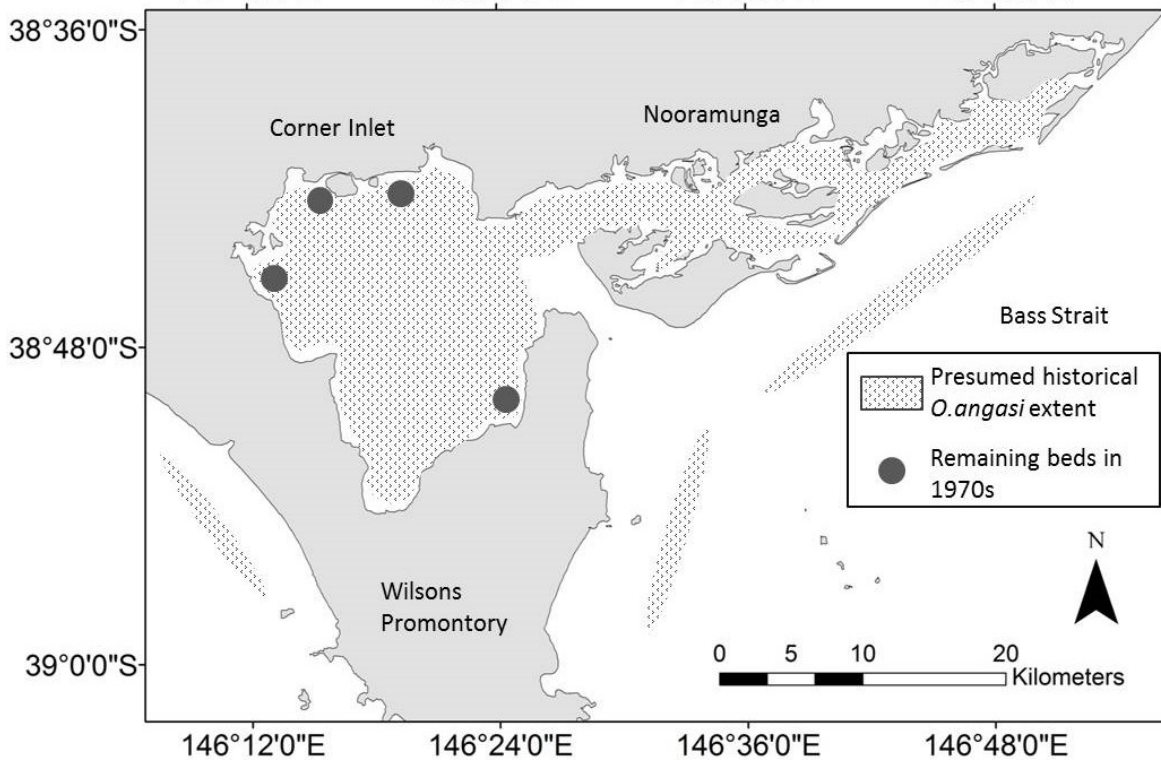


Figure 1: Approximate distribution of Australian flat oysters in Corner Inlet and Nooramunga at European Arrival from Ford and Hamer (2016)

Objective 2: Maintain the Ecological Integrity of the Fishery Ecosystem (Section 4: Objectives, Strategies and Actions)

Strategy 6 of this objective is to maintain healthy fisheries habitat and support seagrass restoration. It is noted that Section 2.4.2 describes The Corner Inlet Broadleaf Restoration Project which involves Landcare, commercial fishers, recreational anglers and other volunteers who have been trialling restoration of seagrass in the inlet, planting out seeds of broad leaf seagrass (*Posidonia australis*) to restore seagrass beds. The benefits of seagrass habitat is also noted, which includes providing habitat for important fish species, improving water quality and clarity, biodiversity, natural amenity and promoting sediment stability and biological productivity. It is noted that Australian flat oyster reefs would also bring many of the same benefits including improving water quality, increasing habitat for fish and other marine life, boosting fish stocks, providing shoreline protection and shellfish reefs also provide a range of economic, tourism and community engagement opportunities. Shellfish reefs may also provide positive effects for existing and restored seagrass and coastal saltmarsh habitat by improving water quality and stabilising sediments which in turn could increase the carbon storage capacity and extent of seagrass meadows and saltmarsh habitat in the inlet. To support the ongoing seagrass restoration and to further support Objective 2 of the management plan, TNC would recommend including shellfish reef restoration works in addition to seagrass restoration works in Strategy 6, with actions and performance measures/targets to be identified Table 3 of the management plan as per the table below.

Strategy	Actions	Performance measures/targets
6. Maintain healthy fisheries habitat and support seagrass restoration.	Support seagrass and shellfish reef restoration projects in Corner Inlet where possible	<ul style="list-style-type: none"> Identify potential partners and funding opportunities to support shellfish reef restoration projects

Section 6.2.2 Future Research Priorities

Given the potential benefits to recreational and commercial fisheries from undertaking shellfish reef restoration in Corner Inlet, TNC would recommend including the following research priority to Table 6:

- Conduct shellfish reef restoration suitability modelling to identify potentially suitable sites for shellfish reef restoration.

Restoration suitability modelling is a process used to assist in site selection for shellfish reef restoration, while limiting potential negative impacts to existing habitats and minimising user conflicts. Despite being widespread in

Corner Inlet historically, due to modified ecological and environmental conditions, locations where these reefs once occurred may no longer be suitable for oyster growth and survival. Therefore, the success of a restoration project is largely contingent on having identified a suitable site for restoration to take place. As such, conducting restoration suitability modelling would be one of the first important steps in undertaking shellfish reef restoration in Corner Inlet.

Shellfish Reef Restoration and the Principles of Ecologically Sustainable Development

Given the potential benefits of shellfish reef restoration (e.g. improving fish habitat, boosting fish stocks, improving water quality, coastal protection, increasing carbon storage of wetland systems), this would further support the principles of ecologically sustainable development identified in Section 3.1.1 of the management plan. As such, the inclusion and identification of shellfish reef restoration works in the management plan will support the principles and objectives of the plan.

Yours Sincerely



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References

BMT WBM .2011. Ecological Character Description of the Corner Inlet Ramsar Site – Final Report. Report prepared for the Australian Government Department of Sustainability, Environment, Water, Population and Communities, Canberra, ACT.

Bowen, A .M. 2012. Archaeology of the Chinese fishing industry in colonial Victoria. Studies in Australian Historical Archaeology. Australasian Society for Historical Archaeology, Sydney, xiv, 177 pp.

Chowdhury, M. S. N, Walles, B., Sharifuzzaman, SM, Hossain, M. S., Ysebaert, T. and Small, A. C. 2019. Oyster breakwater reefs promote adjacent mudflat stability and saltmarsh growth in a monsoon dominated subtropical coast. *Scientific Reports* 9: 8549.

Ford, J and Hamer, P. 2016. The forgotten shellfish reefs of coastal Victoria: documenting the loss of a marine ecosystem over 200 years since European settlement. *The Royal Society of Victoria* 128: 87-105.

Gillies, C .L., Mcleod, I. M., Alleway, H. K., Cook, P., Crawford, C., Creighton, C., Diggles, B., Ford, J., Hamer, P., Heller-Wagner, G., Lebrault, E., Le Port., A., Russell, K., Sheaves, M. and Warnock. 2018. Australian shellfish ecosystems: Past distribution, current status and future direction. *PloS one*. 13(2).

Grabowski, J. H. and Peterson, C. H. 2007. Restoring oyster reefs to recover ecosystem services. *Ecosystem engineers: plants to protists* 4: 281-298.

Sharma, S., Goff, J., Moody, R. M., Byron, D., Heck Jr., K. L., Powers, S. P., Ferraro, C. and Cebrian, J. 2016. Do restored oyster reefs benefit seagrass? An experimental study in the Northern Gulf of Mexico. *Restoration Ecology* 24:306-313.