Biodiversity Council

Submission to NOPSEMA regarding the TGS OTWAY BASIN 3D MULTI-CLIENT MARINE SEISMIC SURVEY: Environment Plan

11 August 2023

The Biodiversity Council welcomes the opportunity to provide feedback to NOPSEMA on the TGS Otway Basin 3D Multi Client Seismic Survey – Environment Plan.

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.

Key points of concern:

1. ***The EP misrepresents the spatial distribution of the Bonney Upwelling and its biological significance.***

The Bonney Upwelling is a phenomenon where nutrient rich sub-surface waters come to the surface and begin to interact with phytoplankton and sunlight and subsequently high density of zooplankton, including krill, which underpins the ecology of the system. On page 91 of the EP, TGS uses a map of the Bonney Upwelling that shows that it does not overlap with the OA. However, this is a misrepresentation of the influence of the upwelling as it simply shows where the nutrient dense water first rises from the sub-surface. What is completely misrepresented by the applicants is that the upwelling of nutrient dense water is then subject to interactions with surface currents and winds which disperse the influence of these waters widely. It is more appropriate to use satellite imagery of chlorophyl as per Thompson et al. 2020 to show the wide-ranging influence of the bonnie upwelling. This mapping clearly shows significant overlap with the OA, and, given the significance of the upwelling on the productivity of the region we ask that NOPSEMA reject the EP on the basis that it is inaccurately represented and as we do not fully understand the impact of seismic surveys on the upwelling's productivity.

2. ***Seismic survey kills Zooplankton and we do not know what the significance of the kills are at a population level, an unacceptable risk to the entire region's ecology.***

The high significance of the Bonney Upwelling is due to the interaction between nutrient dense waters and sunlight and the subsequent explosion of Phytoplankton. It is for this reason

that the spatial extent of the Bonney Welling can be mapped using satellite imagery of Chlorophyll. Phytoplankton in turn feed Zooplankton which form the basis of the food web including the diets of the Southern Right Whale and Pygmy Blue Whale which is listed as Endangered under the EPBC 1999.

It has been shown that Seismic surveys can kill krill out to 1.2km (McCauley et al. 2017). To date there are no ***published peer reviewed*** models of the population level impacts of zooplankton kills as a result of seismic blasting. Given the extensive nature of the 3D seismic surveys proposed here by TGS in the EP it is reasonable to assume that impacts are likely to be significant and have impact on the regions' entire food chain. The precautionary principle must be adopted by NOPSEMA here until such a time that we can quantify, and justify, the population level impacts of the proposed activities on zooplankton and the flown on effects on the region's ecology.

3. Unacceptable impacts on cetaceans

As outlined in the EP there is a significant presence of EPBC listed threatened baleen whales known to occur in the OA and EMPB region, this includes blue, pygmy blue, sei, fin and southern right whales. A number of other baleen whales, listed as migratory species, also occur in the OA, including humpback, Antarctic minke.

The Blue Whale Conservation Management Plan (BWCMP) is the official EPBC recovery plan for the species and has regulatory prescriptions that apply to operations that may impact in Australian waters. The Biodiversity Council notes that Action Area A2 of the BWCMP requires the application of EPBC Policy Statement 2.1 (Action 4) along with requirements that 'Anthropogenic noise in biologically important areas will be managed such that any blue whale continues to utilise the area without injury and is not displaced from a foraging area'.

Blue whales utillise this area on a year-round basis and their foraging behaviour is linked to the timing of the Bonney Upwelling. Noting that the Bonney Upwelling is variable both temporally and spatially and that there are significant concerns in relation to the representation of the Bonney Upwelling in the EP there is a clear unacceptable risk of the action displacing foraging activity of blue whales in the area.

The efficacy of the proposed 16 km exclusion zone around blue whale BIAs is insufficient to manage the risk to the species, applying only during the heightened feeding period. Given the

sustained presence of blue whales in the region through the year, seismic exploration within this ecosystem presents a considerable and unacceptable risk.

Mandatory considerations under the EPBC Act require the minister to not make a decision to approve an action that is inconsistent with a recovery plan. These requirements are given effect to in the part 10 strategic assessment approval for NOPSEMA which enable it to assess and approve impacts regulated by the EPBC Act. The Biodiversity Council is of the view that the current proposal is inconsistent with the listed recovery plan for the blue whale due to the potential for the action to injure or displace blue whales from a known and highly-important foraging area. Our view is any approval of the action of this nature would fail to satisfy the precautionary principle under the EPBC Act.

It is likely that impacts on other species of baleen whale species that utilise the Bonney Upwelling will be similar to those identified for blue whales. The OA also overlaps with the core range of the southern right whale and the region is known to contain sei and fin whales. More detailed information is needed to better understand the utilisation of the area by these species and the impacts that 3D seismic testing may have on these species. The precautionary principle dictates that 'lack of full scientific certainty should not be used as a reason for postponing a measure to prevent degradation of the environment where there are threats of serious or irreversible environmental damage'. There is a major gap in the information base for determining impacts on several baleen whale species, and the action should not proceed until the full scale of these impacts and the nature of utilisation of the habitat by these species is better understood.

The impacts of seismic testing on fish and eels are poorly understood

There are a number of EPBC listed fish species that occur in the OA and EMBA, including white sharks and grey nurse sharks. The OA will intersect with four white shark BIAs and the EMBA with key breeding areas. There is a heavy reliance on Meekan et al (2021) to justify the limited impacts on shraks and fish within the EP. However, the situational differences between the actions outlined in the EP and this study are significant. Of note the Meekan et al (2021) paper evaluated impacts in tropical environment at a depth of 80m, whereas the OA occurs in temperate environments and will have impacts to depths of 150m.

The EMBA will also intersect with key grey nurse shark habitats. There is poor understanding of the impact of seismic surveys on these species and other species of fish. Despite this lack of scientific evidence, the EP claims that the risk to these species is acceptable. The Biodiversity Council is of the view the precautionary principle should apply and that additional studies are needed to better understand the full suite of impacts of seismic testing on bony fish species.

We also note with concern that the EP does not address impacts on short fin eel nor the significance of short fin eel migration from the ocean through to the Budj Bim World Heritage Area. The species travels into the ocean for single spawning event near the coral sea with transparent larvae and glass eels being carried south on currents to return to the freshwater rivers and tributaries to mature. Given the importance of the species to the outstanding universal value of the world heritage area the Biodiversity Council is of the view that the potential impacts on the migration of the short finned eel should be accounted for in the EP.

4. ***Keeray wooroong and Gunditjmara and people have not been adequality consulted on the EP.***

The Biodiversity Council is committed to elevating the voices, rights and interests of Traditional Custodians on issues that impact on their Country, Sea Country and songlines. At a minimum, the Biodiversity Council expects NOPSEMA to ensure that TGS is compliant with United Nations Declaration on the Rights of Indigenous Peoples, to which Australia is a signatory. Specifically, Article 25 "*Indigenous peoples have the right to maintain and strengthen their distinctive spiritual relationship with their traditionally owned or otherwise occupied and used lands, territories, waters and coastal seas and other resources and to uphold their responsibilities to future generations in this regard* and Article 32, Item 2 "*governments shall consult and cooperate in good faith with the Indigenous peoples concerned through their own representative institutions in order to obtain their free and informed consent prior to the approval of any project affecting their lands or territories and other resources particularly in connection with the development, utilization or exploitation of mineral, water or other resources"* are relevant.

The Southern Ocean Protection Embassy Collective (SOPEC) was founded by Keerray Wooroong and Gunditjmara people, the Traditional Owners of large parts of the Operating

Area (OA) relevant to this Environment Plan, to protect Southern Ocean Sea Country and our whale Ancestors and Kin. Koontapool, Southern Right Whale, and Wuuloc, the Pygmy Blue Whale, are sacred to the Gunditjmara and hold significance in our cultural practices. Both are found in the Bonney Upwelling and distributions overlap with the OA (i.e. Moller et al 2020).

It is the understanding of the Biodiversity Council that during the public consultation process, that TGS/SLB failed to conduct any consultation with SOPEC that provided comprehensive or comprehensible information for their community. SOPEC were not provided with information that provided clarity on what mitigation measures would be o ensure no seismic blasting would take place during the noted times that Koontapool or Wuuloc are known in the area. SOPEC was not provided the opportunity to engage in consultation in a way that allowed culturally safe sharing of relevant information on the importance of these areas of Sea Country, and the need to halt any plans for seismic activity to protect culture, kin and the life of these areas. NOPSEMA must refuse the EP based on these failures in consultation in a culturally safe and appropriate way.

Based on the above points the Biodiversity Council urges NOPSEMA to reject TGS's Environment Plan (EP)

Reference List

McCauley, R. D., Day, R. D., Swadling, K. M., Fitzgibbon, Q. P., Watson, R. A., Semmens, J. M. (2017). Widely used marine seismic survey air gun operations negatively impact zooplankton. Nature Ecology and Evolution, 1(7). doi:10.1038/s41559-017-0195

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Thompson P., Antoine D., and King D. 2020. Spatial and seasonal trends in Chlorophyll a. IMOS Report, CSIRO.

Meekan MG, Speed CW, McCauley RD, Fisher R, Birt MJ, Currey-Randall LM, Semmens JM, Newman SJ, Cure K, Stowar M, Vaughan B & Parsons MJG (2021). A large-scale experiment finds no evidence that a seismic survey impacts a demersal fish fauna. Proceedings of the National Academy of Sciences 118(30):e2100869118.