



VICTORIAN  
**NATIONAL PARKS**  
ASSOCIATION  
*Be part of nature*



Eastern Blue Groper (*Achoerodus viridis*), Barwon Bluff, Wilsons Promontory, Bunurong and Gunaikurnai Country. KADE MILLS

**SUBMISSION TO**

# *TGS Environmental Plan*

TGS Otway Basin 3D Multi-Client Marine  
Seismic Survey Environmental Plan

**Victorian National Parks Association**

Level 3, 60 Leicester Street, Carlton VIC 3025 • 03 9341 6500 • vnpa@vnpa.org.au • vnpa.org.au

ABN 34 217 717 593

# TGS Otway Basin 3D Multi-Client Marine Seismic Survey ('seismic survey') Environmental Plan



## Submission by the Victorian National parks Association

August 2023

Thank you for the opportunity to comment on the TGS Otway Basin 3D Multi-Client Marine Seismic Survey ('seismic survey') Environmental Plan.

The Victorian National Parks Association (VNPA) is a 'relevant person' under regulation 11A(d) of the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth), as it is an organisation whose functions, interests and activities may be affected by the seismic survey to be carried out under the Environmental Plan. Specifically, the functions, interests and activities of the VNPA involve supporting the participation of our members and supporters in snorkelling and ocean connection activities across the Victorian coastline, within in the Environment that May Be Affected (EMBA).

The Victorian National Parks Association (VNPA) is a leading community conservation organisation and has been advocating for the protection of Victoria's biodiversity for over 70 years.

For the reasons outlined below, VNPA considers that the Environmental Plan does not meet the criteria for NOPSEMA's acceptance, set out under regulation 10A of the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* and should, therefore, be refused.

The Environmental Plan is not consistent with the objectives, principles and requirements outlined in both the Environment Protection and Biodiversity Conservation Act 1999.

We base this on the unacceptable risks and impacts posed on the marine environment. A summary of these include:

- Lacking sufficient research to back up claims by the proponent that there will be a low risk of impact to marine species such as plankton
- Lacking sufficient mitigation measures on threatened species, specifically whales
- Seismic testing is likely to have an enormous environmental footprint that spans across the state of Victoria, Tasmania, and parts of South Australia and NSW. Many impacts on areas of high conservation value have not been addressed.
- Marine biodiversity values in the Federal Marine Parks that overlap the operating area have not been acknowledged or considered in enough detail.

We continue with more detail.

## Identification and evaluation of environmental impacts and environmental risks described in the environmental plan.

### **Impact of seismic testing on marine life far too great**

Seismic airguns are the second highest contributor of human-caused underwater noise in total energy output per year, following only nuclear and other explosions. They have also been termed a 'serious marine environmental pollutant.'<sup>i</sup>

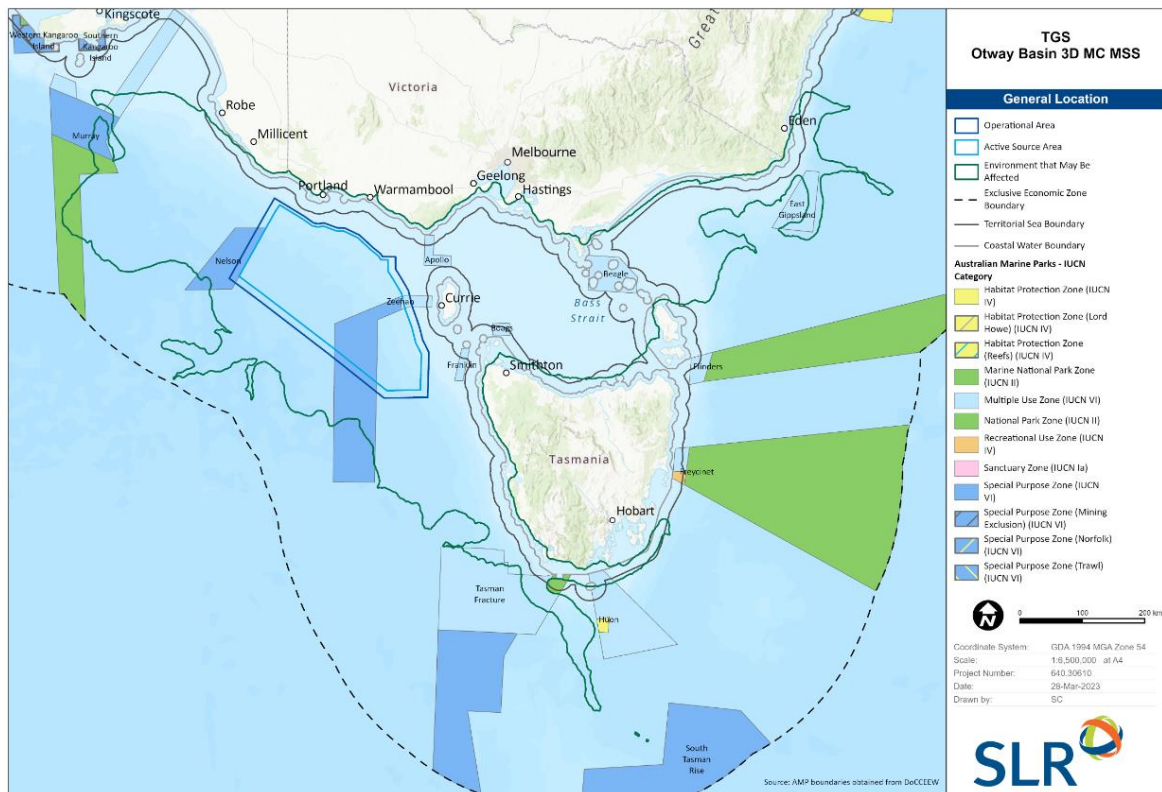
Seismic airguns have been shown to have adverse impact on marine life. While we still do not understand the severity of the damage they can cause due to lack of science, what we do know includes:

- Seismic air guns extensively damaged fish ears at distances of 500 m to several kilometres from seismic surveys.<sup>ii</sup>
- Zooplankton, which are the base of marine ecosystems (including for baleen whales) are killed within 1.2km away.<sup>iii</sup>
- Marine mammals experience hearing impairment (temporary or permanent), physiological changes such as stress responses, indirectly by impacting their prey, behavioural changes such as avoidance responses, displacement, or a change in communication<sup>iv</sup>
- Rock lobsters sense of coordination is affected, with research showing they do not recover from this loss of coordination if exposed directly to an air gun array. Furthermore, the intervals between moulting increased in animals exposed to seismic signals, going from between 16 and 18 days to between 23 and 30 days, which may result in slower overall growth rates. <sup>v</sup>

### **Inadequate assessment of the environment that may be affected (EMBA)**

The EP acknowledges that the impact of this seismic testing is likely to have an enormous environmental footprint that spans across the state of Victoria, Tasmania, and parts of South Australia and NSW. The map below from NOPSEMA's website attests to this in the areas labelled '*The environment that might be affected*'.

This incredibly large impact area alone should be an outright rejection of this project. The impacts to this wider area have not been considered enough. We do not believe that the impacts on the marine environment have been adequately addressed within this EP.



## Identification and description of environmental features in the environment plan

### **Impact on state conservation areas (Victoria) not adequately considered**

Victoria has 24 marine national parks and sanctuaries – important areas for the conservation of marine biodiversity. Five of these are directly onshore from the proposed operational area (OA), and the remaining 19 are within the wider EMBA.

The risk of oil spills and other marine pollution may reach the entire Victorian coastline, most of Tasmania and parts of South Australia and NSW. Chemical dispersants utilised by industry to clean up oil spills, which by nature are chemicals, cannot be relied on as a fix, especially given much of this coastline is inaccessible to enable amelioration of the damage within the timeframe required.

While the EP considered the risk from a hydrocarbon spill, it lacked any assessment from the impact of underwater noise or other impacts from operations to marine life which live in these areas. Given the research suggests that seismic impacts can be felt hundreds of kilometres away<sup>vi</sup>, the state marine national parks and sanctuaries are well within the impact zone and the wider impacts should be addressed.

Key critical environmental impacts and risks have not been identified and reduced appropriately within the EP, and we do not believe this EP warrant seismic testing in this area to proceed.

## **Impact on Federal Marine parks**

The large areas of the OA overlaps with the Federal Zeehan & Nelson Marine Parks. We did not see sufficient recognition of the value or ecological importance of these marine parks or the science to back up claims.

The EP states that *'Due to the temporary and localised nature of the effects, biodiversity will be protected and maintained in the long-term and the functioning and integrity of these benthic communities will be maintained.'*

There was not sufficient evidence to back this up. This is a false claim. There is not yet the science to prove this. Research that is already out there explicitly states that seismic air guns can impact ecosystem wide and can have longer term impacts.

The EP states that *Key sensitivities within the West Tasmania Canyon KEF are primarily associated with the benthic environment and therefore will not be impacted by the physical presence of the survey vessels and towed equipment.*

This statement is inapproachably assuming that there will be no impacts on benthic environments, which it cannot back up with evidence.

The South-east Commonwealth Marine Reserves Network Management Plan specifically recognises seismic testing as a key pressure on the marine parks - noise pollution associated with shipping, other vessels, seismic survey, offshore mining operations and offshore construction.

## **Management of environmental impacts and environmental risks described in the environment plan.**

### **Lack of effective controls to reduce harm to threatened species (whales)**

The OA overlaps with many important aggregating areas (BIA's) for whales, many listed as threatened species under state and federal law, including Southern Right Whales, Blue Whales, and Humpback Whales.

Marine mammals can be impacted by the intense, broadband pulses produced by seismic airguns through hearing impairment (temporary or permanent), physiological changes such as stress responses, indirectly by impacting their prey, behavioural alterations such as avoidance responses, displacement, or a change in vocalizations, or through masking. Humpback and fin whales appear to communicate over distances of at least tens of kilometres and therefore reducing this distance would compromise their ability to communicate.<sup>vii</sup>

Studies have shown specifically that during seismic air guns there have been fewer animals feeding and are a probable cause of whale strandings and deaths as well, especially in beaked whales. A stranding of two individuals was tied very closely in space and time to a seismic survey in the Gulf of California for example.<sup>viii</sup>

The control measures proposed in the EP for a marine fauna observer (MFO) are not an effective control on its own to reduce harm to whales, when the effectiveness of this role is highly limited. Observers operate at times of poor visibility, rough seas and other tough environmental conditions

which make whale spotting difficult at the easiest of times. They are not a reliable control to prevent or reduce the impact on these threatened species to the standard that needs to be applied.

As sound travels much further underwater than on land (hundreds of kilometres) the impact on whales is well beyond the line of sight that an observer would spot a whale.

The EP also seemed to downplay the impact on dolphins, suggesting that dolphins are more likely to avoid collisions by moving away than whales. A study in the UK found that Atlantic spotted dolphins showed stronger responses to seismic airgun exposure than humpback or sperm whales.<sup>ix</sup>

## **Incorrect statements on the impact of plankton and wider ecosystems**

The EP assesses acoustic disturbance impacts on plankton/productivity to have at worst a low risk. We find this hard to believe when there is science that says the opposite.

Experimental air gun signal exposure has been shown to decrease zooplankton abundance when compared with controls, causing a two- to threefold increase in dead adult and larval zooplankton. Krill can be impacted 1.2km out.<sup>x</sup>

Given Phytoplankton and zooplankton underpin ocean productivity, any significant impacts on plankton have enormous implications for ocean ecosystem structure and health. The EP's claims for *'temporary and localised nature of the effects, biodiversity will be protected and maintained in the long-term and the functioning and integrity of these benthic communities will be maintained.'* - is false.<sup>xi</sup>

The research also states that *'There is a significant and unacknowledged potential for ocean ecosystem function and productivity to be negatively impacted by present seismic technology.'*

For the reasons set out above, we do not believe that the Environmental Plan complies with relevant law and regulations and therefore should not be accepted. To summarise our view, the EP is lacking in sufficient detail on the impacts of seismic blasting on key threatened species in the OA and there is not sufficient controls put in place to reduce harm to threatened species, marine park values and other high conservation protected areas. Furthermore, have there been any assessment in any detail on important protected areas within the EMBA. Any approval would be inconsistent with national environmental law.

Thank you for the opportunity to comment.

---

<sup>i</sup> Weilgart, L. (2013). "A review of the impacts of seismic airgun surveys on marine life." Submitted to the CBD Expert Workshop on Underwater Noise and its Impacts on Marine and Coastal Biodiversity, 25-27 February 2014, London, UK. Available at: <http://www.cbd.int/doc/?meeting=MCBEM-2014-01>

---

<sup>ii</sup> Weilgart, L. (2013). "A review of the impacts of seismic airgun surveys on marine life." Submitted to the CBD Expert Workshop on Underwater Noise and its Impacts on Marine and Coastal Biodiversity, 25-27 February 2014, London, UK. Available at: <http://www.cbd.int/doc/?meeting=MCBEM-2014-01>

<sup>iii</sup> [Robert D. McCauley](#), [Ryan D. Day](#), [Kerrie M. Swadling](#), [Quinn P. Fitzgibbon](#), [Reg A. Watson](#) & [Jayson M. Semmens](#) (2017). Widely used marine seismic survey air gun operations negatively impact zooplankton

<sup>iv</sup> Weilgart, L. (2013). "A review of the impacts of seismic airgun surveys on marine life." Submitted to the CBD Expert Workshop on Underwater Noise and its Impacts on Marine and Coastal Biodiversity, 25-27 February 2014, London, UK. Available at: <http://www.cbd.int/doc/?meeting=MCBEM-2014-01>

<sup>v</sup> Ryan D Day<sup>1</sup> , Quinn P Fitzgibbon<sup>1</sup> , Robert D McCauley<sup>2</sup> , Jayson M Semmens<sup>1</sup> (2021). Examining the potential impacts of seismic surveys on Octopus and larval stages of Southern Rock Lobster PART A: Southern Rock Lobster. Fisheries Research and Development Corporation

<sup>vi</sup> Weilgart, L. (2013). "A review of the impacts of seismic airgun surveys on marine life." Submitted to the CBD Expert Workshop on Underwater Noise and its Impacts on Marine and Coastal Biodiversity, 25-27 February 2014, London, UK. Available at: <http://www.cbd.int/doc/?meeting=MCBEM-2014-01>

<sup>vii</sup> Weilgart, L. (2013). "A review of the impacts of seismic airgun surveys on marine life." Submitted to the CBD Expert Workshop on Underwater Noise and its Impacts on Marine and Coastal Biodiversity, 25-27 February 2014, London, UK. Available at: <http://www.cbd.int/doc/?meeting=MCBEM-2014-01>

<sup>viii</sup> Weilgart, L. (2013). "A review of the impacts of seismic airgun surveys on marine life." Submitted to the CBD Expert Workshop on Underwater Noise and its Impacts on Marine and Coastal Biodiversity, 25-27 February 2014, London, UK. Available at: <http://www.cbd.int/doc/?meeting=MCBEM-2014-01>

<sup>ix</sup> Weilgart, L. (2013). "A review of the impacts of seismic airgun surveys on marine life." Submitted to the CBD Expert Workshop on Underwater Noise and its Impacts on Marine and Coastal Biodiversity, 25-27 February 2014, London, UK. Available at: <http://www.cbd.int/doc/?meeting=MCBEM-2014-01>

<sup>x</sup> [Robert D. McCauley](#), [Ryan D. Day](#), [Kerrie M. Swadling](#), [Quinn P. Fitzgibbon](#), [Reg A. Watson](#) & [Jayson M. Semmens](#) (2017). Widely used marine seismic survey air gun operations negatively impact zooplankton

<sup>xi</sup> [Robert D. McCauley](#), [Ryan D. Day](#), [Kerrie M. Swadling](#), [Quinn P. Fitzgibbon](#), [Reg A. Watson](#) & [Jayson M. Semmens](#) (2017). Widely used marine seismic survey air gun operations negatively impact zooplankton