



## SEISMIC BLASTING IN THE OTWAY BASIN

**SUBMISSION FROM:** Friends of Lorne

**TO:** National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) and the Federal Minister for Resources, the Hon Madeleine King

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**Contact:** [Committee@friendsoflorne.org.au](mailto:Committee@friendsoflorne.org.au)

Penny Hawe, President.

WHO WE ARE: Friends of Lorne is a planning and environment conservation organisation based in Lorne, a small community of 1100 people on the southern coast of Victoria, two hours' drive from Melbourne. The organisation was founded in 1966. We are dedicated to conserving the natural fauna and flora of Lorne whilst ensuring that there are services and activities suited to the needs of permanent residents, holidaying residents, campers and tourists.

SUMMARY: Thank you for the opportunity to comment on the proposed seismic exploration in our region. **We are opposed to it because it represents an unacceptable risk to marine life and ecosystems.** There are too many unknowns/uncertainties and hence the company's risk assessment is not sufficiently precautionary. Harm may result. Further, local up-to-date science on Southern Right Whales (SRWs) indicates that SRWs are especially vulnerable. In the only calving ground for SRWs in southeastern Australia calving intervals are increasing, possibly as a result of climate change and consequent change in food and prey/predator distribution. In 2020, three females were expected into the calving ground. None came. Three returned in 2021 and in 2022 two familiar female-calf pairs returned, along with two new female-calf pairs. These very small numbers need protection from loud noise. As well as disorientation and auditory injury to whales, sound blast from seismic surveys can kill zooplankton one km away.<sup>1</sup> These continuously sounding "atomic bombs" in the ocean are far from trivial.

The Friends of Lorne also have an in-principle objection to further fossil fuel exploration as we believe Australia should be devoted to resource management that has less impact on carbon emissions.

MAIN TEXT: We note that this is a plan of 1438 pages (called *Otway Basin 3d Multi-Client Marine Seismic Survey, Environment Plan*), commissioned by a multinational company (TGS). We are a small voluntary organisation. We confine our opinions to what we know about marine life in our own locale, in particular, SRWs. We identify a misleading use by TGS of findings by local scientists.

Beyond that, the key difference between ourselves and TGS is what the reader of their plan accepts as reasonable risk (relative to possible benefit). In the plan, all sorts of data are quoted and decision trees used to assess risk in a seemingly objective way. However, tools like these invariably come into play because risk assessment in social and ecological contexts is ultimately a subjective, ethical valuation. *People* decide where to draw the line, not an algorithm. We urge NOPSEMA and the Federal Resources Minister to be much more cautious than TGS proposes to be.

The self-rated assessment by the company, TGS, is that the risk level for environmental impact is "acceptable", meaning that certain levels of auditory injury to mammals are reasonable. For SRWs permanent auditory damage is assumed to occur within 40m from the source. Beyond that "temporary" injury is inferred from impacts on behaviour. TGS relies heavily on the following article Southall, *et al* Marine

mammal noise exposure criteria: updated scientific recommendations for residual hearing effects. *Aquatic Mammals* 2019: 45(2): 125-232.

Yet in their own plan they admit (p394):

“Little is known about the movement of Southern Right Whales (SRWs) between aggregation areas and in offshore waters. The Conservation Management Plan for the Southern Right Whale 2011 – 2021 states that as migratory movement to and from calving grounds remain unknown, whales may be exposed to noise interference from seismic surveys during these movements (CoA, 2012). There remains the potential for TTS\* effects in SRWs offshore as they approach or disperse from shelf waters, however, given that these animals will be migrating/transient and some level of behavioural avoidance is likely, the potential for this to occur is limited.” \*TTS is a temporary auditory injury

In other words, TGS is essentially saying: we don't know where the whales are exactly, and so the chance of them being in the wrong place at the wrong time is low. They venture the idea that enough whales would simply get out of the way. We cannot agree - not when the seismic testing will occur every 10 seconds, 24 hours a day, 7 days a week for months on end. Indeed, where feeding, orientation, hazard avoidance, migration and social behaviour are altered by seismic surveys, researchers conclude that marine mammal populations could be adversely affected.<sup>2</sup> Startle, fright, avoidance, and changes in behaviours and vocalisation have been observed in other whale species at ranges of tens or hundreds of kilometres.<sup>2</sup> Around the world, scientists are calling for more and better research to fill the gaps on what is not known, alongside calls for international policy and regulation to reduce unnecessary underwater noise.<sup>3</sup> In some cases, this could be as simple as reducing the speed of cargo vessels.<sup>4</sup> A “no brainer” they argue, is also to avoid deliberate noise in sensitive areas. The TGS admits that the environment that may be affected by their proposal is the entire Otway Basin. It's difficult to argue that any of this area is *not* sensitive.

The whales are vulnerable. Our little town is a beauty spot for tourism, because of its legacy of marine and land habitat conservation. In 2021 we conducted a public webinar on *Southern Right Whales in Southeastern Australia*, led by Mandy Watson of the Victorian Department Environment, Land, Water and Planning (now called Dept of Energy, Environment, and Climate Action). Mandy oversees the citizen science projects that track the whales along the Otway Coast from the only calving ground in southeastern Australia.<sup>5</sup> This calving ground immediately abuts the proposed seismic testing site (with a mere 42km “buffer”). What is most disturbing is that calving intervals are increasing, possibly as a result of climate change, with consequent change in food and prey/predator distribution. Mandy Watson has also started to see years when the whales do not appear (eg., in 2020). The TGS plan states that “Watson et al. (2021) report no significant change in the annual abundance of cow-calf pairs in the south-eastern Australia region in more than three decades.”<sup>5</sup> But this was based on data reported from 1980 to 2018, that is, before she and her team saw the year when no whales showed up at all. And to provide context, Watson is selectively quoted by TGS, because her immediately adjacent text and overall point is that the SRWs are increasing elsewhere, but the local population she reports on, the one immediately adjacent to the Otway Basin, was disturbingly stable. In other words, something may be going wrong already. We contend that adding seismic testing into this environment could be catastrophic.

## References

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3. Chou E, Southall BL, Robards M, Rosenbaum HC. International policy, recommendations, actions and mitigation efforts of anthropogenic underwater noise. *Ocean and Coastal Management* 2021;202:105427
4. Findlay CR, Ronjano-Donate L, Tougaard J, Johnson MP, Madsen PT. Small reductions in cargo vessel speed substantially reduce noise impacts to marine mammals. *Science Advances* 9, eeadf2987 (2023) 21 June 2023
5. Watson M, Stamation K, Charlton C, Bannister J. Calving intervals, long-range movements and site fidelity of southern right whales (*Eubalaena australis*) in south-eastern Australia. *Journal of Cetacean Research Management* 2021: 22: 17-28.