

Trans-Tasman Resources Limited 2016 application to extract and process iron sand within the South Taranaki Bight

Presentation by Climate Justice Taranaki Inc. to the Environmental Protection Authority Decision Making Committee, Hearing date 7TH March 2017

Climate Justice Taranaki (CJT) is an incorporated society focused on climate change, its root causes and impacts and the social injustice associated with it. Our core members have backgrounds in environmental science, marine biology and ecology including threatened species, and journalism.

Decision Sought

CJT request that the application from Trans-Tasman Resources Limited (TTRLL) 2016 be **Declined**. Our reasons were explained in detail in our written submission.

Our Rationale

It is indisputable that many of New Zealand's ecosystems, rivers, lakes, wetlands, tussock grasslands, forests, coasts and marine realm, are under increasing pressure from human activities, many of which are unsustainable at present levels. A growing number of our native fauna are now extinct or threatened with extinction, our shameful national contribution to the 6th of Earth's mass extinctions, presently gaining momentum through continuing habitat destruction and climate change, among other drivers.

Yet as a nation, and despite our privileged '1st World' status, we routinely favour short-term economic 'imperatives' over longer-term ecological sustainability. In so doing, we are failing to meet our obligations under international conventions such as the United Nations Convention on Biological Diversity, or indeed to future generations who will inherit a country, and indeed world, much depleted of its natural wonders. At this late stage, we must be prepared to act decisively to protect our growing list of threatened species and the ecosystems on which they, and ultimately we, depend.

Threatened species

It is now well established that South Taranaki Bight, the broader area of the TTRL proposal, is home, feeding ground or migration corridor for numerous species of cetaceans – whales and dolphins (Slide 1). These include Hector's dolphin (with the critically endangered sub-species Maui's dolphin), Pygmy Blue Whales, Southern Right Whales (during the winter calving season) and killer whales.

Slide 1

Based on Dr. Childerhouse's mapping of the DoC dataset, the South Taranaki Bight hosts a highly diverse assemblage of cetaceans. We were frankly astonished by the list, which includes 38 species. We were sufficiently impressed that we sought to put this number into the global perspective (Slide 2).

Slide 2

In fact, according to Kaschner et al.' (2011) global analysis, our region has the most diverse assemblage of cetacean species on Earth, along with an area off Samborombon Bay, Uruguay.

It is sobering to consider what our region's cetacean fauna must have been like prior to the commercial whaling era, or indeed the much more recent expansion of fossil fuel mining and industrial fisheries. Today of course, much of this area is subject to intense industrial activity, as well illustrated by Prof. Liz Slooten (Slide 3).

Slide 3

The obvious questions arise:

Is this level of industrial activity appropriate in the midst of one of the most diverse cetacean assemblages on our planet, particularly given our international commitments to protect these species?

Should we be permitting yet more industrial activity in the area?

For Maui's Dolphin, the International Whaling Commission Sub-Committee on Small Cetaceans emphasized that *"the critically endangered status of Maui's dolphin and the inherent and irresolvable uncertainty surrounding information on small populations, require the implementation of precautionary measures"*.

The committee called for *"full protection of Maui's dolphins in all areas throughout their habitat, together with an ample buffer zone"*, comprising the area from Maunganui Bluff to Whanganui, offshore to 20 nautical miles and including harbours.

Such protection, were it to be afforded, would be consistent with NZ's international obligations under the UNCBD (Article 8) to d) promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings; and crucially f) ... promote recovery of threatened species.

It would also prohibit the present proposal.

As Torres et al. (2015) noted: *"The Maui's dolphin population is distributed along the western coast of North Island, potentially including the TTR proposed project area, and has a population estimate of just 55 individuals greater than 1 year-old (95% CI = 48 to 69; Hamner et al. 2012). Two recent Hector's or Maui's dolphin deaths have been recorded in the STB: (1) an individual was incidentally caught in a gill net on 2 January 2012 off Mt. Egmont, Taranaki and (2) a beach cast individual was discovered on 25 April 2012 at Opunake, Taranaki."*

Although none were sighted during aerial surveys for TTRL, an unsurprising result given their rarity and critically endangered status, Hector's / Maui's dolphins have been recorded in close vicinity of this proposal (Slide 4; from Childerhouse 2016, DoC Marine Mammal database). The general area provides an important corridor for movement of dolphins and other cetaceans along the south-west part of the North Island, at least prior to population declines.

Slide 4

The report by Torres et al. (2013/2015)¹⁹ concluded that ...*“areas of increased habitat suitability for Hector’s dolphins and southern right whales lie close inshore and may be increasingly used...”*

While this report did not examine the situation of blue whales in the area, Torres (2013) revealed that the South Taranaki Bight is one of very few known foraging grounds for this globally endangered species (IUCN, 2016), and identified the need for a greater understanding of their habitat use patterns to effectively manage activities such as shipping and mining. Torres (2013) also advised that *“despite apparent low-level impacts from individual sources, we must be cognisant of cumulative effects and manage these threats with a coordinated approach.”*

As the DMC is no doubt aware, Dr. Torres has recently reported a much larger population of Pygmy Blue Whales in South Taranaki Bight than previously estimated, significantly enhancing the area’s global importance for threatened cetaceans.

Cumulative Effects

As is clear from the mortality statistics and published science, these cetaceans are at significant risk, from fishing pressure, vessel strike, noise from mining, maritime traffic and seismic surveys for petroleum, marine pollution, habitat loss, changes in the availability of food sources, and declining breeding success due to dwindling populations.

Internationally renowned cetacean specialist Prof. Liz Slooten has repeatedly warned, in several submissions under the EEZ-CS Act and elsewhere, of the dangers posed to threatened cetaceans in the general area of this proposal from expanding industrial activity, as was well illustrated in her ‘cumulative impacts’ ppt graphic.

It is unequivocal that this proposal, if permitted, will add to these stresses and impacts.

What is equivocal is the level of additional impact.

Will it be ‘negligible’ as some TTRL consultant reports claim?

Will it be ‘less than minor’, the confoundingly ambiguous RMA standard?

Can it be assessed independently of the other industrial activities that already occur in the vicinity, as appears to be the approach taken by TTRL and their consultants?

Are there likely to be cumulative effects, potential synergisms of impact from all these various activities, such as underwater noise?

These are all important questions. So what are the cumulative risks?

Drawing lines on the Sea

On paper, the proposed TTR mining area borders the ‘Safety Zone’ of the existing Kupe gas platform. The ‘Safety Zone’ extends merely 500 metres from each point of the outer edge of the wellheads platform. For comparison, TTRL’s ‘Integrated Mining Vessel’ would be 345 metre long.

An analysis for TTRL by MetOcean did not consider the risk, extent and impact of oil spill, explosion or gas release resulting from the potential collision of any of the six TTRL vessels or crawlers with the Origin Kupe gas platform, pipeline and associated vessels. Yet it is just such unforeseen events, with

low likelihood but high impact that should be assessed, as the benefit of hindsight has unfortunately demonstrated for the disastrous Deepwater Horizon incident.

Of course, other companies also operate or plan to operate in the STB area, conducting seismic surveys, drilling, maintenance, transport and supply functions for the petroleum industry, all generating underwater noise and other forms of pollution.

As Ms Cheung explained, there are no tightly defined boundaries in the sea, for birds, fish and marine mammals to obey. Ocean currents flow insensibly across such invisible lines, supporting fauna and flora and also carrying whatever has been dumped, accidentally or deliberately, into them.

Spills, plumes and a lot of noise

For cetaceans, underwater noise (frequency and intensity) plays a crucial role in their biology, and can cause significant damage. For example, Slooten (2014) noted:

“The effects of noise on marine mammals include physiologically induced and behaviourally induced impacts. Physiological effects of noise include direct damage to organs and tissues, permanent or temporary hearing threshold shifts and stress.”

So how much noise has already been introduced to the area through industrial activities? Quite a lot it seems (Slide 5), most of which is in the critical range for cetaceans.

Slide 5

What are the cumulative effects?

Is it wise to introduce yet more near-constant noise to this anthropogenic cacophony?

Not according to Dr. Leigh Torres, whose comments were quoted by Ms. Cheung just now.

What about spills and plumes?

Between October 2011 and August 2015, 66 spill-related incidents were recorded from Taranaki's offshore oil facilities, fortunately all small-scale events. Yet for comparison the oil spill from the Rena grounding on Astrolabe Reef in October 2011 cost some \$130 million, of which the New Zealand government paid \$46.9 million. These figures did not include any economic losses in terms of tourism and fisheries, nor the largely unknown impacts on marine life, other than the oil-soaked birds.

The TTRL plume modelling report by Hadfield and Macdonald (2015) stated that there will be *“a rather mobile plume that clearly responds to wind-driven fluctuations in the currents. In its most common configuration the plume extends east-southeast from the source location”*. This plume is directly over some sensitive and potentially sensitive habitats and across the known range of Maui's dolphin and other cetaceans.

TTRL argue that the amount of sediment in the plume is insignificant compared with the background suspended sediment concentrations in the area. However, water clarity there presently fluctuates with weather and sea conditions, with periods of high turbidity interspersed among times of high water clarity. Presumably, the TTRL-generated plume will be an additional near-constant 'load' on this system, particularly during periods of calm weather. Furthermore, it is not known, at least to CJT, whether the plume may contain toxins, either from within the seabed, or introduced as part of

the mining process. Without knowing what's in the plume, it is impossible to assess the extent of impacts on the marine environment.

Yet the marine biodiversity report by MacDiarmid et al. (2015) concluded that there should be only negligible effects from the proposed mining *“Consequently they are likely to be displaced from, or experience a decrease in prey abundance or availability over a very small part of their distribution.”*

This way of assessing the effects of an activity, in isolation, is in our view seriously flawed. Just where are these species going to be 'displaced' to, when the larger area is increasingly being carved up for mineral and petroleum exploration and mining, along with the existing fisheries and other marine traffic?

Prof. Slooten made this point clearly in her Executive Summary of 31st March 2014: *“Displacement of marine mammals from the affected area, whether due to habitat damage, noise or the sedimentation plume, may result in displacement from important feeding areas and/or may increase the displaced animals' exposure to threats such as predators or entanglement in fishing gear. This is particularly critical for endangered and critically endangered species.”*

Trophic cascades

Impacts, including increased sedimentation and potential toxicity, that affect primary producers can cascade through food webs, usually with unforeseen consequences on higher trophic levels. Such trophic cascades have driven extinctions, are well documented in the science literature and should be considered in association with cumulative effects.

As Prof. Slooten noted (Executive Summary 2014): *“The experts agreed that any impacts (including from heavy metals) on other organisms including fish, benthic species and plankton have the potential to have flow on effects through the ecosystem, including for marine mammals which are at the top of the food chain.”*

Given all of the above, CJT submit that a cautionary approach to threatened cetaceans from cumulative effects should cause this proposal to be declined.

We consider that parts of Sections 6, 28, 33, 39 and 59 of the EEZ-CS Act provide clarity in respect of cumulative effects, and are therefore crucial to the DMC's deliberations on this proposal. In our view, the impact assessment provided by TTRL has failed to address cumulative effects in a comprehensive, or adequate, manner.

As the EEZ-CS Act section 34 clearly states, where inadequate information produces uncertainty, a cautionary approach favouring environmental protection is warranted.

Conversely, we are particularly concerned that if a marine consent were to be granted, relying on some form of 'adaptive management' approach, New Zealand's ability to deliver its international obligations, notably the recovery of threatened species, as per Article 8 of the UN CBD, would be further compromised.

We have a globally important cetacean hotspot right on our doorstep, including rare and highly threatened species. Surely it is time to protect it. Opportunities from such protection are significant, as demonstrated at Kaikoura, Tonga, Hawaii and other 'hotspots'.

Risk of Precedents

Finally, the current application represents the ‘thin edge of the wedge’, 65.76 km² of proposed mining area (PMP 55581) amidst an almost ten-fold 635 km² of exploratory permit area (PEP 54068) and an even larger 815 km² of continental shelf licence area (50753) for prospecting, all owned by TTRL. If this proposal were permitted, there is significant risk of major future expansion of the proposed mining area, with associated impacts. Furthermore, almost the entire South Taranaki coast, spanning over 402 km², is a mineral prospecting permit owned by PAN NZ Resources Ltd. Offshore from New Plymouth in the North Taranaki Bight, Ironsands Offshore Mining Ltd. is awaiting approval of its exploration permit (55709.01) covering over 223 km².

Together, these permits enable the search for dozens of metals and non-metals, from aluminium to antimony, coal (lignite), copper, diamond, gold, iron, nickel, silver, molybdenum, phosphate, platinum, rare earth elements and titanium, etc. – truly a miner’s ‘wet dream’, but at what cost to our marine species? If this TTRL application is approved, it could open the ‘flood gate’ to decades of seabed and coastal mining, resulting in irreversible environmental damage.

We therefore ask the DMC, as part of your findings, to recommend to central government that seabed mining become a prohibited activity under the EEZ-CS Act. Such a recommendation, if legislated, would eliminate this costly and time-consuming assessment process, for future would-be proponents, government agencies, the public and other interested parties.

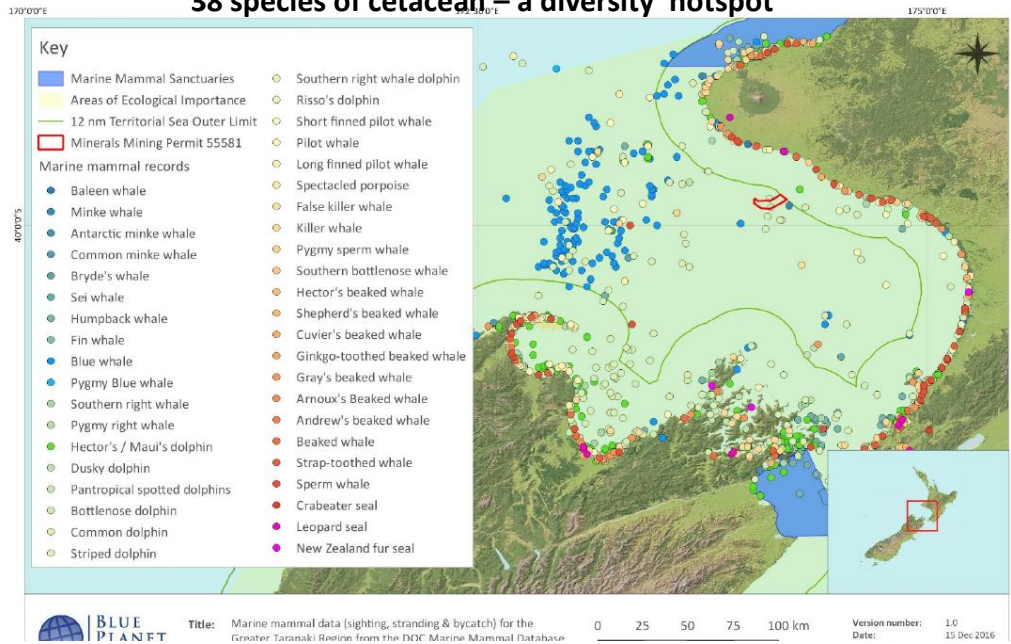
References

All are included in CJT’s prior submission or are held by EPA as part of the TTRL assessment other than:

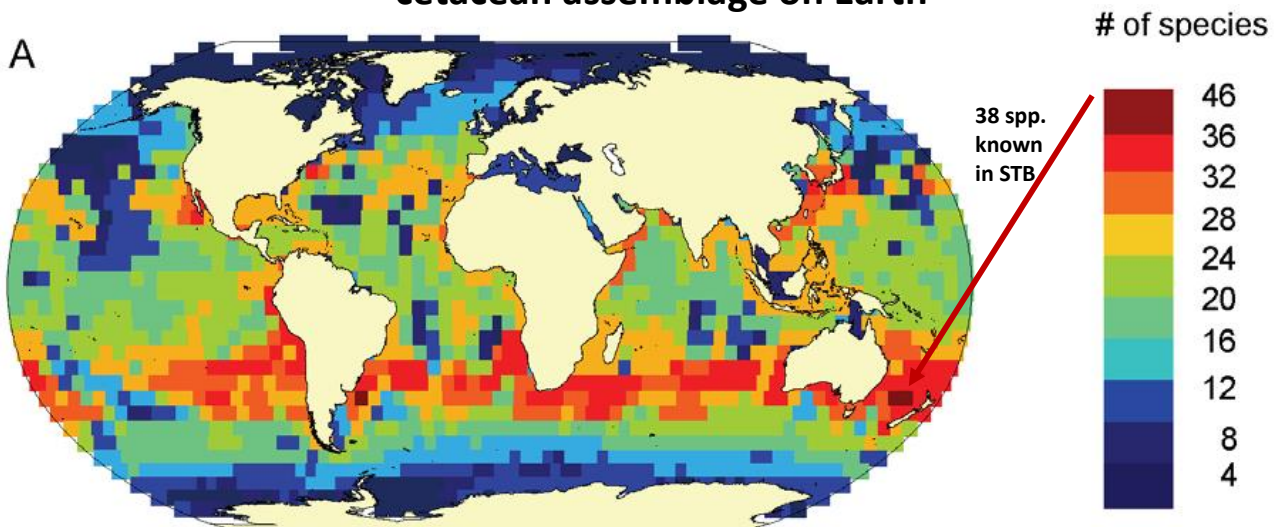
Kaschner K, Tittensor DP, Ready J, Gerrodette T, Worm B (2011) Current and Future Patterns of Global Marine Mammal Biodiversity. PLoS ONE 6(5): e19653. doi:10.1371/journal.pone.0019653

APPENDIX 1 – PRELIMINARY ASSESSMENT OF MARINE MAMMAL SIGHTING AND STRANDING DATA FOR TARANAKI FROM THE DOC MARINE MAMMAL DATABASE TO NOVEMBER 2016 Graphic from Childerhouse (2016)

38 species of cetacean – a diversity ‘hotspot’

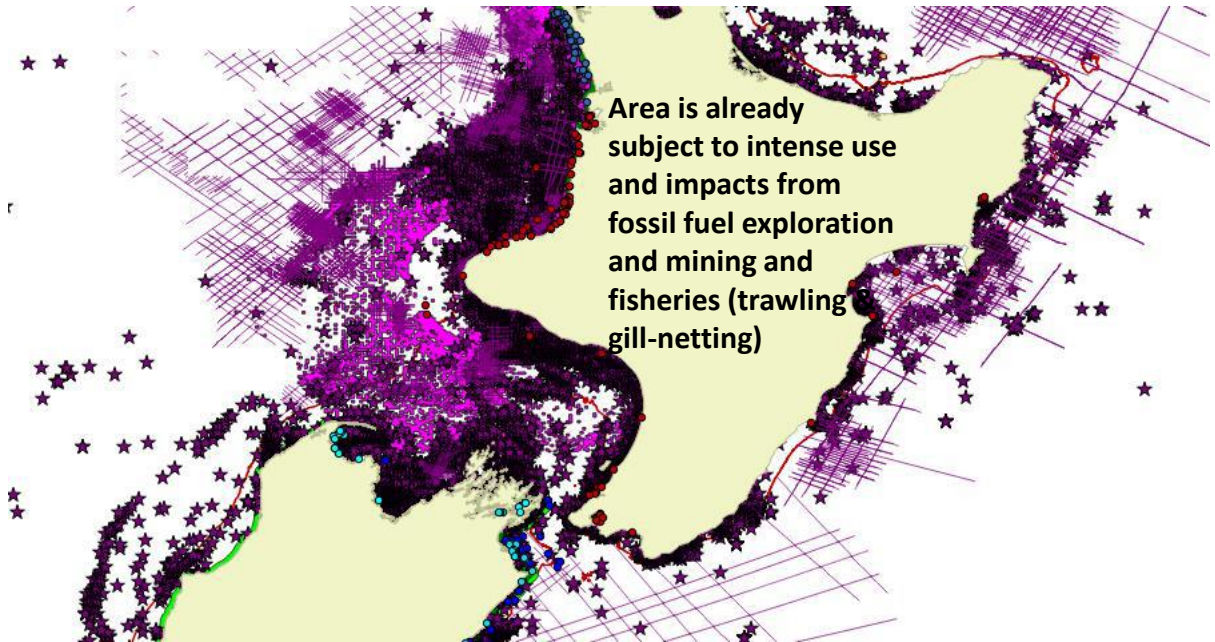


South Taranaki Bight and adjacent waters host the most diverse cetacean assemblage on Earth



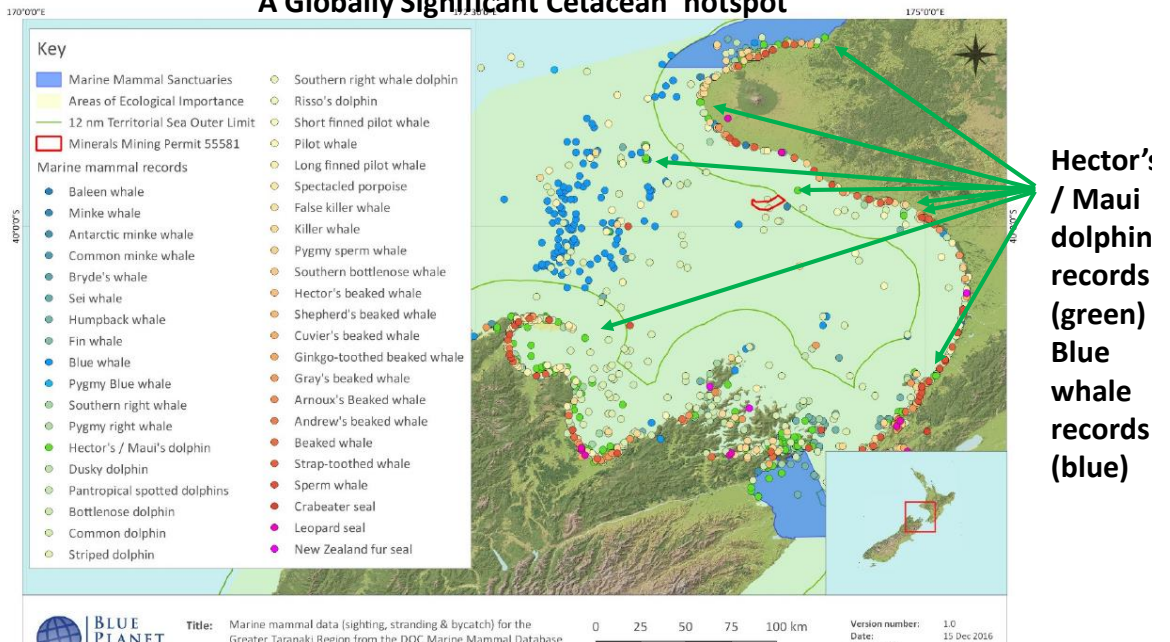
Kaschner et al. (2011) Figure 4. Validation with empirically observed marine mammal occurrences (56x56 cells, 1990–1999). A. Predicted species richness of all cetaceans.

Graphic from Prof. Liz Slooten: Cumulative Impacts



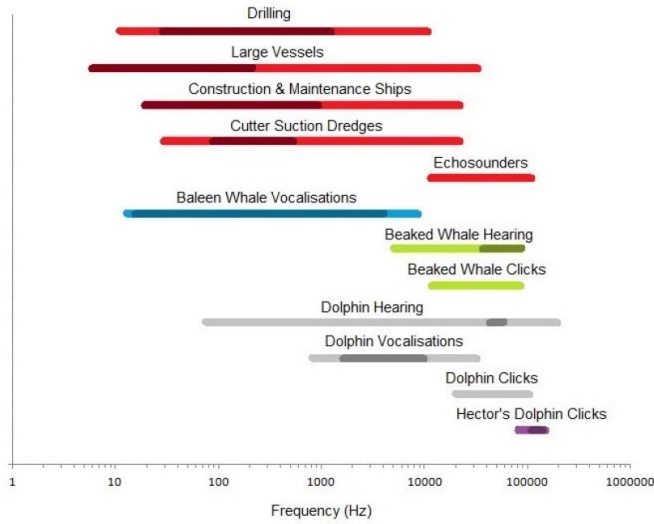
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A Globally Significant Cetacean 'hotspot'



Childerhouse (2016)²⁰

Figure 1: Comparison of marine megafauna³ hearing ranges with anthropogenic sources.⁴



All occur in South Taranaki Bight, as does seismic surveying, not displayed