

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

Hearing Statement to the Environmental Protection Authority Decision Making Committee, 9TH March 2017 by Lyndon DeVantier, PhD

By way of introduction I am a marine scientist with a PhD from the University of Queensland, Australia. In more than 30 years of international experience, I have observed and documented the continuing decline in the health of marine ecosystems and populations of marine species. Although speaking here in a private capacity, I am a member of the World Conservation Union Species Survival Commission and as such have participated in Red List assessments of extinction risk to threatened species.

A local example, one of many, is here in Taranaki and along other parts of the North Island's west coast, where we have only a remnant population of Maui's dolphins left. With a population currently estimated at some 55 individuals, numbers have declined from more than 100 dolphins over past decades.

Their decline is due to multiple causes, both direct and indirect, and in my view we should not be adding any further impacts, in the form of seabed mining activities. The proponent argues that the dolphins are very rare in the area, of course they are, as indeed throughout their entire W Coast NZ distribution range. These are critically endangered. Yet as Dr. Childerhouse showed, there have actually been multiple sightings in STB.

This dolphin will not be able to be saved from extinction by a captive breeding program. Its only chance of escaping the extinction vortex in which it is currently trapped is through concerted efforts to protect its habitat and reduce / remove current threats and impacts.

Some steps have been taken in these respects, including regulation of net fishing and a code of practice for seismic blasting, although these measures do not provide security for the survival of this species. This point was made strongly by the International Whaling Commission, as cited in the Hearing Statement of Climate Justice Taranaki (7th March 2017).

It is often the poorly understood or unforeseen synergisms among impacts that can have the most detrimental 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. All these factors are already at play, or will be if this proposal is permitted, in STB.

Additionally, changes in turbidity and sediment deposition from mining, coupled with enhanced storm activity and coastal erosion, will affect growth of primary producers over a large area of STB, with cascading effects through food webs, culminating, with continuing fishery pressure, in reduced prey for top level predators like the dolphins.

Many cetaceans, including other threatened species, also occupy these waters.

Dr. Torres has now tallied 68 individual blue whales, noting that the population has not yet been fully assessed. Dr. Childerhouse, in his supplementary evidence (dated 2nd March 2017), questions Dr. Torres' statistics in respect of 31 whales within 50 km of the proposed mine site. I have not had time to evaluate this fully, but would make the obvious points that a) an admittedly incomplete population estimate of 68 blue whales in STB is clearly important; and b) all experts agree that these are highly mobile animals that forage where environmental conditions, including food are favourable.

In the latter respect, as Dr. Torres noted ..*"it is naive to think that a 35 year mining project within the STB region will not impact this population of blue whales, through elevated noise within their frequency range, habitat displacement, vessel impacts, and prey disturbance."* (Torres Evidence para 58).

Of course, it is not only blue whales and Maui's dolphins that should concern us. According to Kaschner et al. (2011), South Taranaki Bight and adjacent waters host the highest cetacean diversity on Earth.

Surely this is something to celebrate, to be proud of, to nurture through careful stewardship. Certainly these species all deserve the best chance at survival, consistent with our international obligations under the UN Convention on Biological Diversity, and our national membership, via several central government agencies, of the World Conservation Union (IUCN).

I would also note here that the Iwi of this region, who all oppose this application, make an important, related point, from the perspective of their unique 'cultural lens', as has been very well articulated during this Hearing.

Yet it is no simple task to put a value on culture, or nature, or to compare such values with economic and/or employment projections from industrial activity. Some would argue, from an ethical perspective, that it cannot, or should not, be done. However, it is the consistent favouring of economic 'necessity' over cultural belief systems and ecological sustainability that is driving the present Anthropocene mass extinction, the sixth such event in Earth's history. In the latter respect, the IUCN Red List, of which I am one of numerous authors, is not easy reading. It is in fact a dreadful, growing chronicle of the rapidly escalating loss of species, our erstwhile companions on this planet.

So how many of these cetacean species and sub-species in STB are threatened with extinction?

According to the IUCN, 6 are Endangered.

How much do we actually know about these species in STB waters, or globally for that matter?

Do we have enough information about their biology, ecology, including feeding, breeding and migration patterns, to be certain that allowing more industrial activity over a multi-decadal time period, in their midst, will be benign?

It turns out we do not know a lot.

Eighteen species are Data Deficient on the IUCN list, meaning there is not enough known about them by the leading specialists globally, including Prof. Slooten, to enable a robust assessment. Surely this is cause for concern. Surely more studies like those of Dr. Torres should be initiated. This is a global hotspot after all.

Yet, as the Chairman has pointed out (Hearing, 7th March 2017), the DMC is required to work within a statutory 'box' in its deliberations. That box, the EEZ-CS Act, requires a decision to be made that assesses the various costs, including potential environmental impacts, and purported economic benefits of a proposed activity.

In the present case, the Ministry of Business Innovation and Employment, through their general manager of energy and resources, has told EPA that they wish to see iron sands mining developed (Taranaki Daily News 7th March 2017). So the message from one part of central government could not be clearer.

Yet the EEZ-CS Act is not administered by MBIE, but by the Environmental Protection Authority. And the Act also provides for, indeed requires, environmental protection. In particular, as has been stated many times during this Hearing, Section 34 requires a cautionary approach favouring environmental protection where inadequate information on impacts of a proposed activity produce uncertainty.

In the present instance, has TTRL provided adequate information to ensure certainty that their activity will not cause harm to the environment? Or that the harm they will cause is somehow acceptable, considered to be 'negligible' or 'less than minor', able to be monitored and adaptively managed (love those buzz words), outweighed by the economic gain, acceptable within the wording of the Act.

It is clear from numerous submissions to this Hearing that significant uncertainty remains. This was highlighted in the detailed submissions of KASM, Forest and Bird, Karen Pratt and the Nga Motu Marine Reserve Society, among many others.

In the case of threatened cetaceans, the evidence presented by various expert witnesses provides significant uncertainty, and indeed some outright disagreement (see eg. Table 1. Responses of Drs. Childerhouse and MacDiarmid to questions posed in DMC Minute 21 on the EPA website).

One of several major issues for cetaceans is ambient noise levels. Given that the STB is of global significance to these species, surely there would be adequate information provided by the proponent. However:

Question SC13: *Do you accept that TTR have failed to provide either measurements of the noise made by the proposed mining operation (ships, generator and dredge to be used) or measurements of the background “ambient” noise off Taranaki? (Slooten para. 15).*

Answer: *Yes - there are no actual measurements of the noise likely to be produced from the mining operation nor of ambient noise for the proposed PPA.”*

No actual measurements.

And

Question SC16: *Do you accept that there is no information on local sound propagation conditions that will impact the distance sound will travel (because these local conditions were never measured). (Torres para 42) And do you accept that sound propagation depends strongly on underwater topography, benthic substrate and water temperature (Slooten para. 15.7).*

Answer: *Yes - I agree.*

No information on sound propagation.

As Karen Pratt pointed out in her submission and her Hearing Statement of 7th March 2017, there is a lot more to this issue than has been detailed by the proponent, even the amount of noise that would be generated by the processing plant itself. Of course, noise is just one aspect of threat.

Another highly pertinent example:

Question SC12: *Do you accept that a detailed assessment of the conservation implications of the proposed mining, including cumulative impacts, will be essential in order to provide the DMC with enough information to make a science-based appraisal of the potential impacts of the proposed mining on marine mammals, in particular for Māui dolphins which are already at an extremely high risk of extinction (Slooten 18.1)*

Answer: *Yes - it is important to carefully consider cumulative impacts of any activity, especially for species at high risk of extinction.*

Thank goodness for that.

Yet, despite the admitted lack of actual data on noise, among many other things, and of the necessity of carefully considering cumulative impacts, Drs Childerhouse and MacDairmid managed to conclude that: *“There is sufficient information available presently to make a science based assessment of the scale of the impact of the proposed operations on marine mammals, including Maui dolphins.”*

This conclusion surely is at odds with the fact that a full 18 cetacean species that occur in STB are considered ‘Data Deficient’ on the IUCN Red List (Table 1 below). So little is known about them that they are unable to be assessed by the world’s leading cetacean specialists. Is this really sufficient information? A further six species and sub-species are Endangered, caught in the extinction vortex.

My own view is that the proponent and their consultants have not adequately addressed the meaning of 'cumulative impact' under the Act, parts of Sections 6, 28, 33, 39 and 59 of which provide clarity. If my reading of the Act is correct, it is not simply the cumulative impacts from the present proposal that are at issue here. It is the sum of all impacts in STB (presently unknown), with addition of those from this proposal, of which significant uncertainties remain.

In the brief time available here today, I have discussed just one aspect of this complex proposal, focused on the threatened cetaceans. Many other important questions remain unanswered, in respect of biological and ecological, cultural and economic issues. These uncertainties clearly warrant application by the DMC of caution, in finding in favour of environmental protection.

It is for these reasons that I urge EPA to decline this application, and to work towards restoring Taranaki's and the greater North Island's coastal waters to conditions amicable to healthy marine ecosystems and the long-term survival of these remarkable species. Our world will be a much poorer place without them.

Thank you for the opportunity to state my views.

Table 1. Species identified from South Taranaki Bight region on IUCN Red List. DD: Data Deficient; LC: Least Concern; Vu: Vulnerable; En: Endangered.

| Species name | IUCN Red List |
|---------------------------------|----------------------|
| Antarctic Minke Whale | DD |
| Common Minke Whale | LC |
| Bryde's Whale | DD |
| Sei Whale | En |
| Humpback Whale | LC |
| Fin Whale | En |
| Blue Whale | En |
| Pygmy Blue Whale (subspecies) | En |
| Hector's Dolphin | En |
| Maui's Dolphin (subspecies) | En |
| Dusky Dolphin | DD |
| Pan Tropical spotted Dolphin | LC |
| Indo-Pacific Bottlenose Dolphin | DD |
| Common Bottlenose Dolphin | LC |
| Striped Dolphin | LC |
| Southern Right Whale Dolphin | DD |
| Risso's Dolphin | LC |
| Short-finned Pilot Whale | DD |
| Long-finned Pilot Whale | DD |
| Spectacled Porpoise | DD |
| False Killer Whale | DD |
| Killer Whale | DD |
| Pygmy Sperm Whale | DD |
| Southern Bottlenose Whale | LC |
| Hector's Beaked Whale | DD |
| Shepherd's Beaked Whale | DD |
| Cuvier's Beaked Whale | LC |
| Ginkgo Toothed Beaked Whale | DD |
| Gray's Beaked Whale | DD |
| Arnoux's Beaked Whale | DD |
| Andrew's Beaked Whale | DD |
| Strap-toothed Whale | DD |
| Sperm Whale | Vu |