

Climate Justice Taranaki Submission

6th October 2023

In Response to Material Filed by Trans-Tasman Resources Limited, 19th May 2023.

**IN THE MATTER of the Exclusive Economic Zone and Continental Shelf
(Environmental Effects) Act 2012**

BETWEEN TRANS-TASMAN RESOURCES LIMITED

Applicant

AND THE ENVIRONMENTAL PROTECTION AUTHORITY

Consent Authority

Introduction

Climate Justice Taranaki (CJT)¹ is a community group dedicated to environmental sustainability and social justice. This includes issues of inter-generational equity, notably in relation to climate change, which will increasingly impact present and future generations' inalienable rights to safe water, food and shelter, crucial to sustaining livelihoods and quality of life. Composed of a broad range of people with varied expertise and life experiences, CJT has engaged respectfully with government on numerous occasions.

We welcome the opportunity to submit on the present proposed Trans Tasman Resources Limited (TTRL) application, having engaged with previous such applications². Herein we provide our response to TTRL's provision of additional information, in respect of the Decision Making Committee's (DMC) Minutes 2 and 3, also noting CJT has no commercial or other conflicts of interest.

CJT does not support the application. We remain concerned as to the effects of extraction, reduced light penetration and other effects of the sediment plume on adjacent biodiverse habitat hosting species of significant cultural, fisheries and ecological importance.

Overview of biological-ecological-cultural significance and 'best available information'

1. The present application sits adjacent to important biodiversity hotspots, hosting species that are globally threatened, or remain either unknown to science or recently described, many potentially endemic, or with source populations crucial in replenishment.
2. Initial surveys by NIWA in South Taranaki Bight reported new species of bryozoans, sponges, annelids, and algae, as well as new records for many groups for the region³. A subsequent 2021 NIWA survey of Patea Bank reefs (Morrison et al. 2022)⁴, in close vicinity of TTRL's proposed seabed mine site, found that a deeper reef held high densities of juvenile blue cod, consistent with it providing important nursery habitat. Several other smaller nursery habitat areas were discovered on the edges of some reefs.
3. Given the long-term, growing importance of these reefs to Tangata whenua and Tangata tiriti for biodiversity conservation, replenishment, recreational and commercial fisheries, and diving, cross-

sectoral alliances, as for example between Mana whenua, fishers and conservation groups, have arisen in respect of TTRL.

4. Despite recent survey work, a dearth of information still exists in the TTRL assessment process. The 2021 NIWA study, commissioned by Taranaki Regional Council (TRC), “... *demonstrates that subtidal reefs are in fact common on Pātea Bank, with many more awaiting discovery by multibeam sonar mapping. Associated with these reefs are extensive areas of biogenic habitat, dominated by macroalgae (notably Ecklonia forests, Caulerpa meadows, mixed macroalgal meadows, and soft bryozoan fields), as well as areas of sponge garden (areas of higher sponge cover more than 5 metres in width). The associated fish assemblages are abundant, dominated by blue cod, scarlet wrasse, butterfly perch, leatherjackets and tarakihi, with other fisheries species likely to be common (e.g., snapper, trevally, kingfish, and kahawai). **The unusual distance of these reef systems from shore, occurring on a wide shallow continental shelf, makes them relatively unique in the New Zealand context, and may have protected them (in part) from land-based impacts seen elsewhere around New Zealand. They are worthy of careful management by the TRC, and other governance entities.***” [CJT bolding]

5. Aotearoa hosts a globally significant marine fauna and flora already under significant, and rapidly expanding, cumulative impact (see below). CJT does not support adding further impacts to our territorial sea or EEZ.

6. Professor Barry Barton, Te Piringa Faculty of Law, University of Waikato, stated⁵:

“On land we can manage most of the environmental effects quite well, but at sea our ability to do so is limited; our baseline knowledge is lower, we can’t recontour mined areas or revegetate them, and it’s hard to monitor during and after operations. Dredging causes turbidity that can be harmful to sea life. Large areas of seabed may be affected, compared to onshore mining projects which dig deep and are more intensive. There is a lot we don’t know about marine ecosystems, especially in deep water, so a cautious approach to the environmental regime is well warranted.”

7. At broader geographic scale, Dr Hugh Govan, Adjunct Senior Fellow, School of Law and Social Sciences, University of the South Pacific, stated recently⁶:

“There is extremely low scientific knowledge of the Pacific Ocean and the connections between its different systems. The impacts of current human activities on this vast ocean, sometimes many thousands of miles away, are only just beginning to be identified and it is hardly the time to be imposing new threats to what may already be ecosystems at risk. The Pacific Ocean provides many benefits to the planet already, including its role as a carbon sink to mitigate the impacts of human emissions that cause climate change. Sustainable fisheries for globally important tuna stocks that migrate across the high seas as well as the national jurisdictions of island countries are a renewable resource that not only feed the world but also are far larger source of recurring revenue to the region than deep sea mining is ever likely to be.”

Cumulative Effects

8. The requirement to properly assess cumulative effects is clearly stated in the relevant legislation, in Sections 6, 28, 33 and 59 of the EEZ-CS Act, which provide broad discretion. It is also consistent with the Precautionary Principle. CJT has made this clear at various EPA Hearings. Assessments for notified (and non-notified) applications under the EEZ-CS Act should focus on the overall impact, including synergisms, of adding that application to those **already occurring, and predicted to occur** in coming decades. The Act clearly states (CJT bolding):

Section 6 Meaning of effect

- (1) In this Act, unless the context otherwise requires, *effect* includes—
- (a) any positive or adverse effect; and
 - (b) any temporary or permanent effect; and
 - (c) any past, present, or **future** effect; and
 - (d) any cumulative effect that arises **over time or in combination** with other effects; and
 - (e) any potential effect of high probability; and
 - (f) any potential effect of low probability that has a **high potential** impact.
- (2) Subsection (1)(a) to (d) apply regardless of the scale, intensity, duration, or frequency of the effect.

33 Matters to be considered ...

- (3) The Minister must take into account—
- (a) any effects on the environment or existing interests of allowing an activity with or without a marine consent, including—
 - (i) **cumulative effects**; and ...
 - the effects of activities that are not regulated under this Act**; and

...

- (d) the importance of **protecting the biological diversity and integrity of marine species, ecosystems, and processes**;
- (e) the importance of **protecting rare and vulnerable ecosystems and the habitats of threatened species**; and
- (f) **New Zealand’s international obligations**; and
- (i) the nature and effect of other marine management regimes; ...

9. Furthermore, Article 8 of the United Nations Convention on Biological Diversity⁷ requires the following of Parties, including New Zealand (which signed and ratified the Convention in 1992 and 1993):

Article 8(d) Promote the protection of ecosystems, natural habitats and the **maintenance of viable populations of species in natural surroundings**;

Article 8(f) Rehabilitate and restore degraded ecosystems and **promote the recovery of threatened species**,...

Threatened species

10. It is CJT’s view that New Zealand has not delivered on these obligations in our offshore regulatory regime, as presently administered, in respect of ecosystem ‘health’ and species’ survival. We have been told in previous Hearings that DMCs are operating ‘in a box’ of regulations that limit their abilities. As listed above, we argue that the EEZ-CS Act does offer opportunities to step ‘out of the box’. Indeed, this is long overdue, as the status quo for coastal and marine fauna attests, with:

- 90 % of indigenous seabirds
- 82 % of shorebirds
- 81 % of assessed marine invertebrates
- 22 % of marine mammals

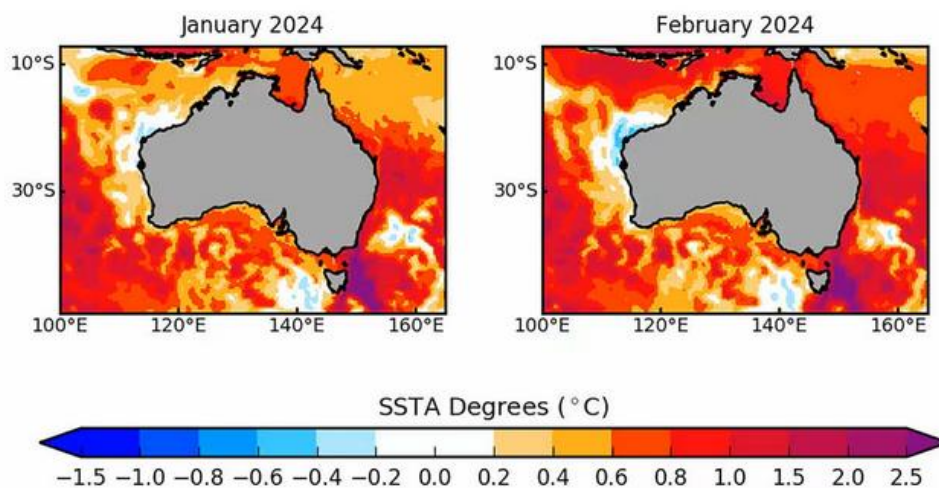
classified as Threatened or at risk of extinction (Statistics New Zealand and MfE ‘Our Marine Environment 2022’⁸. Are these acceptable environmental ‘bottom lines’?

11. Specifically on cumulative effects, according to a recent IPCC report⁹, the ocean:
- has warmed unabated since 2005, continuing the clear multi-decadal ocean warming trends documented in IPCC AR5

- is continuing to acidify in response to ongoing ocean carbon uptake
- is losing oxygen overall with a very likely loss of 0.5–3.3% between 1970–2010 from the ocean surface to 1000 m (medium confidence)
- nutrient cycles are perturbed and there is high confidence that this is having a regionally variable impact on primary producers
- warming has contributed to observed changes in biogeography of organisms ranging from phytoplankton to marine mammals (high confidence) ...

Aotearoa's seas are no exception, indeed we are world 'leaders'.

12. The reality of one cumulative effect is exemplified by the extended marine heatwaves that have impacted the Tasman Sea, most seriously since 2016. The prediction by Australia's Bureau of Meteorology (BoM) for Summer 2023-24 is dire, with areas of the Tasman Sea forecast to heat by more than two degrees Celsius. These are future cumulative effects, a bellwether, along with acidification and deoxygenation, of the rapidly increasing marginality of the Tasman Sea and ocean ecosystems more generally.



A Bureau of Meteorology map showing predicted sea surface temperatures. Credit: BoM.

13. On Fisheries, IPCC had this to say:

- Fisheries catches and composition in many regions are already impacted by the effects of warming and changing primary production on growth, reproduction and survival of fish stocks (high confidence)
- Warming-induced changes in spatial distribution and abundance of fish stocks have already challenged the management of some important fisheries and their economic benefits (high confidence)
- Coastal ecosystems under stress from ocean warming and SLR [sea level rise] **exacerbated by non-climatic pressures from human activities (high confidence)** [CJT bolding]
- Since early 1980s, the occurrence of harmful algal blooms and pathogenic organisms has increased in coastal areas in response to warming, deoxygenation and eutrophication, with negative impacts on food provisioning, tourism, the economy and human health (high confidence).

Species discovery and extinction, reductionism, siloes and 'steady states'

14. In the case of TTRL, conclusions of prior consultant reports submitted with previous applications have been found seriously wanting, not least by the more recent 2021 NIWA surveys. This is not restricted to the present case. It is a global problem, as highlighted by Lees and Pimm (2015)¹⁰: *"... patterns of species discovery ... ask whether we will find species before they go extinct or only afterwards. The simple message is that we are constantly adding to the totals of recently extinct species. ... Less expected is that we are adding new species that, when discovered, are so threatened that they survive for only a few years. That we have these examples may be by good luck: we will surely have missed many others. This renders global estimates of extinction rates conservative. The survival of these global rarities is dependent on the protection of remaining [habitat]"*
15. The latest round of consultant reports prepared for TTRL has again adopted highly 'siloed' reductionist approaches, as if the TTRL proposal is the only consideration, that our ecosystems are at 'steady state', and future effects do not require considered analysis. This is a most serious omission and consistent flaw in the TTRL reports. It also discounts the relevant clauses in the EEZ-CS Act and other relevant legislation, included above (paragraphs 8 and 9).
16. Additionally, separation of the 'proposed project area' from the 'proposed consent area', appears to be an attempt to minimize effects, as if lines drawn on a map have any relevance to motile marine species such as marine mammals, or site-attached or sessile species under a plume. It is, for example, incorrect to argue (see Mitchell 2023, paragraphs 12 and 13)¹¹ that because the proposed operation is located in the EEZ, that management and legislation relevant to the adjacent territorial sea are of no or little relevance. The argument discounts or ignores obvious transboundary effects of noise and sediment plume, among other impacts, and the movement of species in and out of the Territorial Sea and EEZ.
17. Given the rapidly deteriorating oceanographic state of the Tasman Sea, resident and migratory species will need 'all the help (and space) they can get' in finding suitable future habitat, foraging, and breeding grounds. It is axiomatic that predatory species high on food chains rely on the presence of prey that may shift in location annually, krill being a pertinent case in point in respect of cetaceans.
18. Adding more industrial activity, with demonstrable 'spill-over' effects in respect of spoil plumes and noise, within a globally significant IUCN IMMA (Important Marine Mammal Area¹²), is directly counter to this need. Such spill-over into the territorial sea should invoke other Marine Management Regimes, as outlined by Counsel for TTRL in their Memorandum in response to DMC Minute 3.
19. On marine mammals, Childerhouse (2023 page 24, his paragraph 69)¹³ confused terminology, writing 'Impact Marine Mammal Area' for the acronym IMMA. Indeed, the error is germane, as marine mammals have been heavily impacted in the vicinity. Twelve male Sperm Whales (IUCN Red List VU) washed ashore, long dead, on a South Taranaki beach following a major seismic blasting campaign in 2018, while Maui dolphin, endemic along the North Island's west coast, are Nationally Critical (IUCN Red List EN), some 60 individuals remaining. As noted in paragraph 10 above, many other species are either on the Threatened list, or are Data Deficient, the latter a major issue with cetaceans.
20. In summarizing new work, Childerhouse (2023) reported that: *"(a) There were 671 additional records reported from within the proposed project area bringing the total number of records to 2,668 up to April 2023; (b) There was one new record from a new species, rough toothed dolphin, which previously hadn't been reported in the database bringing the total number of species*

recorded in the STB region to 41; (c) The highest number of new records by species were: i. Hector's and Māui dolphins with 406 records; ii. Common dolphins with 65 records; iii. Killer whales with 47 records; iv. Dusky dolphins with 24 records; v. Humpback whales with 16 records, and vi. Blue whales with 11 records.

21. An admittedly conservative tally for the STB region of 41 species places the area at the very pinnacle of marine mammal diversity globally – an important record for Aotearoa, notably including resident populations of Threatened species, as illustrated by Childerhouse (2023 Figure A2-1). In a separate new report for TTRL, MacDiarmid (2023)¹⁴ states: *“In particular when fully taking into account the limited range of some species, areas of overlapping species distribution, and the higher certainty of model predictions in some areas, the inshore areas in the STB were identified as being among the top 5% for cetacean conservation value in the New Zealand region inside the EEZ boundary and the STB as a whole in the top 15% of areas.”*
22. On seabirds, despite acknowledging some risks, including displacement from the mining site (physical exclusion), reduced foraging efficiency (via increased turbidity from the sediment plume), noise, fuel or oil pollution and through effects of artificial nocturnal lighting, and that the seabird assemblage utilising the proposed mining area and adjacent areas in the STB, and how this might vary seasonally, remains to be quantified, Thompson (for TTRL)¹⁵ managed to conclude that the proposal will not result in material harm to seabirds.
23. However, contrary to Thompson's opinion on the fate of seabirds, Professor John Cockrem, School of Veterinary Science, Massey University, stated:
*“... seabird populations are going to be, as time goes on, more and more vulnerable to adverse effects created by dirty water from seabed mining. Their day to day existence is becoming gradually harder and harder. This is owing to **changes in food availability that can come from changes in sea surface temperatures, leading to changes in the extent to which nutrient-carrying colder water is upwelling to the surface. ... Seabirds are facing a much more precarious existence in coming decades, than was the case before. And so seabed mining should not happen in New Zealand waters under any circumstances.**”*¹⁶[CJT bolding].
24. Yet, as noted above, an apparent focus specifically on the present situation in the 'proposed consent area' in TTRL's recent reports disregards future uncertainties of inter-seasonal or annual shifts in threatened species' populations in respect of food sources and other oceanographic changes, or the risks of cumulative effects from oceanic disruption, as highlighted by IPCC among many others.
25. Neither Childerhouse (2023) nor MacDiarmid (2023), Mitchell (2023), Macdonald (2023)¹⁷ or Thompson (2023) actively considered future or cumulative effects – neither are mentioned by MacDiarmid, Macdonald or Thompson; 'future' is mentioned once by Mitchell in respect of surveys; and both are mentioned once by Childerhouse; 'future' in respect of surveys, and, for 'cumulative': *“Slooten (2020) and Slooten & Dawson (2020a,b; 2021) review the current management for the conservation of Māui and Hector's dolphins. There is little information specifically relevant to seabed mining other than to identify it as potential cumulative effect and to confirm that the Māui dolphin population cannot sustain any mortality without risking a catastrophic decline”*. [CJT bolding].
26. Childerhouse's (2023) conclusion, in part, acknowledges the lack of data: *“I acknowledge that there were some information gaps and uncertainties in the information provided, I believe that most of these gaps would be impossible to fill given their complexity and the significant difficulties in*

actually collecting the required data (e.g., robust abundance estimates and distribution maps for all marine mammals in the region).” [CJT bolding].

27. Yet rather than advocating for the Precautionary Principle to apply, Childerhouse (2023) continued: *“It is my understanding that much of the Supreme Court’s concerns stemmed from the imposition of conditions requiring that there were “no adverse effects at a population level”. I am supportive of the sentiment of this condition but believe that the condition as written would be challenging to monitor and enforce. I believe that this condition could be amended for clarity or potentially even removed without affecting the performance of the conditions for ensuring there is no material harm on marine mammals.”*
28. Yet New Zealand’s conservation and species recovery obligations, nationally and internationally, require population level assessment and recovery action (see paragraph 9 above re UNCBD).
29. Childerhouse (2023, his paragraph 111) also stated that *“... previous marine mammal survey data is now very dated and therefore it is essential that new baseline data is collected ... to (i) describe marine mammals with in the area and (ii) to allow for meaningful comparisons with future and ongoing survey work to assess potential trends or changes.”*
30. Yet MacDiarmid (2023, her paragraph 39) claims: *“The proposed mining area and adjacent areas in the STB are one of the best studied shallow exposed shelf marine environments in Aotearoa New Zealand with a wealth of studies generated by the applicant that add to a body of existing information.”* This assertion is directly contrary to statements by Morrison et al. (2022)³ that: *“...this region has been one of the least studied coastal regions of New Zealand.”*
31. Both statements cannot be correct. Indeed, Morrison et al. (2022)⁴ concluded: *“However, this was not a comprehensive survey and **the reefs surveyed are just a sample of the overall reef number and complexity on Pātea Bank.**”* [CJT bolding].
32. Furthermore, again contrary to MacDiarmid’s assertion above, the ‘best available information’ on several key topics was not provided directly by the Applicant. Rather much was compiled from the scientific literature and other sources in respect of marine mammals and seabirds, other submitters on presence of hard ground reefs and their biota, and more recently by Taranaki Regional Council from NIWA (Morrison et al. 2022)⁴, the last after the previous TTRL assessment process. As Morrison et al. (2022) noted: *“All the locations identified through local fishing/diving knowledge held reefs. **Many additional reef (complex local bathymetry) locations were identified, both adjacent to/around the local knowledge sites, and more broadly across the survey extent.**”* [CJT bolding].
33. NIWA *“characterised the seafloor landscape into 14 feature classes (Figure 3-2), with flat plains being the dominant “base background” within which the other 13 classes occurred. Of these 13 classes, eight were indicative of reefs for this region”*. These were steep slopes, scarp/cliff, rock outcrop highs, narrow ridges, local ridges/boulders/ pinnacles on slopes, local ridges / boulders / pinnacles on broad flats, local ridges / boulders / pinnacles in depressions, and flat ridge tops.
34. This is not just a sandy desert hosting short-lived ephemeral species. Indeed, some sponge formations were more than five metres across, their age unknown but likely significant.
35. In summary, NIWA’s work confirmed significant and varied reef structure in the vicinity, hosting important nursery grounds for fisheries and other species, highlighted their apparent uniqueness, and cautioned the need for careful management.

36. The absence of this information from the previous EPA DMC assessment of TTRL's application demonstrates failings of reliance on 'best available information' in the marine realm.
37. Conversely, it is a strong endorsement for the Precautionary Principle as applied to environmental bottom-lines. The 'best available information' prior to NIWA's more recent work was clearly insufficient for a well-informed assessment, despite assurances from consultants to the contrary. Unfortunately, that trend continues in the present TTRL reports.

A fine line between expert 'opinion' and advocacy

38. There are significant expenses borne by applicants initially in preparing proposals that include environmental and other impact assessments, any subsequent legal challenges (on both sides), and any fines that may be levied by regulators for operational poor performance or failures. Costs to government include those associated with initial assessments, the ongoing regulatory process and, potentially, decommissioning – clean-up. Costs to submitters, including Iwi and Hapu, NGOs and community groups such as CJT, are also significant, although typically unfunded and unpaid.
39. Costs to applicants of initial assessments are presumably 'weighed' against the necessity for gaining 'expert opinion' from hired consultants, to present at the requisite Hearings. In CJT's experience, these opinions invariably favour, or are sufficiently ambiguous, that applicants are supported to proceed. Unsurprisingly, we have not been able to find a single example to the contrary, where a report prepared for and submitted by a proponent has, in its conclusions, recommended against the proposal. It is self-evident that companies will not want to pay for studies that may produce results counter to their proposal.
40. Conversely, independent experts, including globally-recognized specialists, in previous Hearings under the EEZ-CS Act have been considered, in a derogatory sense, as 'advocates', apparently lacking 'objectivity'. This discounts or dismisses the expert's role in speaking on behalf of species, including those threatened with extinction, that have no voice in the proceedings.
41. Crucially, on representation for non-human victims, such advocacy provides "... an 'oracle' effect [where a] spokesperson gives voice to the group ... thereby speaking with all authority of that elusive, absent phenomenon" (Kendall and Nouwen 2013)¹⁸.
42. In all cases, requisite studies should be conducted by independent entities paid by the regulator from funds secured from the proponent, not by the proponent directly. Upton Sinclair's famous aphorism may be relevant: "*It is difficult to get a man to understand something, when his salary depends on his not understanding it.*"
— Upton Sinclair, [I, Candidate for Governor](#) ¹⁹

Material and immaterial harms and the Precautionary Principle

43. Despite recent information confirming the biological-ecological importance and uniqueness of the area, and also considering its essential quality and vitality – its Mouri significance – to Tangata whenua, concluding views in the TTRL reports remain largely unchanged from their prior opinions. A relevant consideration is the interpretation of levels of harm – whether 'material' or 'immaterial'. MacDiarmid (2023) states in respect of the Supreme Court's guidance: "... that what amounts to "material harm" is to be determined on the facts, and this requires qualitative, temporal, quantitative and spatial aspects to be weighed." MacDiarmid continued: "*When those aspects are weighed, I consider the findings of the DMC in 2017 do not necessarily amount to a decision that the sediment plume would cause material harm.*" [CJT bolding].

44. Carefully worded, this statement takes no account of potential synergisms with other disturbances in the changing oceanographic regime, nor of increasing future habitat marginality more generally. Indeed, offshore, deeper water, hard substrate communities may well prove crucial in replenishment of shallower water near-shore habitats as ocean disruption intensifies in coming decades. This point was alluded to in the NIWA (2022)⁴ report to TRC in recognizing the importance of offshore reef nursery grounds.
45. CJT agrees with the first part of MacDiarmid's (2023) statement above on the need for detailing and weighing qualitative and quantitative facts. In that respect, it is important to understand that these reef communities are both adapted and acclimated to the present oceanographic regime, its ambient light and turbidity, nutrient loading, carbonate saturation, temperature fluctuations, current flows, wave energy and biotic interactions. All are likely to vary, to greater or lesser degree, diurnally, seasonally and annually.
46. Many marine species have narrow physiological tolerance limits relating to their local physico-chemical and biotic regime. These can vary at different life stages. Most marine species, excluding cetaceans and seabirds, also require specific metamorphosis cues and, for sessile and site-attached species, settlement cues. Any changes in local conditions can alter or destroy such cues, and if for key species, create trophic cascades or other cascading effects through food webs.
47. In the present case, some species may already be living close to those limits. For example, (Morrison et al. 2022)⁴ reported that some 612 km² (just 4.9 % of the STB) of seafloor extent is estimated to receive sufficient light to support microalgae growth (citing Pinkerton 2014). Any substantive change, as for example with a near-constant increase in turbidity, sediment (and potentially nutrient) loading from the spoil dumping, albeit varying in spatial distribution with currents, could be enough to cause loss of species and shifts in community structure.
48. Indeed, such change was predicted by Pinkerton (2014)²⁰ who stated: *"The optical effects of the sediment decrease away from the mining site, with the position and size of the region affected optically depending on the prevailing current direction and the weather/wind/wave conditions. About 10 km from the mining site, the change in optical properties is likely to be about 2 fold (e.g. euphotic depth from 25 m to 12 m; underwater visibility from 7 m to 4 m)."* [CJT bolding]. Pinkerton's (2014) Figures 5 and 6, reproduced below, illustrate this point.
49. Pinkerton (2014) concluded: *"Seabed daily light (in absolute values) before and after mining over the STB was estimated ... (Figure 6). The average area over which light at the seabed was greater than 0.4 mol photons m⁻² d⁻¹ with no mining was estimated to be 612 km² (4.9% of the STB area of 12,500 km²). This is predicted to reduce by 48% (to a mean area of 316 km²) due to mining at site A and by 57% (to a mean area of 263 km²) due to mining at site B."* [CJT bolding]. And *"Where macroalgae is present, reductions to the average light at the seabed will reduce their growth rates and may reduce the area over which they can live."* [CJT bolding].

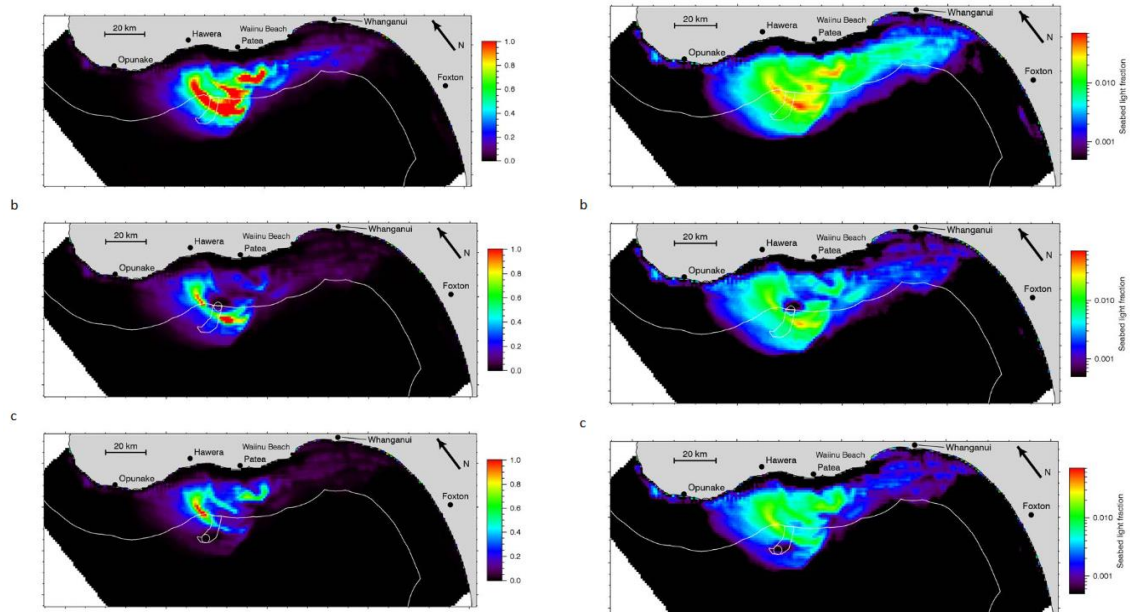


Figure 6. Average (over 2 years) light (PAR) at the seabed in mol photons $m^{-2} d^{-1}$ (0.4 suggested minimum light needed for benthic microalgae to grow, Gattuso et al. 2006; Huettel et al., 2014). See Hadfield (2013) for region limits. Red/yellow is higher seabed light; blue/black is lower seabed light. a: Background (no mining). b: with mining at site A. c: with mining at site B.

Figure 5. Mean average (over 2 years) light at the seabed as proportion of surface light. Orange/yellow is higher light; blue/purple is lower light. a: Background (no mining). b: mining at site A. c: mining at site B. All data processed using new optical processing code (v7) applied to new (lower) sediment discharge rates.

50. Were the DMC's 2017 findings sufficiently cognisant of all these aspects? Certainly Pinkerton's (2014) evidence was available. However, many of the deeper reefs that lie in the predicted path of the plume were not even documented, let alone their species complements, or local oceanography. This remains true today, although the 2022 NIWA Report for TRC has provided some additional enlightenment, their caveats on lack of comprehensiveness notwithstanding.
51. Lees and Pimm's (2015) statement bears repeating: "... patterns of species discovery ... ask whether we will find species before they go extinct or only afterwards. The simple message is that we are constantly adding to the totals of recently extinct species. ... Less expected is that we are adding new species that, when discovered, are so threatened that they survive for only a few years. That we have these examples may be by good luck: we will surely have missed many others. This renders global estimates of extinction rates conservative. The survival of these global rarities is dependent on the protection of remaining [habitat]". This statement is abundantly true for our region, noting again that NIWA surveys in South Taranaki Bight discovered new species of bryozoans, sponges, annelids, and algae, as well as new records for many groups for the region, and also noting our globally woeful record of Threatened species and extinctions (see paragraph 10 above).

Legislative issues and regulatory challenges

52. One of the reefs in the area, the 'Project Reef', has been recognized in TRC's operative Coastal Plan as 'An Area of Outstanding Natural Character'²¹. This places additional emphasis on the need for careful management, including of trans-boundary effects from the adjacent EEZ, contrary to the assertion by Mitchell (2023, his paragraphs 12 and 13).
53. Having engaged in numerous hearings under the EEZ-CS Act, our view, as outlined above, is that the regulatory regime has failed, consistently, to adequately assess cumulative effects on the environment from adding more industrial activities on an ecosystem already under significant and growing stress. A holistic view of our present circumstances and trajectory, and responsibilities under international treaties would create a far more restrictive, and better managed, regime. Aotearoa New Zealand hosts an incredibly diverse seabird, shorebird, marine mammal, fish and invertebrate fauna and algal flora. Many are now threatened with extinction.

54. Given the significant uncertainties and risks of seabed mining, and with cognisance to the Precautionary Principle, socio-cultural and environmental concerns, and future generations, CJT was supportive of Te Pāti Māori's Private Member's Bill²² to ban seabed mining in Aotearoa New Zealand. The lack of major party support for that Bill means that the present process may extend through another full round of appeals along the entire judicial system, again.
55. Invariably, for permitted proposals, where environmental, engineering or other challenges are identified, sets of conditions are imposed, typically following caucusing among experts for the proponent and those representing organizations, usually conservation NGOs, Hapu-Iwi and/or community groups. Placing numerous conditions on operators in an offshore environment – a largely 'trust us' approach - may appear an effective solution, but experience demonstrates that it is fraught with risks, not least as the regulatory capacity for oversight and supervision is, to be frank, lacking. Despite some differences in the regulatory regime, pertinent examples of monitoring and management challenges can be taken from offshore mining activities in Taranaki, not least in the numerous leaks and spills, including fouling of shorelines^{23, 24}.
56. As introduced above (paragraph 1), such risks range from the biological-ecological, as in 'unforeseen' events arising from synergisms among multiple disturbances (eg. heat waves, plumes, invasive species, diseases) in a rapidly changing oceanographic regime, to the meteorological-logistical-economic (eg. severe weather events, equipment failures, bankruptcy, abandonment, decommissioning) to the socio-cultural loss of Mouri.

Te Ao Māori perspective

57. The affected iwi, hapū and whanau of Taranaki, including members of CJT, have made their opinions very clear. Over the past many years that seabed mining has been proposed for our rohe, we have consistently said that no, we don't want it. Since 2011, Ngāti Ruanui and Taranaki iwi have led the fight against the practice^{25, 26}.
58. Ever since colonization, we have had extractive industries that stole our land and resources for industrial farming and forestry to feed parts of Europe and the colonial settlers. Later came the oil and gas industry and then the accumulated effects of the pollution, deforestation, soil erosion and increased access to waterways and the coast that has now had major effects on our fisheries and kaimoana.
59. This latest proposal for seabed mining is a continuation of the extractive activities that have caused our people and taiao so much harm. It is an attack on our whakapapa. As we sit in the midst of one of the planet's worst mass extinctions, and face the collapse of our global climatic systems, we cannot possibly support an industry that would severely damage the seabed in our rohe and cause multiple as yet unknown effects on sealife and the communities' ability to feed itself from our fisheries.
60. Under Te Tiriti o Waitangi seabed mining does not comply.

Concluding remarks: Learning the lessons of history

61. It remains our view that the risks far outweigh the potential benefits. Seabed mining is another form of frontier extractivism, the latest in a long and sorry history of environmental degradation, emblematic of our civilization's increasingly rapid exceedance of planetary boundaries²⁷. It is not for want of warnings, from across the geo-political spectrum.
62. There is a huge literature on this subject, much of it from First Nations peoples, the best-known quote attributed to Alanis Obomsawin (1972): "... *the most affluent of countries, operates on a*

depletion economy which leaves destruction in its wake. Your people are driven by a terrible sense of deficiency. When the last tree is cut, the last fish is caught, and the last river is polluted; when to breathe the air is sickening, you will realize, too late, that wealth is not in bank accounts and that you can't eat money.”²⁸

63. Karl Marx (1857-61)²⁹ had this to say: *“For the first time, nature becomes purely an object for humankind, purely a matter of utility; ceases to be recognized as a power for itself; and the theoretical discovery of its autonomous laws appears merely as a ruse to subjugate it under human needs, whether as an object of consumption or as a means of production.”*
64. Another, more recent warning, albeit more than 60 years ago, from a very different part of the political spectrum, from former United States President Dwight Eisenhower (1961)³⁰ in his farewell address:
- “As we peer into society's future, we – you and I, and our government – must avoid the impulse to live only for today, plundering for our own ease and convenience the precious resources of tomorrow. We cannot mortgage the material assets of our grandchildren without risking the loss also of their political and spiritual heritage.”*
65. Yet this is exactly what we continue to do, ‘on steroids’. At this point in human history, with multiple planetary boundaries already breached and others on or nearing the brink, we need rapidly to rethink our collective role and responsibilities here on Earth. Industrial-scale mining of the seabed is not consistent with those aspirations, and certainly not in the present location.
66. The application, including material recently filed by TTRL, does not fulfil the Information Principles of the EEZ Act, nor does it align with the New Zealand Coastal Policy Statement (2010) and Coastal Plan for Taranaki (2023). The application poses significant risk to an Area of Outstanding Natural Character, and to a little-known reef system more generally. The broader region hosts globally significant diversity of marine mammals and seabirds, increasingly threatened by climate and ocean disruption.
67. Indeed, given the weight of evidence, TTRL’s recent material reads increasingly as special pleading.
68. In CJT’s considered view, the Decision Making Committee must favour caution and environmental protection, and decline this application.

¹ <https://climatejusticetaranaki.wordpress.com/>

² <https://climatejusticetaranaki.files.wordpress.com/2013/03/cjt-submission-to-epa-on-ttr-seabed-mining-oct2016-full.pdf> and <https://climatejusticetaranaki.files.wordpress.com/2013/03/cjt-presentation-ttr-hearing-statement-full-7mar17.pdf>

³ https://dc.niwa.co.nz/niwa_dc/srv/api/records/efa4d0c1-ffe5-3540-36ca-e8085a768fdf

⁴ <https://www.trc.govt.nz/assets/2238-TRC002-FINAL-Offshore-subtidal-rocky-reef-habitats-on-Patea-Bank-South-Taranaki-2.pdf>

⁵ <https://keaforum.nz/t/nz-backs-moratorium-on-deep-sea-mining-expert-reaction/2089>

⁶ <https://www.marinemammalhabitat.org/immas/>

⁷ <https://www.cbd.int/convention/articles/?a=cbd-08>

⁸ <https://environment.govt.nz/publications/our-marine-environment-2022/>

⁹ https://www.ipcc.ch/site/assets/uploads/sites/3/2022/03/07_SROCC_Ch05_FINAL.pdf

¹⁰ Lees AC, Pimm SL (2015) Species, extinct before we know them? *Current Biology* 25: R177-180.

<https://doi.org/10.1016/j.cub.2014.12.017>

¹¹ EXPERT EVIDENCE OF PHILIP HUNTER MITCHELL ON BEHALF OF TRANS TASMAN RESOURCES LIMITED PLANNING 19 MAY 2023

¹² <https://www.marinemammalhabitat.org/immas/>

¹³ EXPERT EVIDENCE OF SIMON JOHN CHILDHOUSE ON BEHALF OF TRANS TASMAN RESOURCES LIMITED 19 MAY 2023

¹⁴ EXPERT EVIDENCE OF DR ALISON MACDIARMID ON BEHALF OF TRANS TASMAN RESOURCES LIMITED 19 MAY 2023

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- ¹⁵ EXPERT EVIDENCE OF DR DAVID THOMPSON ON BEHALF OF TRANS TASMAN RESOURCES LIMITED 19 MAY 2023
- ¹⁶ <https://pacific.scoop.co.nz/2023/05/seabed-mining-around-aotearoa-expert-qa/>
- ¹⁷ EXPERT EVIDENCE OF HELEN SKYE MACDONALD ON BEHALF OF TRANS TASMAN RESOURCES LIMITED 19 MAY 2023
- ¹⁸ Kendall S, Nouwen S (2013) Representational practices at the International Criminal Court: The gap between juridified and abstract victimhood. *Law and Contemporary Problems* 76 *The Practices of the International Criminal Court*, pp. 235-262.
- ¹⁹ <https://www.goodreads.com/work/quotes/254630-i-candidate-for-governor-and-how-i-got-licked>
- ²⁰ Pinkerton, M. (2014) Predicting the effects of iron sand mining on optical properties of the South Taranaki Bight. Expert evidence for Taranaki iron sand mining application, Environment Court. <https://www.epa.govt.nz/assets/FileAPI/proposal/EEZ000004/Evidence/c8fd9eb306/EEZ000004-Matt-Pinkerton-Optical-properties-18-March.pdf>
- ²¹ <https://www.trc.govt.nz/council/plans-and-reports/strategy-policy-and-plans/regional-coastal-plan/coastal-plan-for-taranaki-2023/>
- ²² <https://www.rnz.co.nz/news/political/489658/bid-to-ban-deep-sea-mining-defeated-our-community-don-t-want-it-the-public-doesn-t-want-it>
- ²³ <https://climatejusticetaranaki.wordpress.com/2011/10/10/media-release-oil-spill-spells-time-for-change/>
- ²⁴ <https://climatejusticetaranaki.wordpress.com/2015/02/23/media-release-omv-oil-spill-time-to-plug-their-well/>
- ²⁵ <https://www.teaomaori.news/ngati-ruanui-and-taranaki-iwi-back-anti-seabed-mining-bill-despite-labour-snob>
- ²⁶ <https://www.rnz.co.nz/news/national/323444/maori-oppose-taranaki-sand-mining>
- ²⁷ Rockström J, Gupta J, Qin D, et al. (2023) Safe and just Earth system boundaries. *Nature*. <https://doi.org/10.1038/s41586-023-06083-8>, Richardson K, Steffan W, Lucht W, et al. (2023) Earth beyond six of nine planetary boundaries. *Sci Adv* 9: eadh2458. <https://doi.org/10.1126/sciadv.adh2458>
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- ²⁹ Marx K (1857) *Grundrisse*, p336. Vintage, New York <https://www.marxists.org/archive/marx/works/1857/grundrisse/>
- ³⁰ Eisenhower DD (1961) Farewell Address. [https://en.wikisource.org/wiki/Eisenhower%27s_farewell_address_\(audio_transcript\)](https://en.wikisource.org/wiki/Eisenhower%27s_farewell_address_(audio_transcript)). Accessed 20th May 2023