

BEFORE THE ENVIRONMENTAL PROTECTION AUTHORITY

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

AND

IN THE MATTER of an Application for Marine Dumping
Consent by Coastal Resources Limited

JOINT STATEMENT OF EXPERTS IN THE FIELD OF MARINE MAMMALS

Dated 21 November 2018

INTRODUCTION

1. A facilitated meeting of the marine mammal experts took place in person on Monday 19 November 2018.
2. The meeting was attended by:
 - a) Dr Simon Childerhouse, on behalf of Applicant
 - b) Prof Andrew Jeffs, on behalf of Auckland Conservation Board
 - c) Chris Simmons, ChanceryGreen, facilitator

CODE OF CONDUCT

3. We confirm that we have read the Environment Court's Code of Conduct as set out in its Practice Note 2014 and agree to comply with it. We confirm that the issues addressed in this Joint Statement are within our area of expertise.

SCOPE OF STATEMENT

4. In the meeting we discussed the issues relevant to the Applications which arise within our field of expertise. Prior to attending the meeting we each read the relevant parts of the application, the evidence and independent reports prepared by the other expert(s) and circulated.
5. We also considered the questions from the Decision-making Committee ("DMC") in its document dated 14 November 2018. Those questions are:
 - a) What is the likely presence of marine mammals in the NDA and within close vicinity?
 - b) What is the likely presence of marine mammals along the barges travel route(s) to the NDA?
 - c) What are the risks to marine mammals from the dumping activity?
 - d) Is the current acoustic monitoring methodology undertaken protective of marine mammals?
 - e) What are effective monitoring methodologies and conditions considering the noise generated by the activity and the likelihood of dumping during the hours of darkness?
6. In relation to each issue we discussed points of agreement and disagreement in relation to:
 - a) Facts;
 - b) Assumptions
 - c) Areas of uncertainty
 - d) Expert opinions
7. In Attachment A to this Joint Statement we report in table format the outcome of our discussions in relation to each issue by reference to points of agreement and

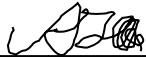
disagreement relating to facts, assumptions, uncertainties and expert opinions. Attachment A is grouped according to questions (a)-(e) by the DMC. We have noted where each of us is relying on the opinion or advice of other experts. Where we are not agreed in relation to any issue, we have set out the nature and basis of that disagreement.

8. We have also considered the draft marine consent conditions proposed by the Applicant and have considered whether they are appropriate having regard to our opinions, should the Environmental Protection Authority grant the consents sought by the Applicant. We have also considered whether other conditions could be developed that would address our concerns should consent be granted.

DATE: 21 NOVEMBER 2018



Dr Simon Childerhouse



Prof Andrew Jeffs

Attachment A: Outcome of facilitated meeting in table format

Attendees: Prof Andrew Jeffs, Dr Simon Childerhouse, Chris Simmons (Facilitator)

Location: ChanceryGreen Offices, Auckland

Date and Time: 19 November 2018, 9:00am start

	Statement	Agree/disagree	Notes
DMC Question A – Likely presence of marine mammals in NDA			
1	There is little specific information available about marine mammal presence, abundance or usage of the proposed Northern Disposal Area (NDA) except for a single report of dolphins in the NDA.	Agree	
2	The only source of specific information available about the NDA comes from limited observations (visual and acoustic) undertaken during ongoing operations in the area but these are primarily limited to night time operations (e.g. when dumping normally occurs). Therefore, these observations don't provide much useful information about marine mammals in the area given limitations in how they were collected (e.g. visual observations at night time, acoustic detections with high background noise).	Agree	
3	We are unable to provide specific advice about what marine mammals occur in the NDA given a lack of marine mammal survey work in the area and therefore can only advise on what may be there given what is known about marine mammals in the wider region.	Agree	
4	There is some information available about the area immediately around the NDA (e.g. MacDonald et al. 2016) and in the wider region including the Hauraki Gulf (e.g. DOC Marine Mammal Sighting and Stranding database). Given the lack of specific information about the NDA, it is useful to review information about the wider area to provide data that may be useful in describing marine mammals in the NDA. Overall, the wider region represents an important habitat for marine mammals with at least 33 different species present in the area including six threatened species and six species which are known to be resident. The Hauraki Gulf is an area of international significance for marine mammals.	Agree	
5	While information about marine mammals in the wider region provides useful information about what species may occur inside the NDA, it is important to note that the proposed consent area occupies an area of approximately 7km ² .	Agree	

DMC Question B – Likely presence of marine mammals along barge travel route			
6	There is a recorded high abundance of marine mammal observations within the Hauraki Gulf and the barges will travel through the Hauraki Gulf to the disposal site. A map showing the likely transit routes in relation to marine mammal sightings would be useful. It is recommended the DMC request a map overlaying the various proposed barge travel routes on the recorded marine mammal observation locations.	Agree	
DMC Question C – Risks to marine mammals from dumping activity			
7	Ecological impacts (e.g. impacts on marine mammal prey) from the dumping of spoil and the resulting sediment plume are possible from the proposed activity. Subject to ongoing discussions between the marine ecologists on this issue, given that more than 200,000m ³ of spoil has already been deposited in exactly the same area under an existing and ongoing consent, in our view the benthic environment is already modified and therefore it probably does not represent unique or rare feeding habitat for marine mammals. Furthermore, given that the deposition of sediment will be restricted to the area of the NDA, impacts are unlikely outside the area from sedimentation.	Agree	
8	Toxicity and the bioaccumulation of toxins in the spoil material is possible. There is a proposed condition that spoil will be tested prior to disposal, results reported to EPA for approval prior to dumping and that the physical nature and contaminants of the sediment must conform with the standards proscribed in the ANZECC ISQG guidelines. We support this condition. The standards are outside our area of expertise, but we note that marine mammals are susceptible to accumulation of dioxins, PCBs and pesticides, including DDT. It would be useful for the marine ecologists to provide comment on how the standards apply to these toxins. Given these proposed conditions on spoil quality, and that sediment is likely to remain within the NDA, the risk of impact on marine mammals or their prey is likely to be low.	Agree	
9	Vessel strike is possible during transit and dumping but the risk of vessel strike is low given the low frequency of tug and barge movements (i.e. maximum of two dumps per day). If there is a vessel strike, then any resulting injuries are likely to be minor due to the slower speed of the tug and barge of ~7-10 knots. Barge transits should be required to be undertaken in accordance with the <i>Ports of Auckland Ltd Hauraki Gulf Transit protocol for commercial shipping</i> which recommends vessels transit the area at a maximum of 10 knots.	Agree	
10	Entanglement with the towline is not expected to be an issue for marine mammals and is assessed as a negligible risk.	Agree	

11	Marine mammals may be injured or possibly even killed if they are directly under the barge during release of the spoil. The release of spoil takes approximately 1-2 minutes to complete and, as the barge doors slowly open, increasing amounts of material is released until the full load is released. Given the short exposure time (i.e. 1-2 minutes every trip) and that spoil release starts off slowly, the risk of marine mammals being under the barge and remaining while the spoil is release is very low.	Agree	
12	Marine mammals are known to be sensitive to underwater noise with known impacts ranging from significant changes in foraging and other behaviour, temporary and permanent damage to hearing, displacement from an area, masking of communication, and even death. Sound generated from vessels and industrial activities at sea travels significant distances underwater and can affect marine mammals at some considerable distances.	Agree	
13	The transit of vessels will result in a significant amount of additional underwater noise being introduced into the Hauraki Gulf. Other significant existing sources of noise from other vessel movements occur in the Hauraki Gulf.	Agree	
14	There is no specific information available about the underwater sound output from the vessels to be used in this operation. The sound output level is critical to an assessment of the likely impacts on marine mammals.	Agree	Dr Jeffs has provided overseas studies that suggest levels of between 170-190 dB have been recorded for tugs towing barges. Dr Childerhouse requires some time to review this information provided by Dr Jeffs.
15	The USA Government NOAA threshold for behavioural disruption, permanent hearing loss (PTS) and temporary hearing loss (TTS) to marine mammals ¹ resulting from exposure to underwater sound is widely used as a standard for the assessment of acoustic effects on marine mammals. There is no equivalent level mandated in New Zealand. In the absence of any New Zealand framework, we agree that this is the most appropriate standard to use for the evaluation of potential acoustic impacts on marine mammals.	Agree	

¹ https://www.westcoast.fisheries.noaa.gov/protected_species/marine_mammals/threshold_guidance.html

	We expect the source level of the operational vessels to exceed the NOAA threshold for behavioural disruption, and may exceed the threshold for TTS, although the exact distance over which this occurs will depend on the loudness of the vessel(s).		
DMC Questions D and E – Monitoring methodologies and conditions			
16	It is agreed that the current monitoring regime is ineffective. Overall, the proposed visual monitoring is likely to have a low-moderate detection rate during the day and very low detection rate at night. Overall the proposed acoustic detection is likely to have a low detection rate at any time.	Agree	
17	<p>It is agreed that the risk of marine mammal strike during both transit and dumping is low. There is little or no value in undertaking the visual monitoring as proposed by the Applicant, as it would be ineffective in reducing risk to marine mammals.</p> <p>Instead, it is recommended that the visual monitoring programme adopt the following measures:</p> <ol style="list-style-type: none"> a. There is limited value in undertaking visual observations during night time hours. b. Notwithstanding the lack of efficacy of visual observations at night, a trained observer should be on watch at all times during transit and dumping. c. Whenever practicable, transit and dumping be carried out during daylight hours. <p>There are some further potential improvements that could be made to the visual monitoring programme, such as: (i) locating the observers closer to the barge prior to spoil release, (ii) increasing the number of observers, (iii) increasing the training of observers. However given the low risk to marine mammals from vessel strike and during dumping activity these are probably not warranted.</p>	Agree	
18	<p>It is agreed that there is little or no value in undertaking the acoustic monitoring for marine mammals as proposed by the Applicant, as it would be ineffective in reducing risk to marine mammals.</p> <p>There is no way to easily improve the monitoring system without significant expenditure and expertise. These include: (i) using a marine mammal detection programme (e.g. PAMGUARD) which could allow detection of species vocalising outside the range of human hearing although this would require need acoustic gear and comprehensive training, or (ii) using a free floating or fixed hydrophone system (e.g. drop or permanently moor a sonar</p>	Agree	

	<p>buoy at the dump site, steam away or shut down while listening to the hydrophone and return after 30 minutes and dump).</p> <p>Given the existing risks from vessel strike and during dumping, we do not believe these more sophisticated systems are warranted.</p>		
19	<p>Proposed Condition 14 in the Evidence of Mr Hay² <i>“Visual and acoustic detection for marine mammals is to be undertaken (by an appropriately trained crew-member) for at least 30 minutes immediately prior to any disposal activity. A written record of the period in which the detection was undertaken, marine mammals detected, method of detection, personnel undertaking detection, confirmation that the personnel has the required training, and general weather conditions shall be prepared and along with any acoustic recordings undertaken shall be made available to the EPA upon request. Marine mammal data will be summarised in the monitoring report required under Condition 9.”</i> This Condition is an improvement over the original proposed but still has some significant gaps.</p> <p>We suggest the condition be rewritten as follows:</p> <p><i>“Visual detection for marine mammals is to be undertaken (by an appropriately trained crew-member) during all transits and any disposal activity. In the event a marine mammal is sighted within 250 metres of the vessel(s) immediately prior to disposal, then disposal activity shall immediately cease until all marine mammals are seen to move out of the area, or have not been sighted for 30 minutes. In the event that a marine mammal is sighted during transit, the vessel(s) shall follow the requirements of the Marine Mammals Protection Regulations 1992. A written record of the period in which the detection was undertaken, identity and number of marine mammals detected, method of detection, any actions taken, personnel undertaking detection, confirmation that the personnel has the required training, and general weather conditions shall be prepared and shall be made available to the EPA upon request or at least annually.”</i></p>	Agree	
20	<p>We consider the most likely risk to marine mammals posed by this operation is acoustic disturbance as a result of noise generated by the vessels, both during transit and dumping.</p>	Agree	

² Statement of Expert Evidence of David Neilson Hay for Coastal Resources Limited. Dated 25 October 2018. Available at: <https://www.epa.govt.nz/assets/FileAPI/proposal/EEZ100015/Evidence-Applicants-evidence/CRL-Hay-Evidence-Planning-and-Conditions-25-10-18-EEZ100015.pdf>

	<p>The best means to control this risk is to utilise vessels with low noise output, as guided by NOAA acoustic thresholds of likely impacts to marine mammals. Alternatively, all risk to marine mammals would be eliminated by disposing of dredged material to land.</p>		
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