

**BEFORE THE HEARING COMMISSIONERS
NAPIER**

IN THE MATTER

of the Resource Management Act 1991
(the Act)

AND

IN THE MATTER

of applications by Port of Napier Limited
to undertake wharf expansion,
associated capital and maintenance
dredging, disposal of dredged material
within the coastal marine area, and
occupation of the coastal marine area
for existing port activities and the
proposed new wharf

STATEMENT OF EVIDENCE OF DR DEANNA CLEMENT

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INTRODUCTION

Qualifications and experience

1. My name is Deanna Clement. I am a marine ecologist at Cawthron Institute. I hold the degrees of Bachelor of Arts (Biology) from the University of Nebraska – Lincoln, Master of Science from the Florida Institute of Technology, and Doctor of Philosophy in zoology and marine science from the University of Otago.
2. I am a marine scientist specialising in marine mammal ecology. I currently work as a marine mammal ecologist at the Cawthron Institute (Cawthron), in Nelson. I have held this position for nine years with my work focussing primarily on assessing the effects of various anthropogenic coastal projects on New Zealand marine mammals. Prior to this, I worked in the University of Otago's Zoology Department as a teaching fellow while continuing to undertake research on various marine mammal species.
3. I have now worked as a marine mammal scientist for 20 years in New Zealand and the United States. My primary expertise is in spatio-temporal modelling of marine mammal distribution and density patterns while assessing species' habitat preference and behavioural patterns in relation to environmental influences. In addition, I have written a variety of impact assessments and designed several resource consent monitoring studies.
4. I was the lead scientist and co-author for the recent three-year aerial survey of Hector's dolphin commissioned by the Ministry for Primary Industries and Department of Conservation to update its population abundance and distribution around the South Island. The survey was the most intensive marine aerial survey ever conducted in New Zealand. The results of this work received a landmark endorsement from the International Whaling Committee (IWC) at its annual meeting in June 2016.
5. I have authored (and co-authored) several publications and articles for both academia and the public and private sectors. Most of my recent publications are assessment of environmental effect reports for government and commercial industries.

6. Since joining Cawthron, I have prepared and presented evidence for several Environment Court hearings. This has included:
 - (a) On behalf of Refining New Zealand Ltd for consent to deepening the Whangarei Harbour entrance and approaches (Crude Shipping Project), March 2018
 - (b) On behalf of Lyttleton Port Company Ltd for consent of Te Awaparahi Bay Reclamation Project, September and October 2017
 - (c) On behalf of Lyttleton Port Company Ltd for consent of Capital Dredging Project, June 2017
 - (d) On behalf of Admiralty Bay Consortium (2016) in its appeal against the Marlborough District Council for marine farm extensions,
 - (e) On behalf of R J Davidson Family Trust (2015) in its appeal against the Marlborough District Council for a marine farm extension in Beatrix Bay, Marlborough Sounds, and
 - (f) On behalf of The Astrolabe Community Trust (2015) for consent to abandon the wreck of the MV Rena and for any future discharge of contaminants from the wreck.

Involvement in project

7. I wrote the assessment of effects report on marine mammals, which was included in Port of Napier Limited's (PONL) application for resource consents to undertake capital dredging to deepen its existing approach channel to the Port and to establish a new berth (No.6 Berth) to accommodate deeper draft vessels (the Proposed Wharf and Dredging Project). The report was provided as Appendix I in Volume 3 of the application documentation.
8. I am familiar with the site that is the subject of the application ("Proposal") and the surrounding locality. I have read the relevant parts of: the application material; submissions; and the Section 42A Report.

Expert Witness Code of Conduct

9. I have been provided with a copy of the Code of Conduct for Expert Witnesses contained in the Environment Court's

Practice Note dated 1 December 2014. I have read and agree to comply with that Code. This evidence is within my area of expertise, except where I state that I am relying upon the specified evidence of another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

Purpose and scope of evidence

10. The purpose of this evidence is to summarise any potential effects on marine mammals from the proposed capital dredging of the approach channel to Port of Napier, as well as the necessary disposal of dredge spoil and berth construction activities. My evidence:
 - (a) summarises the existing environment in terms of those marine mammal species most susceptible to any effects of the Proposal,
 - (b) categorises any potential impacts in terms of their possible scale, duration/persistence, likelihood and possible consequences; based on other relevant assessment of effects reports (e.g. underwater noise, ecology, spoil disposal modelling), and
 - (c) comments on proposed conditions of consent with respect to proposed mitigation and monitoring recommendations.

SUMMARY OF CONCLUSIONS REACHED IN MY REPORT

11. Out of the 25 marine mammal species that have been sighted, or recorded stranded within Hawke Bay waters, only four species regularly or seasonally frequent the inshore waters of the bay. These species include New Zealand fur seals, common dolphins and orca as well as southern right whales, which potentially use these waters as winter nursery habitats.
12. Other species considered include offshore, deep-water species (such as pygmy sperm whales, pilot whales, and several species of beaked whales) as they can be acoustically more sensitive relative to marine mammal species with more inshore ranges.
13. Despite the lack of any long-term and spatially-explicit baseline research on marine mammals in the region, the potential risks to these species can still be assessed based on the species' life-history dynamics (e.g. species-specific

sensitivities, conservation listing, life-span, main prey sources) gathered within New Zealand (e.g. local and national databases, New Zealand Threat Classification System, NABIS) and internationally (e.g. peer-reviewed journals, IUCN Red List of Threatened Species).

14. Based on the available data, and in reference to both Section 6(c) of the Resource Management Act (RMA) and Policy 11 of the New Zealand Coastal Policy Statement (NZCPS), Hawke Bay coastal waters are not considered more ecologically significant in terms of feeding, resting or breeding habitats for any species relative to other regions along the North Island's south-eastern and central coastlines. Instead Hawke Bay waters represent a small proportion of similar habitats available throughout nearby regions; noting that most species' normal ranges extend across hundreds to thousands of kilometres. A qualified exception is made for the southern right whales and their temporary use of these waters as potential winter nursery habitats.
15. The direct effects of dredging and construction activities considered most relevant to marine mammal species in the Hawke Bay region include: potential vessel strikes, increased underwater noise production (particularly pile driving) and possibly the risk of entanglement. While these effects have the greatest potential consequences (i.e. injury or death), the actual likelihoods of them occurring in this case are *low* and overall, I am of the opinion that the effects are deemed *de minimis*¹ with recommended mitigation actions in place² (see my Report, Table 3 and paragraph 17).
16. Indirect effects of dredging and disposal activities on marine mammals may result from physical changes to the habitat itself that adversely affect the health of the local ecosystem and/or impinge on important prey resources. Given the location and habitats associated with the dredging proposal, the review of possible indirect effects to the ecosystem focused on: quality of spoil sediments, ecological effects to benthos and associated fish assemblages, and the effects of resultant turbidity plumes. Overall, indirect effects from project activities will be temporary and are not

¹ The effect is too small to be discernible or of concern= Negligible

² This conclusion takes into consideration the performance anomaly found in the acoustic recording equipment used to determine ambient underwater noise levels as noted and discussed further in C Fitzgerald evidence paragraph 22.

expected, in my opinion, to be detrimental for local or visiting marine mammals in the region.

17. I have proposed several mitigations actions in Table 3 of my Report that are focused on further minimising the potential for rare events, such as vessel strike, to occur to as near to zero as possible while increasing an animal's chances of survival in the extremely unlikely event that one did occur. I also recommended several simple, simultaneous monitoring actions based on the collection of information to improve understanding of how marine mammals respond to these activities, rather than testing of specific predictions of effect.
18. I have reviewed and support the proposed conditions for marine mammals included in the application in regard to capital dredging, disposal and construction activities. These conditions (namely general condition 6 – Marine Wildlife Management Plan and section 26.2 – Construction Noise Management Plan) incorporate the mitigation measures and best management practice for marine mammals that I recommended in my report in Table 3 to avoid or minimise any relevant direct effects on local marine mammals.
19. These conditions establish and develop a Marine Wildlife Management Plan (MWMP; see condition 6), the aim of which is to avoid or minimise the potential for adverse effects on marine mammals and birds. It subsequently includes monitoring and reporting requirements in agreement with my Table 3 recommendations.
20. The proposed Construction Noise Management Plan (CNMP; see section 26.2 – Conditions specific to Application 1, conditions 7-8) will be incorporated into the overall Construction Management Plan (CMP) and seek to minimise potential adverse noise effects on marine mammals including consideration of noise reduction methods and visual monitoring during pile-driving activities.

RESPONSE TO MATTERS RAISED IN SECTION 42A REPORT

21. The section 42A report does not raise any issues related to adverse effects on marine mammals resulting from the Proposal. The draft conditions include those recommended in my Report.

RESPONSE TO MATTERS RAISED IN SUBMISSIONS

22. No submitters have raised matters related to adverse effects on marine mammals resulting from the Proposal.

CONCLUSIONS AND RECOMMENDATIONS

23. The marine mammals most likely affected by the Proposal include the few species that frequent the inshore waters of Hawke Bay year-round or on a semi-regular basis. These species include NZ fur seals, common dolphins, orca and southern right whales.
24. In light of the potential direct and indirect effects highlighted in my Report, the overall risk of significant adverse effects on these species arising from the proposed Wharf and Dredging Project are very unlikely to occur, and overall such effects will be, in my opinion, *de minimis* or negligible when considered with the proposed mitigation actions.
25. I am comfortable that these measures provide an appropriate level of protection to the marine mammals that could frequent Hawke Bay waters while the Proposal is underway.



Dr Deanna Clement

2 August 2018