

**BEFORE THE WHANGAREI DISTRICT COUNCIL AND NORTHLAND REGIONAL
COUNCIL**

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of a resource consent application by Northport
Limited under section 88 of the Resource
Management 1991 for a port expansion project
at Marsden Point

APPLICATION NO. APP.005055.38.01

LU 2200107

STATEMENT OF REBUTTAL EVIDENCE OF LEIGH SANDRA BULL

COASTAL AVIFAUNA

3 October 2023

INTRODUCTION

Qualifications and experience

1. My name is Leigh Sandra Bull.
2. I am a Senior Ecologist and Director of BlueGreen Ecology Ltd. I hold the qualifications of Bachelor of Science (Zoology), Masters of Science with Honours (Ecology) and PhD (Ecology) from Victoria University of Wellington.
3. My skills and experience are as set out in my evidence in chief (EIC).
4. I have read the expert witness Code of Conduct for Expert Witnesses and have complied with this Code in the preparation of my further evidence.
5. I attended the avifauna and planning expert conferencing (20 September 2023) and was a party to the resulting joint witness statement.
6. This statement of rebuttal evidence relates to the topic of coastal avifauna ecology.
7. The brief of evidence is presented by way of:
 - (a) Rebuttal to parts of the evidence of Dr Beauchamp appearing for the Department of Conservation, namely:
 - (i) The data and method used to undertake the avifauna assessment; and
 - (ii) The proposed high tide roost.
 - (b) Points arising out of the avifauna and planning expert conferencing JWS.
8. I note that the issues recorded in the Avifauna and Planning JWS were in relation to the level of impact and the high tide roost. However, as noted in the JWS, there was insufficient time during the expert conferencing session to complete the record of the wide-ranging discussion. There was also insufficient time to review the relevant proposed conditions.
9. As such, in this rebuttal evidence I have addressed what are the key / material issues, but this does not mean that I agree with the position of those experts in all other respects that were not recorded.

Assessment data and method

10. The assessment of effects on coastal avifauna was prepared using the following:

- (a) Site specific data collected over multiple tides, seasons, and years to account for temporal variability in species assemblage, abundance, and behaviours.
 - (b) The Environmental Institute of Australia and New Zealand's (EIANZ) Ecological Impact Assessment Guidelines for New Zealand. These guidelines were developed to provide an objective and transparent framework for assessing potential effects based on the threat status of the species (ecological value) and the severity of potential effects (magnitude of effect).
 - (c) A determination of the magnitude of effect at scale of the wider Whangarei Harbour; that being the coastline and harbour waters to the west of a line drawn from Busby Head in the north to Ruakaka Estuary in the south (refer to Map 1). This scale was deemed appropriate based on the habitat types within that area, and the way the species being assessed use those habitats. This was also consistent with the "system-wide approach" required by Policy D.2.18(5) of the proposed Northland Regional Plan.
11. An independent technical peer review of the coastal avifauna assessment was undertaken by Professor John Craig. A copy of Mr Craig's report is attached as **Appendix 1**.
 12. Dr Beauchamp has raised concerns about the data and method used to undertake the assessment. Dr Beauchamp states in paragraph 39 that "*When considering wader data, one must be careful to select the data that most likely represents the best estimate of a population at the time of the year because the numbers of many species change seasonally.*"
 13. In terms of population data, in the Section 2.3 (Data Constraints) of the assessment I identified and outlined the inherent difficulty in obtaining such data, stating that "*...these estimates should be viewed in the context of relative scales, not exact numbers.*" Furthermore, I used the species population estimates for Whangarei Harbour provided in the most recent publication¹ for the numbers of waders in various harbours around New Zealand between 2005-2019. That information was available in a scientific peer-reviewed journal, and as such I believe it an appropriate source on which to base my assessment.
 14. While I agree with Dr Beauchamp that species numbers can change seasonally, and hence the reason why data was collected during different seasons for this project (refer

¹ Riegen & Sagar (2020). Distribution and numbers of waders in New Zealand, 2005-2019. *Notornis* 67: 591-634

to paragraph 10(a) above), I disagree that “*one must be careful to select the data that most likely represents the best estimate of a population at the time of the year*”. Given it is not yet known what time of year the birds may be exposed to each of the potential effects, I have taken a conservative approach whereby I have assessed the potential effects on the maximum number of birds that may be exposed to the activity. For instance, being an international migrant, bar-tailed godwits are more abundant in New Zealand during the summer compared to the winter. Riegen & Sagar (2020) reported the mean summer and winter counts in the Whangarei Harbour to be 2,738 and 254 birds respectively. As such, when determining the magnitude of effect on bar-tailed godwit, I used a population estimate of ~2,800 birds.

15. Dr Beauchamp does not agree with the scale at which I assessed the effects on variable oystercatcher (VOC) and New Zealand dotterel. At paragraph 24 he states “*I do not consider it appropriate to take a harbour-wide approach to assessing effects on New Zealand dotterel and VOC. I consider that the populations of both species in Marsden Bay should be considered as not frequently exchanging with other populations in the harbour*”.
16. The matter of scale is often a point of disagreement amongst ecological experts. In accordance with direction in Policy D.2.18(5) of the proposed Northland Regional Plan, I have carefully considered, and applied the appropriate ‘system-wide’ scale to my Northport assessment and I believe harbour-wide is the appropriate scale to assess the effects of the proposal on coastal avifauna. I note that the matter of scale was discussed in the Expert Consenting Panel’s decision for the Te Ara Tupua shared pathway in Wellington – a matter I was involved in for the applicant. In that decision, it was acknowledged that the Wellington Harbour was an appropriate scale at which to undertake an assessment of effects on marine and coastal avifauna ecology. While I accept that each application should be determined according to its particular factual context, I consider the Te Ara Tupua decision reinforces my approach to this issue.

High tide roost creation

17. Both Dr Beauchamp and Ms Webb do not agree with my premise that the installation of a high tide roost before the construction of the proposed reclamation constitutes an avoidance measure.
18. As outlined in paragraph 42 of my EIC, the Moderate level of effect from permanent habitat loss on New Zealand dotterel and variable oystercatcher is associated with the permanent loss of high tide habitat, the proportion of the local populations utilising the high tide roost area, and the relative scarcity of such habitat in the wider Whangarei

Harbour. Thus, the purpose of the proposed high tide roost creation was to address this effect. It is my opinion that by constructing a nearby high tide roost prior to the reclamation construction, this provides those birds currently roosting there an alternative location to roost. I note that is the creation of the high tide roost prior to the commencement of the construction works, that in my opinion enables it to be viewed as an avoidance measure in relation to the loss of roosting habitat. This would not be the case if it was constructed after the commencement of construction.

19. Dr Beauchamp raises concerns around the impacts of the proposal on lesser knot (paragraphs 61-66), stating that “*There was no assessments of the impacts on both the placement of the roost site...*”. This is not correct. Section 6.7 of the avifauna assessment assessed this potential effect, including on lesser knot. This species was considered throughout the entire assessment, using the data collected and assessing the effects in the context of the Whangarei Harbour population estimates provided by Riegen & Sagar (2020)¹.
20. The location of the high tide roost was an issue discussed in the avifauna and planning expert conferencing. The rationale for the proposed location was provided in Section 6.7.1 of the avifauna assessment, and included the following:
 - (a) Being reasonably close to the area lost;
 - (b) Be independent from the existing shoreline during high tide to provide separation from human and dog disturbance;
 - (c) The avoidance of a cockle bed; and
 - (d) An appropriate offset from the hightide shoreline and coastal wetland.
21. For these reasons, I remain of the opinion that the proposed high tide roost is the most appropriate avoidance measure, and that with the provision of the high tide roost the potential effects on species that forage in the intertidal area are as per my assessment.
22. I again refer to the recent Te Ara Tupua shared path in Wellington. In that application, I proposed a similar approach, which was widely accepted, including in the decision. For that project, the construction of offshore habitats (in the form of boulder piles) for the purpose of providing a nearby alternate roost habitat for coastal birds was required prior to impacting existing roost habitat. Further, these offshore habitats have recently been completed and were immediately used (even prior to the completion of their construction) by coastal species, including variable oystercatcher. Photos of these offshore habitats and species using them are provided in **Appendix 2**.

Degradation of food supply and foraging through construction & maintenance dredging

23. Ms Webb correctly identifies that the potential effects of maintenance dredging was not discussed in the coastal avifauna assessment, only construction (capital) dredging. She raises concerns² that *“Effects arising from maintenance dredging campaigns are likely to re-mobilise sediment in a similar manner to construction during those campaigns. The low levels of ecological effect are therefore uncertain and is highly dependent on the implementation of a suitable methodology.”*
24. As noted in the Application for resource consents for the expansion of Northport, Northport currently holds capital and maintenance dredging consents associated with Berths 1-4; these consents enable dredging to a depth ranging between 13m and 14.5m. Figure 67 of the Application (copied below) identifies the area of these existing consents as denoted by the purple dashed line, and the proposed dredging extent as shown with a red line.

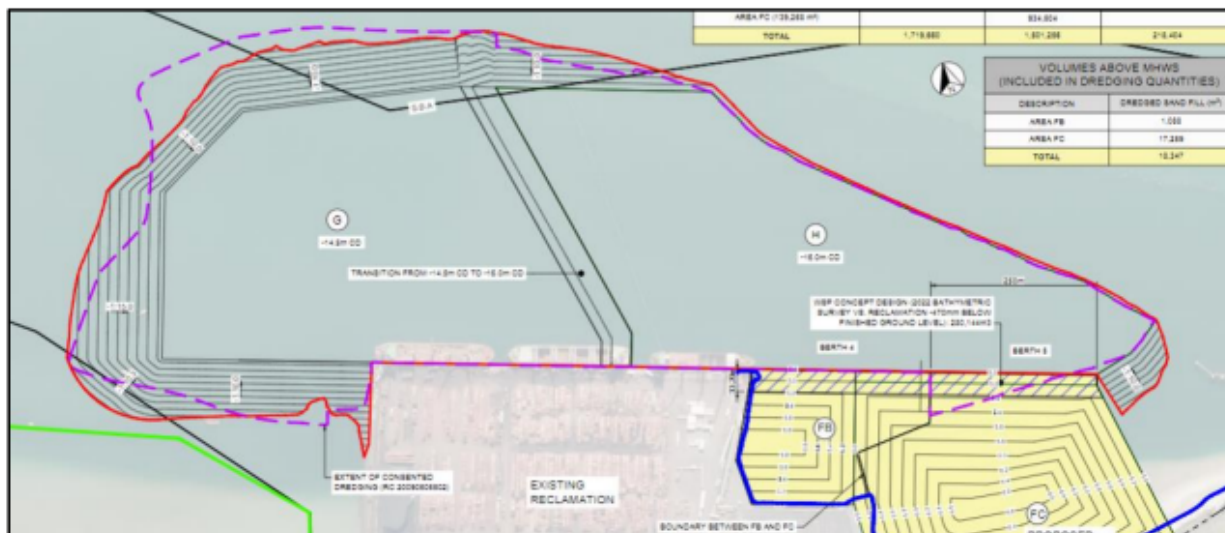


Figure 67: Existing consented dredging extent

25. Based on the very minor difference in the extent of the existing vs proposed areas of dredging, I did not foresee any additional effects that may arise from the maintenance dredging than currently exists. However, I acknowledge that this was not made explicit in my assessment.

Compounding foraging habitat impacts within Marsden Bay

26. Ms Webb raises concerns that impact on foraging habitat loss (direct and indirect) for a range of shorebird species is underestimated because:
- (a) Direct and indirect effects were assessed separately.

² Page 8 of the Technical Memo – Coastal Avifauna, dated 27/07/23.

- (b) Individually these result in low adverse impacts however, in combination, the magnitude of foraging loss/alteration is higher than reported and may well meet the threshold for effects management.
 - (c) Assessment pertains only to species identified within footprint.
- 27. The activities that Ms Webb believes contribute to compounding foraging habitat disturbance / loss are:
 - (a) Eastern reclamation direct and indirect habitat loss (~9ha).
 - (b) Increased pressure on western bay from displaced birds.
 - (c) Creation of new high-tide roost within western bay (~0.4ha) caused by direct loss of intertidal habitat beneath footprint and indirectly through alteration of coastal processes resulting in mangrove expansion.
- 28. I have considered these effects, but don't consider them to be compounding. For instance, as noted in assessment of the effects of permanent habitat loss, I determined the overall level of effect on relevant species was primarily governed by what sampling has shown to be abundant food supply available on the western side of Northport to accommodate displaced birds (refer to paragraph 41 of my EIC). This was also the premise behind my assessment of the area of habitat to be lost beneath the high tide roost footprint (refer to paragraph 72 of my EIC).
- 29. It has also been suggested that there may be effects on the surrounding / nearby feeding habitat associated with the likely frequency and volume of 'top ups' to the high-tide roost. For instance, at paragraph 19 of his EIC Mr West states "*The spread of material could potentially cause adverse effects to biota through changes in seabed height or changes in sediment grains size composition*".
- 30. I note that Mr Reinen-Hamill (Northport's coastal process expert) assessed that the sandbank and its maintenance would result in minimal coastal process effects. Based on Mr Reinen-Hamill's assessment I do not believe this will result in a material effect for avifauna.
- 31. Nevertheless, the proposed marine ecology intertidal monitoring (conditions 168 and 169) will cover the area of concern, and as such would detect any changes in avifauna food supply. As outlined in Mr Reinen-Hamill's rebuttal evidence, if an effect were to arise, there are options for re-designing and maintaining the sandbank to further minimise transport of material.

Cumulative Effects

32. As noted by Ms Webb, the scope of the cumulative effects assessment has been a topic of ongoing discussion.
33. Ms Webb is of the opinion that the RMA definition of cumulative effects includes all other activities that affect shorebird populations, and that these extend beyond present and foreseeable consented projects.
34. On this point we remain in disagreement, and my interpretation and assessment of cumulative effects on coastal avifauna for the project are as outlined in my EIC.

Leigh Sandra Bull
BlueGreen Ecology Ltd

3 October 2023

APPENDIX 1 – Peer review report of John Craig

Report on Coastal Avifauna Assessment for Northport Eastern Expansion

Summary

This is a very thorough assessment that uses the EIANZ framework to determine that effects will be low to very low for all bird species. The report relies on a number of counts of birds at differing tides and in different months to determine species likely to be affected. It considers all potential effects and recommends solutions. Construction of a new high tide roosting habitat is recommended as compensation for the loss of roosting habitat on the beach that will be lost to the development.

Methods

The Environmental Institute of Australia and New Zealand (EIANZ) has developed an objective framework for assessing potential effects based on the threat status of the species (ecological value) and the severity of potential effects (magnitude of effect). The framework was recently updated and has been used throughout this report. Effects are assessed at the level of the Ecological district as required by the Regional Policy Statement. Comments on national and local effects are included. Bird numbers are related to surveys of food availability as a way of ranking the relative value of feeding areas.

Specifics

The port expansion will result in the loss of some feeding and roosting habitat. The area is not the best food area for the birds and is only one of the potential roosting areas.

There is mention of “roosts”, roosting habitat and roosting area which can be confusing for non-ornithologists. A bird roost is an area of habitat used for roosting but it is rarely used at all times and weathers. Birds move to areas suitable for roosting so the loss of a roosting area can readily be compensated for by construction or clearing or protection of another area nearby.

The only other omission from the report is the acknowledgement that the adjacent “tank farm” run by Channel Infrastructure is probably the largest concentration of New Zealand dotterel breeding pairs. 26 pairs breed there every year. The association of such a concentration of a bird classified as *Threatened – nationally Increasing* shows that the presence of human structures including wharves is not a deterrent to many bird species. Having an area fenced to exclude cats, dogs and mustelids provides a safe haven and it is likely that the port will add to this especially if pest control is included.

A minor point that may be picked up by opponents is the size of populations of NZ birds. Banded dotterel have been estimated as less than 20,000 in the Threat status report of 2016 but my estimate (Craig & Mitchell 2021)¹ is between 35,000 and 45,000. A key point from Riegen & Sagar (2020) is that this species is increasing by 25% in the North Island. This minor correction will not change current conclusions, however.

John L Craig

¹ Craig, JL & Mitchell, ND. 2021. Measuring conservation status in New Zealand birds: re-evaluating banded dotterel and black-fronted tern as case studies. *Notornis* 68: 147-160.

APPENDIX 2 – Te Ara Tupua offshore habitats

The second image shows the offshore habitat being used by a variable oystercatcher (circled in red)



