

**IN THE ENVIRONMENT COURT OF NEW ZEALAND
AUCKLAND REGISTRY**

**I TE KŌTI TAIAO O AOTEAROA
TĀMAKI MAKĀURAU ROHE**

IN THE MATTER of the Resource Management Act 1991

AND of an appeal under clause 14 of Schedule 1 of the Act

BETWEEN **NEW ZEALAND REFINING COMPANY LIMITED**
**MANGAWHAI HARBOUR RESTORATION SOCIETY
INCORPORATED**
TOP ENERGY LIMITED
**ROYAL FOREST AND BIRD PROTECTION SOCIETY
OF NEW ZEALAND INCORPORATED**
CEP SERVICES MATAUWHI LIMITED
MINISTER OF CONSERVATION

**VINCENT CARLYLE KERR REBUTTAL EVIDENCE
MARINE ECOLOGIST
TOPIC 11: BIODIVERSITY AND OUTSTANDING NATURAL
FEATURES/LANDSCAPES
6 NOVEMBER 2020**

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FEDERATED FARMERS OF NEW ZEALAND

TRANSPower NEW ZEALAND LIMITED

NORTHPOWER LIMITED

Appellants

AND

NORTHLAND REGIONAL COUNCIL

Respondent

Introduction, qualifications and experience

1. My name is Vincent Carlyle Kerr. My qualifications and experience are set out in my evidence in chief, dated 2 October 2020.

Code of conduct

2. I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2014 and agree to comply with it. The contents of this statement are within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed in this statement.

Scope of evidence

3. This statement responds to the evidence provided by:
 - a. Ms Lisette Collins, ecologist for CEP Services Matauwhi Limited (**CEP Services**) and Royal Forest and Bird Protection Society of New Zealand (**Forest and Bird**), dated 16 October 2020; and
 - b. Dr Robert Bellingham, ecologist for CEP Services, dated 16 October 2020.
4. This statement is structured as follows:
 - a. Response to Ms Collin's evidence in chief; and
 - b. Response to Dr Bellingham's evidence in chief.
 - c. Conclusion.

Ms Collins

5. Ms Collins' evidence for CEP Services and Forest and Bird addresses her assessment of seventeen sites of high natural character against the Northland RPS Appendix 5 significance criteria. I addressed her assessment at a high level in my evidence in chief, so do not repeat that here. However, I address some detailed aspects of Ms Collins' evidence below.

Ms Collins' response to my evidence in chief

6. At pages 13 - 16 Ms Collins' responds to points I raised in my evidence and says that:

- a. I did not provide adequate reasons for not further investigating the 16 sites that she considers are, are potentially, or are likely, significant;¹ and
 - b. it is problematic that avifauna were excluded from the SEA assessments.²
7. In response:
- a. In my evidence in chief, I explained the process we undertook in mapping the current SEA areas and offered explanations as to why within this context I have not recommended the addition of the areas CEP Services' is pursuing as SEAs, other than Uruti Bay. In preparing the original SEA and SBA mapping, I spent considerable time reviewing the information available and preparing advice for Council. In response to the evidence in chief provided by Ms Collins and Dr Bellingham for CEP Services, I have completed another review in light of their material. I provide further comment on the issues of difference in the following sections.
 - b. Regarding the substance of evidence provided by Ms Collins, I want to again state that I take no issue with the useful discussion on how natural character criteria can guide assessment of marine SEAs. I also take no issue with the various assessment information presented that describes the riparian and terrestrial values associated with the areas in question. A key point that Ms Collins repeatedly makes is that all these areas have some degree of connectivity between the riparian and wetland areas and the marine components of salt marsh and mangrove. I again do not dispute or criticise the information presented, but I maintain my opinion that the areas other than Uruti Bay do not meet the Appendix 5 criteria.
 - c. I did not state that the areas proposed should not be further investigated. I have instead stated that the present SEA map layer is a starting point for the mapping of marine ecological values.

¹ Evidence in chief of Ms Collins, page 13 at [30].

² Evidence in chief of Ms Collins, page 16 at [40].

Further information in terms of ecology of species and communities, hydrology information and mapping at finer scales will all contribute to a finer resolution view of the mapping process in the future, and we may well change how we interpret the application of the Appendix 5 criteria.

- d. Regarding the separation of SBAs and SEAs, I agree that from an ecological perspective a case can be made that this approach is problematic as the obvious reality on the ground is that these components are in fact part of a bigger ecological unit ('the estuary') and are constantly interacting. This limitation of our approach does need to be taken into account when considering the implementation of policy and controls. On the positive side of this balance, separating the values into two layers does allow us to be more specific about spatial extents of the species and values where detailed information was available, allowing an 'overlay' view of two set of values.

Assessment of mangrove and saltmarsh components

8. I would like to comment further on the assessment of salt marsh and mangrove areas addressed by Ms Collins. Again I stress that I am not saying that the evidence presented by CEP Services is wrong, I am saying that the assessment approaches taken between Ms Collins and I are different and can lead to a different result.
9. Saltmarsh was not mapped as part of our SEA mapping process. In our brief we were told that salt marsh would be mapped as part of the wetland mapping process and would be 'protected' by default via policy and rules. This does not mean that the riparian values/salt marsh/mangrove continuum of habitats was not assessed under the Appendix 5 criteria. It was assessed and had some influence on how the evaluation of mangrove areas were done. There are areas in the mangrove/saltmarsh complex where the saltmarsh is the dominant ecological feature in terms of spatial area, and the mangroves are occurring in a thin band or are sparse with predominantly juvenile trees dominating. In these cases, according to our design brief, the salt marsh was to be mapped separately and was therefore recognised in terms of protection. The mangrove

component was seen as a minor component, and if was not supported by other marine values or other criteria it was not considered high ranking.

10. In the evaluations presented by Ms Collins there is an interpretation of the criteria used where, if the mangrove saltmarsh riparian values were present, the Appendix 5 criteria (1)(a), (1)(b) and (3)(c) were triggered. This was applied to various riparian catchment conditions and scales. It is possible to use the criteria in this way and to argue that these ecological connections and values are important and important at all scales. In the future a better resourced finer scale mapping program could indeed apply a similar approach and interpretation. The end result would certainly be more areas included in SEAs.
11. I do not want to criticise this approach as it can be supported on ecological grounds. I simply want to say it is not the only approach and interpretation that is possible, and is not the one we used. I will turn now to specific sites CEP has assessed to illustrate how we arrived at a different interpretation.

Ms Collins' 6 sites that meet the significance criteria

12. In Ms Collins' opinion, six of the seventeen mapped sites of High Natural Character that she assessed meet the Appendix 5 criteria. I agree that Uruti Bay Wetland meets the Appendix 5 criteria. The remaining five sites in question include Orongo Bay, Te Whahapu, Pipiroa/Okaito and mid Waikare (Frenchman's swamp). These are small embayments in the Russel/Waikare Inlet part of the Bay of Islands. The argument for the importance of the salt marsh/riparian connectivity is well stated for each of these areas. If this is taken as an absolute trigger of ecological significance then these areas should be SEAs, or at least the salt marsh/mangrove component. This could be a future result if we took this approach and evaluated all embayments of this size in this way.
13. However, in our approach to developing the Proposed Plan's SEAs, we evaluated estuaries at a larger scale and as a whole where possible. We looked for the evidence of marine values. We assessed mangrove components in terms of them being significant examples of their type (Appendix 5 criteria (1)(a)) which did have a size component, and we used the context that there needed to be evidence of associated marine values. In the case of these five areas, none of these areas are extensive in area and we did not have evidence of high marine values in the non-mangrove

marine components. There is also very high silt loads affecting these areas which is a negative factor.

Ms Collins' 9 sites reviewed in Appendix 3

14. In attachment 3 of Ms Collins' evidence in chief, there are nine sites that are assessed as probably or possibly significant. I will first address Takou Bay as this site is quite different from the rest. Takou Bay is a small East Coast estuary with a small area of mangrove, salt marsh and tidal flats with some adjoining native vegetation. If we were to drill down in scale, there is an argument that there are marine values in this site and further restoration potential. This site might warrant further fine-scale evaluation in the future, but based on our assessment (which was larger scale), we concluded that the site did not meet the Appendix 5 criteria. I maintain that view at this time.
15. The other eight sites are: Upper Mangonui Harbor, Ota Pt, Whangaroa, Kawakawa River, Omanaia River, Waima River, Whangape Harbour and Northeast Te Puna Inlet. All of these sites have some similar characteristics and all have experienced significant siltation effects from land development. They do however have areas of bush and regenerating scrub. These terrestrial values, along with the connectivity of salt marsh and mangrove areas, are documented in the information provided by Ms Collins. In some cases the salt marsh component is extensive and the mangrove area less extensive, and in some the reverse is the case. If presence alone of the riparian values/salt marsh/mangrove components is judged to trigger either of the criteria, Ms Collins assessed that they could be SEAs.
16. When the SEA mapping was undertaken, the salt marsh component was not assessed as we understood that it was being dealt with via another mapping process. In the case of larger areas, we assessed the overall estuary or estuary arm in the context of the other marine information we could obtain. The evaluation of the mangrove component was assessed in relation to size, quality and the overall values of the riparian connections. As a result, none of these eight areas were mapped as SEAs.
17. If the interpretation put forward by Ms Collins were adopted at some future time, it would result in some or all of these areas being classified as SEAs,

along with a number of other areas in Northland not currently mapped as SEAs in our approach.

Dr Bellingham

18. Dr Bellingham's evidence for CEP Services addresses his assessment of six sites in the Hokianga Harbour against the Northland RPS Appendix 5 significance criteria. I address aspects of Dr Bellingham's evidence below.

Survey work

19. Dr Bellingham's evidence provides an overview of survey work he has undertaken in the Hokianga Harbour over several decades. I take no issue with that evidence as his findings are generally consistent with my own experience and work in the Hokianga Harbour.
20. I consider that Dr Bellingham's report (which summarises bird and vegetation data), along with his recent mapping and further analysis of the 1980's survey data, is a useful addition to our knowledge of the Hokianga Harbour. It is helpful to have Dr Bellingham's expert opinion on the importance of and the habitats and bird values, and their present state. In 2015-2016, we essentially had raw data in the form of field reports that was preserved in the Department of Conservations' Protected Natural Areas files. The data presented to us now certainly gives a more comprehensive picture of the bird values in relation to the estuarine areas of the Hokianga Harbour.

Division of SEA and SBA layers

21. In his evidence in chief, Dr Bellingham questions our approach to divide the SEA evaluation into a bird layer and a marine layer. He presents his ecological arguments in a context where bird values are evaluated in conjunction with marine habitat values. While I do not challenge the basic ecological assertion that these estuarine bird species, estuarine habitats and vegetation are part of the whole ecosystem, I have explained in my evidence in chief why we split these values into two information layers (the bird layer and the marine values layer).
22. I will comment now on Dr Bellingham's proposal in this context in terms of the SBA layer and the SEA marine values layer.

Hokianga Harbour assessment

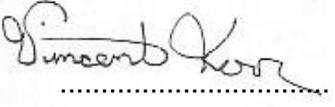
23. Dr Bellingham concludes that six reaches of the Hokianga Harbour meet Appendix 5 criteria, being:
- a. Mangamuka River;
 - b. Waihou Orira Rivers;
 - c. Takehe River;
 - d. Motuti-Panguru; and
 - e. Whirinaki-Oue Rivers.
24. In terms of the SBA layer for the Hokianga Harbour, I support the inclusion of the six reaches proposed by Dr Bellingham in the Proposed Plan. Three of the major arms of the Harbour are already SBAs; these additions therefore add the minor arms and the tidal flats as indicated in the maps provided in Dr Bellingham's report. I agree with Dr Bellingham that these mud flats are important to the migratory group of birds that visit Northland each year. In our initial evaluation, we did not have good information of these birds and their distribution in the harbour, however I consider that this change is justified in light of the more complete and updated information that Dr Bellingham has presented.
25. In terms of the SEA layer and mapping of marine values, I take the same position as outlined in paragraphs 8(b) to 18 above in my response to Ms Collins' evidence. In our evaluation of these areas, we could not associate significant marine values with these mangrove areas or the mud flats. As explained earlier in this evidence, salt marsh areas were excluded from the assessments (as they were already protected by policy and rules) and the mangrove forests in the middle and upper arms were not assessed as highly significant because the associated marine environment is highly impacted by siltation from poor riparian management. Accordingly, I do not agree with Dr Bellingham that these six reaches meet the Appendix 5 criteria, and I do not support their inclusion in the Proposed Plan as SEAs.

Conclusion

26. Ms Collins and Dr Bellingham have raised important challenges to the Proposed Plan's current SEA and SBA mapping layers. Ms Collins and Dr Bellingham have correctly pointed to important values and

associations between terrestrial ecological components and the values that we attempted to map in Northland's diverse range of estuaries. They have also demonstrated the prime importance of the relationship between important bird species and the marine components of mangrove forests and salt marsh areas.

27. Where we differ in our approach to mapping is primarily in our decision to provide a separate SBA layer to the marine values layer, and in our attempt to logically evaluate all of Northland's diverse estuaries, coastline and shallow seas using a generalised criteria developed from terrestrial ecology. Northland is immensely diverse and there are many areas with little ecological survey information.
28. My point is that we have made a start at undertaking a comprehensive values mapping system for Northland. The points raised by Ms Collins and Dr Bellingham have highlighted some of the weaknesses of this first effort and raised questions about how we evaluate the ecological importance of mangrove forests in degraded estuaries. These are worthy questions for future consideration.



Vincent Kerr

6 November 2020

Appendix 1: Dr Bellingham's proposed SBA sites of the Hokianga Harbour

