Reply Report

Proposed Otago Regional Policy Statement 2021

10: ECO – Ecosystems and indigenous biodiversity

Melanie Hardiman

Otago Regional Council

25 May 2023

Contents

1. Introduction

1. This report forms part of a suite of reply reports that have been prepared to sit alongside and explain the "marked up" version of the final recommendations on the proposed Otago Regional Policy Statement (pORPS). The approach to the whole suite is set out in the first report in this series, *Reply Report – Chapter 1: Introduction and General Themes*. Appended to the suite of reports is a consolidated version of the pORPS containing all final recommendations from the reporting officers.

2. This report should also be read and considered in conjunction with the previous evidence provided in relation to this topic, being:

    a. The Section 42A Hearing Report, Chapter 10: ECO— Ecosystems and indigenous biodiversity (4 May 2022)

    b. Brief of Supplementary Evidence of Melanie Kate Hardiman, ECO—Ecosystems and indigenous biodiversity (11 October 2022)

    c. Brief of Second Supplementary Evidence of Melanie Kate Hardiman, Mineral Extraction (24 February 2023)

3. The Hearing for the ECO—Ecosystems and indigenous biodiversity Chapter was held over three days on the 17th to 19th of April 2023. At that time the key matters of contention, in my view, were as follows:

    a. Effects management hierarchy (in relation to indigenous biodiversity)

    b. APP2 – Significance criteria for indigenous biodiversity

    c. APP3 – Criteria for biodiversity offsetting

    d. APP4 – Criteria for biodiversity compensation

    e. Protection of taoka species and ecosystems

    f. Provision for mineral and aggregate extraction activities in ECO-P4

    g. Existing use rights in relation to ECO-P5

    h. Kāi Tahu Kaitiakitaka in relation to biodiversity management

    i. Threatened species

    j. Wilding conifers

    k. Prioritisation of montane tall tussock grasslands in ECO-M2

    l. ECO-O1 – Indigenous biodiversity

    m. Protection of trout and salmon habitat

    n. Other changes

Other minor matters when changes are recommended are also listed in the final section of this report.

4. This report does not address the following provisions because I do not consider there are any additional matters to address as a result of the hearing:

- Objectives ECO-O2, ECO-O3
- Policies ECO-P1, ECO-P7, ECO-P8, ECO-P10
- Methods ECO-M1, ECO-M4, ECO-M5, ECO-M6, ECO-M7, ECO-M8
- ECO-E1, ECO-PR1, ECO-AER1, ECO-AER2, ECO-AER3, ECO-AER4

5. My previously recommended amendments to those provisions, in addition to my amended recommendations in this report, are incorporated in the Reply Report version of the pORPS attached to this suite of reports.

2. Effects management hierarchy (in relation to indigenous biodiversity)

2.1. Introduction

6. ECO-P6 was discussed in section 10.11 of the s42A report, with my analysis in paragraphs [258] to [271]. This policy was also discussed in my brief of supplementary evidence (11 October 2022), where I recommended deleting the reference to the coastal environment, and my brief of supplementary evidence (24 February 2023), although I did not recommend any changes in the latter.

7. The recommended version of this provision currently reads:[1]

> **ECO-P6 – Maintaining indigenous *biodiversity***
>
> Maintain Otago's indigenous *biodiversity* (excluding ~~the coastal environment and~~[2] areas ~~managed~~ protected[3] under ECO-P3) by applying the following ~~*biodiversity*~~ *effects management hierarchy (in relation to indigenous biodiversity)*[4] in decision-making on applications for *resource consent* and notices of requirement:
>
> (1) avoid adverse *effects* as the first priority,
>
> (2) where adverse *effects* demonstrably cannot be completely avoided, they are remedied,
>
> (3) where adverse *effects* demonstrably cannot be completely avoided or remedied, they are mitigated,

[1] This version includes the recommendations from the hearing reports prepared under s42A of the RMA, all supplementary evidence, and the opening statements.
[2] Clause 10(2)(b)(i) - Consequential amendment arising from 00226.223 Kāi Tahu ki Otago
[3] 00230.105 Forest and Bird
[4] 00016.013 Alluvium and Stoney Creek, 0017.011 Danny Walker and Others, 00321.022 Te Waihanga

(4) where there are residual adverse *effects* after avoidance, remediation, and mitigation, then the residual adverse *effects* are offset in accordance with APP3, and

(5) if *biodiversity* offsetting of residual adverse *effects* is not possible, then:

(a) the residual adverse *effects* are compensated for in accordance with APP4, and

(b) if the residual adverse *effects* cannot be compensated for in accordance with APP4, the activity is avoided.

2.2. Submissions and evidence

8. Various parties seek to align ECO-P6 with the NPSFM effects management hierarchy.[5]

9. Mr Bathgate for Kāi Tahu ki Otago considers an alternative approach for managing indigenous biodiversity on Māori land is required. He suggests either:

a. Adding the following new clause to ECO-P6:

In assessing, adverse effects in the implementation of this policy, have particular regard to the mahika kai practices of mana whenua'

b. Or including a new ECO policy that provides a framework for alternative approaches to effects management in lower order plans, as follows:

Recognise the rakatirataka of Kāi Tahu over native reserves and Māori land and enable mana whenua to lead approaches on how adverse effects on indigenous biodiversity in these areas are managed.

10. In his legal submissions for Oceana Gold, Mr Christensen supports the relief sought by his client to remove the effects management hierarchy in ECO-P6 and amend the provision, as follows:[6]

ECO-P6 – Maintaining indigenous *biodiversity*

Maintain Otago's indigenous *biodiversity* (excluding ~~the coastal environment and~~[7] areas ~~managed~~ protected[8] under ECO-P3) by applying the ~~following~~ ~~*biodiversity*~~ *effects management hierarchy (in relation to indigenous biodiversity)*[9] in decision-making on applications for *resource consent* and notices of requirement~~:~~

For the purposes of this policy, if indigenous biodiversity offsetting or indigenous biodiversity compensation is applied, the applicant must demonstrate that appropriate regard has been had to the principles in APP3 or APP4.

~~(1) avoid adverse *effects* as the first priority,~~

[5] Letitcia Jarrett for Waka Kotahi, para [7.4]; Carmen Taylor for Ravensdown, para [6.1]-[6.10]
[6] Mark Christensen for Oceana Gold, para [107]
[7] Clause 10(2)(b)(i) - Consequential amendment arising from 00226.223 Kāi Tahu ki Otago
[8] 00230.105 Forest and Bird
[9] 00016.013 Alluvium and Stoney Creek, 0017.011 Danny Walker and Others, 00321.022 Te Waihanga

~~(2) where adverse *effects* demonstrably cannot be completely avoided, they are remedied,~~

~~(3) where adverse *effects* demonstrably cannot be completely avoided or remedied, they are mitigated,~~

~~(4) where there are residual adverse *effects* after avoidance, remediation, and mitigation, then the residual adverse *effects* are offset in accordance with APP3, and~~

~~(5) if *biodiversity* offsetting of residual adverse *effects* is not possible, then:~~

~~(a) the residual adverse *effects* are compensated for in accordance with APP4, and~~

~~(b) if the residual adverse *effects* cannot be compensated for in accordance with APP4, the activity is avoided.~~

11. Mr Christensen submits that ECO-P6 should adopt the NPSFM Exposure Draft 2022[10] approach towards offsetting and compensation which requires an applicant only to demonstrate that appropriate regard has been had to offsetting and compensation principles.[11]

12. He submits that the definition of 'effects management hierarchy' in the pORPS should be amended to reflect the NPSFM effects management hierarchy and apply to freshwater, wetlands and terrestrial biodiversity, as follows:[12]

> Effects Management Hierarchy
>
> in relation to natural inland wetlands, and rivers, and indigenous biodiversity, means an approach to managing the adverse effects of an activity on the extent or values of a wetland or river, and on indigenous biodiversity values, (including cumulative effects and loss of potential value) that requires that:
>
> (a) adverse effects are avoided where practicable; then
>
> (b) where adverse effects cannot be avoided, they are minimised where practicable; then
>
> (c) where adverse effects cannot be minimised, they are remedied where practicable; then
>
> (d) where more than minor residual adverse effects cannot be avoided, minimised, or remedied, aquatic offsetting or biodiversity offsetting (whichever is relevant) is provided where practicable; then
>
> (e) if aquatic offsetting or biodiversity offsetting (whichever is relevant) is not appropriate or practicable, aquatic compensation or biodiversity compensation (whichever is relevant) is provided; then

[10] Clause 3.22(3) 2022 Exposure Draft
[11] Summary of evidence of Mark Christensen for Oceana Gold, para [3]
[12] Mark Christensen for Oceana Gold, para [83]

(f) if aquatic compensation or biodiversity compensation (whichever is relevant) is not appropriate, the activity itself is avoided. For the purposes of this definition, if aquatic or biodiversity offsetting or aquatic or biodiversity compensation is applied, the applicant must demonstrate that appropriate regard has been had to the principles in APP3 or APP4.

13. He also submits that the following two new definitions should be included to support his suggested amendments to ECO-P6, as follows:[13]

a. **(Terrestrial) Biodiversity Offset:** means a measurable conservation outcome resulting from actions that are intended to: (a) redress any more than minor residual adverse effects on indigenous biodiversity after all appropriate avoidance, minimisation, and remediation, measures have been sequentially applied; and (b) achieve a net gain, in the quantity and/or condition of indigenous biodiversity. where net gain means that the measurable positive effects of actions exceed the point of no net loss.

b. **(Terrestrial) Biodiversity Compensation:** means a conservation outcome resulting from actions that are intended to compensate for any more than minor residual adverse effects on indigenous biodiversity after all appropriate avoidance, minimisation, remediation, and biodiversity offset measures have been sequentially applied.

14. Mr Brass for DOC proposes the criteria for biodiversity offsetting and compensation be moved to the beginning of ECO-P6.[14]

2.3. Analysis

15. The purpose of the effects management hierarchy in ECO-P6 is to maintain indigenous biodiversity by ensuring proposed activities, which might impact indigenous biodiversity, are designed to achieve good environmental outcomes with adverse effects appropriately managed. The NPSFM effects management hierarchy applies far more broadly than just biodiversity, it applies to the loss of extent or values of rivers and natural inland wetlands. The suite of values listed in the definition of 'loss of value' includes hydrological functioning, Māori freshwater values, amenity values, any value identified through the NOF process, as well as indigenous biodiversity.

16. Furthermore, the NPSFM uses the term 'where practicable' in relation to avoiding, remedying and mitigating. I consider in the context of maintaining indigenous biodiversity the inclusion of 'where practicable' in clauses (1) to (3) of ECO-P6 could result in additional loss of indigenous biodiversity compared to the notified provision.

17. The NPSFM effects management hierarchy uses the term 'minimise' instead of 'mitigate'. I understand that 'avoid' means 'not allow', 'remedy' means to 'put back' (a form of rehabilitation) and 'mitigate' means to 'reduce the impact' (which might include, for

[13] Mark Christensen for Oceana Gold, para [79]-[94]
[14] Murray Brass for DOC, para [190]

example, rehabilitating part of a site as a package or mitigation measures). 'Minimising' adverse effects could be achieved by either remedying or mitigating. In my opinion, requiring remediation before progressing to mitigation is appropriate because it is a more stringent requirement than mitigation (which aims to reduce the impact but not necessarily full rehabilitation in the way that would make it remediation). I have sought ecological advice from Dr Lloyd regarding the difference between 'minimise' and 'mitigate' when applied in an indigenous biodiversity effects management hierarchy. Dr Lloyd's advice is that term 'mitigate' can include both minimisation and rehabilitation. For the above reasons discussed in paragraphs 15 to 17, I do not recommend aligning the effects management hierarchy in ECO-P6 with the effects management hierarchy in the NSPFM.

18. Under the NPSFM effects management hierarchy offsetting or compensation is available for more than minor residual adverse effects. Following, Dr Lloyd's response[15] to Chair Crosby's question regarding why offsetting should be required for all residual effects rather than only significant residual effects, I have reconsidered my position on the matter. I consider it appropriate to amend 'residual adverse effects' to 'more than minor residual adverse effects'. This is consistent with national direction in the NPSFM and the E draft NPSIB also.

19. I do not support adopting Mr Christensen's suggested amendment to align ECO-P6 with the NPSFM Exposure Draft 2022 regarding offsetting and compensation. The adopted approach in clause 3.22(3) of the NPSFM is different to the Exposure Draft NPSFM 2022 version. The key difference between these two versions is that clause 3.22(3) of the NPSFM requires an applicant to comply with principles 1 to 6 in Appendix 6 and 7, and have regard to the remaining principles in Appendix 6 and 7, as appropriate. Clause 3.22(3) of the Exposure Draft NPSFM (Mr Christensen's suggested approach) only requires an applicant to demonstrate that appropriate regard has been had to the offsetting and compensation principles. This framework is far weaker than the criteria in APP3 and APP4 and the approach adopted in the NPSFM. I consider the offsetting and compensation criteria need to be compulsory for them to be purposeful, for instance the criteria under APP3(1) stating when offsetting is not appropriate.

20. At paragraph 12 of my opening statement, I address Mr Bathgate's evidence supporting inclusion of a new clause in ECO-P6 for having particular regard to the mahika kai practices of mana whenua. I still consider the suggested clause does not fit within the scope of the provision because ECO-P6 is a process policy and is very specific, while the clause sought relates to mahika kai practices. However, I note that in relation to the MW chapter Mr Adams has accepted Ms McIntyre's recommendation to amend MW-M5(2) to include '<u>recognise Kāi Tahu rakatirataka over this land by enabling mana whenua to lead approaches to manage any adverse effects of such use on the environment.'</u> The pORPS is an integrated document and must be read as a whole, as directed by IM-P1. Therefore, I consider the new amendment to MW-M5(2) satisfies Mr Bathgate's concern

[15] Response to Minute 12: Chair Ron Crosby's Questions to Dr Lloyd, Question 1

and so I do not recommend including a new clause into ECO-P6 or his suggested new ECO policy.

21. Ecological advice from Dr Lloyd is that Mr Brass's suggestion to have the criteria from APP3(1) and APP4(1) moved into a policy, particularly if it was in a standalone policy would be more effective.[16] While Dr Lloyd agrees there is merit in the amendment sought, there is no scope to make this amendment.

22. Since the Hearing I have reconsidered my position on the amendment sought by QDLC to clarify ECO-P6's application to plan change processes. To address this, I recommend including 'plan change' in the chapeau of ECO-P6. I recommend consequential amendments to ECO-M2(4) to also include reference to 'plan change' for consistency.

2.4. Final recommendation

23. I recommend the following amendments to ECO-P6:

ECO-P6 – Maintaining indigenous *biodiversity*

Outside the coastal environment, ~~M~~maintain[17] Otago's indigenous *biodiversity* (excluding ~~the coastal *environment* and~~[18] areas ~~managed~~ protected[19] under ECO-P3) by applying the following ~~*biodiversity*~~ *effects management hierarchy (in relation to indigenous biodiversity)*[20] in decision-making on applications for *resource consent*, plan change[21] and notices of requirement:

(1) avoid adverse *effects* as the first priority,

(2) where adverse *effects* demonstrably cannot be completely avoided, they are remedied,

(3) where adverse *effects* demonstrably cannot be completely avoided or remedied, they are mitigated,

(4) where there are more than minor[22] residual adverse *effects* after avoidance, remediation, and mitigation, then the residual adverse *effects* are offset in accordance with APP3, and

(5) if *biodiversity* offsetting of more than minor[23] residual adverse *effects* is not possible, then:

[16] Appendix 1, para [2]
[17] Clause (10(2)(b)(i), Schedule 1, RMA – consequential amendment arising from 00301.028 Port Otago
[18] Clause 10(2)(b)(i) - Consequential amendment arising from 00226.223 Kāi Tahu ki Otago
[19] 00230.105 Forest and Bird
[20] 00016.013 Alluvium and Stoney Creek, 0017.011 Danny Walker and Others, 00321.022 Te Waihanga
[21] 00138.036 Queenstown Lakes District Council
[22] 00307.014 Christchurch International Airport Limited (CIAL)
[23] 00307.014 Christchurch International Airport Limited (CIAL)

(a) ~~the~~ those[24] residual adverse *effects* are compensated for in accordance with APP4, and

(b) if ~~the~~ those[25] residual adverse *effects* cannot be compensated for in accordance with APP4, the activity is avoided.

24. In terms of a S32AA analysis, I consider the recommended amendment to include 'plan changes' to the chapeau provides greater effectiveness through clarifying that the effects management hierarchy applies to plan changes.

25. The addition of the words "more than minor" is a clarity amendment to make it clear that an activity is not required to be avoided if only minor effects remain after applying the effects management hierarchy. The amendment does not impact on the policy achieving its objective. The amendment improves the efficiency and effectiveness of the policy by making its intended meaning clearer.

3. APP2 – Significance criteria for indigenous *biodiversity*

3.1. Introduction

26. APP2 was discussed in section 10.28 of the s42A report, with my analysis in paragraphs [538] to [551].

27. The recommended version of this provision currently reads:[26]

APP2 – Significance criteria for indigenous *biodiversity*

An area is considered to be a *significant natural area* if it meets any one or more of the criteria below:

Representativeness (a) An area that is an example of an indigenous vegetation type or habitat that is typical or characteristic of the ~~original~~ pre-human natural diversity of the relevant ecological district[27] or coastal marine biogeographic region. ~~This may include *degraded* degraded[28] examples of their type or represent all that remains of indigenous vegetation and habitats of indigenous fauna in some areas~~. This can include degraded examples

[24] 00307.014 Christchurch International Airport Limited (CIAL)
[25] 00307.014 Christchurch International Airport Limited (CIAL)
[26] This version includes the recommendations from the hearing reports prepared under s42A of the RMA, all supplementary evidence, and the opening statements.
[27] McEwen, W Medium (ed), 1987. Ecological regions and districts of New Zealand. Wellington: Department of Conservation (new footnote attributed to 00138.027 QLDC)
[28] 00137.008 DOC

where they are some of the best remaining examples of their type.

(b) ~~An indigenous marine ecosystem (including both intertidal and sub-tidal habitats, and including both faunal and floral assemblages) that makes up part of at least 10% of the natural extent of each of Otago's original marine ecosystem types and reflecting the environmental gradients of the region.~~[29]

(c) An indigenous marine ecosystem, or habitat of indigenous marine fauna (including both intertidal and sub-tidal habitats, and including both faunal and floral components), that is characteristic or typical of the natural marine ecosystem diversity of Otago.

Rarity

(d) An area that supports:

(i) An indigenous species that is ~~t~~Threatened[30], ~~or uncommon~~, or an important population of species that is[31] ~~a~~At ~~*risk* r~~Risk,[32] or uncommon~~,~~ nationally or within an ecological district[33] or coastal marine biogeographic region, or

(ii) Indigenous vegetation or habitat of indigenous fauna that has been reduced to less than 20% of its ~~former~~ pre-human extent nationally, regionally or within a relevant *land environment*, ecological district,[34] coastal marine biogeographic region or *freshwater environment* including *wetlands*, or

(iii) Indigenous vegetation and habitats within originally rare ecosystems[35]. ~~, or~~

~~(iv) The site contains indigenous vegetation or an indigenous species that is endemic to~~

[29] 00306.081 Meridian

[30] As defined in the New Zealand Threat Classification System

[31] 00318.020 Contact, 00122.032 Sanford, 00221.018 Silver Fern Farms, 00313.033 Queenstown Airport, 00019.005 Straterra, 00320.020 Network Waitaki, 00511.023 PowerNet

[32] Clause 16(2), Schedule 1, RMA

[33] McEwen, W Medium (ed), 1987. Ecological regions and districts of New Zealand. Wellington: Department of Conservation (new footnote attributed to 00138.027 QLDC)

[34] McEwen, W Medium (ed), 1987. Ecological regions and districts of New Zealand. Wellington: Department of Conservation (new footnote attributed to 00138.027 QLDC)

[35] As defined in Williams et al, 2007. New Zealand's historically rare terrestrial ecosystems set in a physical and physiognomic framework

~~Otago or that are at distributional limits within Otago.~~[36]

Diversity	(e)	An area that supports a high diversity of indigenous ecosystem types, indigenous *taxa* or has changes in species composition reflecting the existence of diverse natural features or gradients.
Distinctiveness	(f)	An area that supports or provides habitat for: (i) Indigenous species at their distributional limit within Otago or nationally, or (ii) Indigenous species that are endemic to the Otago region, or (iii) Indigenous vegetation or an association of indigenous species that is ~~distinctive~~, of restricted occurrence, or has developed as a result of an unusual environmental factor or combinations of factors.
Ecological context	(g)	The relationship of the area with its surroundings ~~(both within Otago and between Otago and the adjoining regions)~~, including: (i) An area that has important connectivity value allowing dispersal of indigenous flora and fauna between different areas, or (ii) An area that has an important buffering function that helps to protect the values of an adjacent area or feature of significant indigenous vegetation or significant habitat of indigenous fauna, or (iii) An area that is important for a population of indigenous fauna during ~~some~~ a critical part of their life cycle, either seasonally or permanently ~~regularly or on an irregular basis~~, e.g. for feeding, resting, nesting, breeding, spawning or refuges from predation, or (iv) A *wetland* which plays an important hydrological, biological or ecological role in the natural functioning of a *river* or coastal ecosystem.
~~**Vulnerable and sensitive species**~~[37]	~~(h)~~	~~An area that contains sensitive habitats or species that are fragile to anthropogenic effects or have slow recovery from anthropogenic effects.~~

[36] 00230.147 Royal Forest and Bird Protection Society of New Zealand Incorporated
[37] 00137.008 Director-General of Conservation

3.2. Submissions and evidence

28. A number of submitters consider the criteria in APP2 set a low threshold for identifying areas as SNAs.[38] Ms Hunter for Oceana Gold considers APP2 should be amended, so that an area is only considered a SNA if it meets the threshold for either the rarity criterion or two or more of the other criteria in APP2.[39]

29. Dr Thorsen for Oceana Gold considers the significance criteria are set too low and has concerns about the criteria being applied to freshwater and marine environments. Since the expert conferencing on APP2, he suggests new amendments to APP2, as follows:

    a. Delete Representativeness (c) because this would have the effect of making all marine ecosystems significant, including intertidal habitats.

    b. Amend Rarity (ii) to have a regional focus not a national one because a regional focus can use more accurate information.

    c. Delete Ecological context (iv) because it is redundant and captured by multiple criteria or amend to 'A wetland which pays an important hydrological role in the natural functioning of a downstream waterway or coastal ecosystem'.

30. At the hearing several submitters suggested a guidance document is required to assist ecologists with interpreting the significance criteria to ensure consistency of their application.[40] Mr McKinlay for DOC suggests the guidelines for applying the significance criteria from the Canterbury Regional Policy Statement (Canterbury RPS)[41] could be used or the Department of Conservation guidelines for assessing significant ecological values.[42] Mr Hooson for Oceana Gold also supports the use of the Canterbury RPS significance criteria guidelines, produced by Dr Lloyd.[43]

31. Mr McKinlay for DOC sought the significance criteria in APP2 be aligned with the Exposure draft NPSIB.[44]

32. Following the expert conferencing on APP2, Ms Giles for Sanford has provided a revised position on some of the criterion in APP2 as it applies in the coastal environment. While she noted that some of her concerns have been resolved, she had residual concerns with respect to the following criterion: diversity (e), distinctiveness (f)(ii) and ecological context (g)(i) –(iv).[45]

[38] Claire Hunter for Oceana Gold, para [10.4]; Kristina Mead for Fulton Hogan, para [35]; Claire Hunter for Oceana Gold, para [11.7] and Summary statement of evidence of Mike Thorsen for Oceana Gold, para [10]
[39] Summary statement of evidence of Claire Hunter for Oceana Gold, para [2.11]
[40] Summary of evidence of Scott Hooson, para [14] for Oceana Gold; Summary of evidence of Mike Thorsen for Oceana Gold, para [11]; Zoe Lunniss for DCC (oral presentation); Summary of evidence of Letitcia Jarrett forWaka Kotahi, para [5]; Summary evidence of Bruce Mckinlay, para [31]
[41] Lloyd et al. 2013. Guidelines for the application of ecological significance criteria for indigenous vegetation and habitats of indigenous fauna in Canterbury Region. Wildlands Contract Report No. 2289i June 2013.
[42] Summary of evidence of Bruce McKinlay, para [31]
[43] Summary of evidence of Scott Hooson, para [14]
[44] Summary statement of evidence of Bruce Mckinlay, para [30]
[45] Summary statement of evidence of Hilke Giles

3.3. Analysis

33. At paragraphs 16 to 18 of my opening statement, I discuss the expert conferencing on APP2 and provide suggested amendments to APP2 resulting from the expert conferencing. My position on those amendments has not changed aside from an amendment to criterion Representativeness (c), which is discussed in the following paragraph.

34. I have sought advice from Dr Lloyd on Dr Thorsen's concerns with the Representativeness criterion. Dr Lloyd's advice is that: 'the ecologists who attended expert conferencing on APP2 all agreed on a version of the Representativeness criterion (c) which specified intertidal and subtidal habitats and includes both fauna and flora components. However only one marine ecologist was present. Criterion (c) is analogous to criterion (a) but does not specify an historic baseline, and should, as without it, Dr Thorsen's concerns are valid. An appropriate baseline should be agreed among marine experts, as set out below[46]:

An indigenous marine ecosystem, or habitat of indigenous marine fauna (including both intertidal and sub-tidal habitats, and including both faunal and floral components), that is characteristic or typical of the [appropriate baseline] natural marine ecosystem diversity of Otago.

35. At the expert conferencing on APP2 all the ecologists agreed to retain the notified version of representativeness (c) and no alternative wording was provided, therefore I recommend no amendments to Representativeness (c).

36. In response to Dr Thorsen's concern with Rarity (ii), Dr Lloyd's advice is that 'APP2 allows Rarity to be evaluated at a variety of scales, including at the relevant ecological district, region or national scale. This is appropriate as regions have a part to play in the protection of nationally significant values'.[47] Based on Dr Lloyd's ecological advice, I do not recommend removing the regional scale from Rarity (ii) because the inclusion of a regional scale contributes to the protection of significant values.

37. Dr Thorsen proposes that Ecological context (iv) is deleted or amended. Dr Lloyd's advice is that 'the criterion refers to importance for biological, ecological, or hydrological reasons, whereas Dr Thorsen's suggested wording only refers to hydrology. The Ecological context (iv) criterion would likely capture only large relatively intact wetlands associated with rivers but could capture most wetlands associated with coastal lagoons and estuaries. The current wording is better as it captures the diverse ecological roles of wetlands, not just hydrological importance.'[48]

38. Based on Dr Lloyd's ecological advice, I do not support Dr Thorsen's suggested proposal to Ecological context (iv) because it only captures hydrological importance whereas the

[46] Appendix 1, para [40]
[47] Appendix 1, para [41]
[48] Appendix 1, para [42]

notified version of Ecological context (iv) refers biological and ecological importance of a wetland.

39. Following expert conferencing of ecologists and the filing of the Joint Witness Statement dated 31 March 2023, Dr Giles for Sanford produced a summary statement dated 8 May 2023 which included an update of her concerns with the proposed significance criteria as they relate to the coastal environment. Dr Thorsen for OGL also provided a summary statement of evidence dated 17 April 2023, in which he sought deletion of Representativeness criterion (c) because it could have the effect of making all marine ecosystems significant, including intertidal habitats.

40. To address the matters raised by Dr Giles and Dr Thorsen, ORC engaged a marine ecologist, Mrs Bryony Miller of e3Scientific Ltd. Mrs Miller's brief statement of evidence is attached to this reply report.[49]

41. In her evidence, Mrs Bryony Miller assesses the application of APP2 to the coastal environment in response the remaining issues with APP2 that are not resolved in the JWS, as identified by Dr Giles in her summary statement. In addition, Mrs Miller provides comment on what an appropriate baseline would be to include in the criterion representativeness (c) that Dr Thorsen seeks to delete.

42. Mrs Miller considers that Representativeness within the terrestrial environment is supported by the Ecological District Framework and/or Land Environments of New Zealand (LENZ) classification, and that similar or comparable frameworks have not been established in the marine environment. However, she considers "the principles remain valid with respect to variability in physical environmental attributes driving biodiversity. Overall, Mrs Miller considers the Representativeness (c) criterion to be an important component within APP2. However, while Mrs Miller considers more clarity on how this is assessed is required, she does not provide a suggestion for an appropriate baseline.[50]

43. Mrs Miller considers the changes Dr Giles seeks to Diversity (e) are a nuanced version of the current wording and is neutral on Dr Giles proposed amendment to this criterion.

44. Regarding the deletion of Distinctiveness (ii) proposed by Dr Giles, Mrs Miller disagrees with its deletion because 'Regional marine endemism occurs in NZ and the scale at which it occurs depends on the phyla. Locally endemic populations/ assemblages of sponges for example are known for Taranaki and Bay of Plenty regions. Scales reported range from harbours to 100-200 km of coastline. I am unaware if such endemism occurs within the Otago marine area of jurisdiction; however, I find it difficult to consider that an area which supports/provides habitat for an endemic regional (marine) population of taxa would not be significant'.[51] Based on Mrs Miller's ecological advice, I do not recommend deleting Distinctiveness (ii) because an area that supports or provides a regional marine population of taxa warrants significance.

[49] Appendix 2
[50] Statement of Evidence of Bryony Miller, para [18] to [19]
[51] Statement of Evidence of Bryony Miller, Table 1, Point 7. (Appendix 2)

45. Regarding Mr McKinlay's proposal to replace APP2 with the Exposure Draft NPSIB, Dr Lloyd's advice is that 'the E draft NPSIB contains problematic criteria. For example, the representativeness criterion for indigenous vegetation does not refer to a historic baseline. The ecologists who attended expert conferencing on APP2 all agreed that if the present-day environment were the baseline, this would make all present-day indigenous vegetation significant under the representativeness criteria, which would be much too broad.'[52] Furthermore, he states that 'the ecological context criterion in APP2 is far better at capturing significant habitats of indigenous fauna than criteria in the exposure draft NPS-IB. There is no comparable criterion in the exposure draft NPS-IB to the APP2 ecological context criterion relating to significant indigenous fauna habitat, that all the ecologists attending expert conferencing agreed on. This criterion would effectively capture important coastal and marine sites for indigenous fauna. The exposure draft NPS-IB criteria only have the potential to capture typical fauna assemblages that retain a moderate range of species in the coastal area. A flawed vegetation representativeness criterion which would capture too much, and the failure to effectively capture important indigenous fauna habitats, are key deficiencies of the exposure draft NPS-IB significance criteria set.'[53]

46. Based on Dr Lloyd's ecological advice, I do not support aligning the significance criteria in APP2 with the E draft NPSIB because some of the criteria in the E draft NPSIB are either too broad and will capture all present day indigenous vegetation, for example the criterion for representativeness, or the criteria are not targeted enough and will fail to identify important fauna habitats because the criteria only capture typical fauna assemblages that retain a moderate range of species in the coastal area.

47. Regarding Ms Hunter's proposal for increasing the threshold for classifying SNAs, Dr Lloyd's advice is that ''the one or more' approach is widely used in NZ because each criterion is different and important. So, I do not support the 'only rarity' or 'two or more' criteria approach'[54]. Ms Miller also agrees that the 'one or more' criteria is the correct approach'[55] Consequently, I do not support Ms Hunter's suggestion to increase the threshold for classifying SNAs because the current approach in APP2 is common practice in New Zealand and because each criterion is significant and so should be afforded the same level recognition.

48. With regard to the guidance document, Dr Lloyd's advice is that a guidance document focussed specifically on the APP2 criteria and using an Otago context would be more appropriate and useful than the examples Mr Hooson provided.[56] The development of a guidance document can occur outside of the pORPS as part of its implementation. Therefore, I recommend no further amendments in relation to the request for a guidance document.

[52] Appendix 1, para [39]
[53] Appendix 1, para [36] to [38]
[54] Appendix 1, para [46]
[55] Statement of Evidence of Bryony Miller, Table 1, Point 1. (Appendix 2)
[56] Appendix 1, para [39]

3.4. Final recommendation

49. My final recommended amendments to the as notified version of the PORPS are:

APP2 – Significance criteria for indigenous *biodiversity*

An area is considered to be a *significant natural area* if it meets any one or more of the criteria below:

Representativeness

(a) An area that is an example of an indigenous vegetation type or habitat that is typical or characteristic of the ~~original~~ pre-human[57] natural diversity of the relevant ecological district[58] or coastal marine biogeographic region. ~~This may include *degraded* examples of their type or represent all that remains of indigenous vegetation and habitats of indigenous fauna in some areas.~~ This can include degraded examples where they are some of the best remaining examples of their type.[59]

~~(b) An indigenous marine ecosystem (including both intertidal and sub-tidal habitats, and including both faunal and floral assemblages) that makes up part of at least 10% of the natural extent of each of Otago's original marine ecosystem types and reflecting the environmental gradients of the region.~~[60]

(c) An indigenous marine ecosystem, or habitat of indigenous marine fauna (including both intertidal and sub-tidal habitats, and including both faunal and floral components), that is characteristic or typical of the natural marine ecosystem diversity of Otago.

Rarity

(d) An area that supports:

(i) An *indigenous species* that is ~~threatened, at *risk,*~~ Threatened,[61] or an important population of species that is At Risk,[62] or uncommon nationally or within an ecological district[63] or coastal marine biogeographic region, or

(ii) *Indigenous vegetation* or habitat of indigenous fauna that has been reduced to less than 20% of its ~~former~~

[57] 00221.018 Sanford

[58] McEwen, W Medium (ed), 1987. Ecological regions and districts of New Zealand. Wellington: Department of Conservation (new footnote attributed to 00138.027 QLDC)

[59] 00221.018 Sanford Ltd

[60] 00306.081 Meridian

[61] As defined in the New Zealand Threat Classification System

[62] 00318.020 Contact, 00122.032 Sanford, 00221.018 Silver Fern Farms, 00313.033 Queenstown Airport, 00019.005 Straterra, 00320.020 Network Waitaki, 00511.023 PowerNet

[63] McEwen, W Medium (ed), 1987. Ecological regions and districts of New Zealand. Wellington: Department of Conservation (new footnote attributed to 00138.027 QLDC)

pre-human[64] extent nationally, regionally or within a relevant *land environment*, ecological district,[65] coastal marine biogeographic region or *freshwater environment* including *wetlands*, or

(iii) *Indigenous vegetation* and habitats within originally rare ecosystems~~, or~~.[66]

~~(iv) The site contains *indigenous vegetation* or an *indigenous species* that is endemic to Otago or that are at distributional limits within Otago.~~[67]

Diversity (e) An area that supports a high diversity of indigenous ecosystem types, indigenous *taxa* or has changes in species composition reflecting the existence of diverse natural features or gradients.

Distinctiveness (f) An area that supports or provides habitat for:

(i) *Indigenous species* at their distributional limit within Otago or nationally, or

(ii) *Indigenous species* that are endemic to the Otago region, or

(iii) *Indigenous vegetation* or an association of *indigenous species* that is ~~distinctive,~~[68] of restricted occurrence~~,~~ or has developed as a result of an unusual environmental factor or combinations of factors.

Ecological context (g) The relationship of the area with its surroundings ~~(both within Otago and between Otago and the adjoining regions)~~,[69] including:

(i) An area that has important connectivity value allowing dispersal of indigenous flora and fauna between different areas, or

(ii) An area that has an important buffering function that helps to protect the values of an adjacent area or feature of significant *indigenous vegetation* or significant habitat of indigenous fauna, or

(iii) An area that is important for a population of[70] indigenous fauna during ~~some~~ a critical[71] part of their life cycle, either seasonally or permanently, ~~regularly~~

[64] For example, 00221.018 Sanford Ltd.
[65] McEwen, W Medium (ed), 1987. Ecological regions and districts of New Zealand. Wellington: Department of Conservation (new footnote attributed to 00138.027 QLDC)
[66] As defined in Williams et al, 2007. New Zealand's historically rare terrestrial ecosystems set in a physical and physiognomic framework
[67] 00230.147 Forest and Bird
[68] 00221.018 Sanford
[69] 00221.018 Sanford
[70] 00221.018 Sanford
[71] 00221.018 Sanford

~~or on an irregular basis~~[72] e.g. for feeding, resting, nesting, breeding, spawning or refuges from predation, or

(iv) A *wetland* which plays an important hydrological, biological or ecological role in the natural functioning of a *river* or coastal ecosystem.

50. In terms of s32AA analysis, I consider my recommendations on APP2 will be effective and efficient at achieving ECO-O1 and ECO-O2 because they improve the implementation of the relevant policies ECO-P2 and ECO-P3 by improving the clarity, removing duplications, and deleting immeasurable and impracticable criteria in APP2. I consider that the amendments are the most appropriate to achieve the purpose of the RMA, because they assist in achieving the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna in accordance with s 6(c).

4. APP3 – Criteria for *biodiversity* offsetting

4.1. Introduction

51. APP3 was discussed in section 10.29 of the s42A report, with my analysis in paragraphs [567] to [582].

52. The recommended version of this provision currently reads:[73]

APP3 – Criteria for biodiversity offsetting

(1) Biodiversity offsetting is not available <u>for an</u>[74] ~~if the~~ activity <u>that</u>[75] will result in:

(a) the loss <u>from an ecological district</u>[76] [77] of any individuals of Threatened taxa, other than kānuka (Kunzea robusta and Kunzea serotina), under the New Zealand Threat Classification System (Townsend et al, 2008); or

[72] 00221.018 Sanford

[73] This version includes the recommendations from the hearing reports prepared under s42A of the RMA, all supplementary evidence, and the opening statements.

[74] Consequential change to 00137.158 DOC

[75] Consequential change to 00137.158 DOC

[76] <u>McEwen, W Medium (ed), 1987. Ecological regions and districts of New Zealand. Wellington: Department of Conservation</u> (new footnote attributed to 00138.027 QLDC)

[77] Consequential change to 00137.158 DOC

(b) ~~reasonably~~[78] measurable loss within an ecological district[79] to an At Risk-Declining taxon, other than manuka (Leptospermum scoparium), under the New Zealand Threat Classification System (Townsend et al, 2008); or

(c) the worsening of the conservation status of any indigenous biodiversity as listed under the New Zealand Threat Classification System (Townsend et al, 2008); or[80]

(d) the removal or loss of viability of a naturally uncommon ecosystem type that is associated with *indigenous vegetation* or habitat of indigenous fauna; or[81]

(e) the loss (including cumulative loss) of irreplaceable or vulnerable indigenous *biodiversity*.[82]

(2) Biodiversity offsetting may be ~~is~~[83] available if the following criteria are met:

(a) the offset addresses residual adverse effects that remain after implementing the sequential steps required by ECO-P6(1) to (3),

(b) the proposal demonstrates that[84] the offset can reasonably[85] achieve~~s~~[86] no net loss and preferably a net gain in indigenous biodiversity, as measured by type, amount and condition at both the impact and offset sites using an explicit loss and gain calculation,

(c) the offset is undertaken where it will result in the best ecological outcome, and is preferably ~~as the first priority be~~:[87]

(i) close to the location of the activity, and

(ii) within the same ecological district[88] ~~or coastal marine biogeographic region~~,[89]

(d) the offset is applied so that the ecological values being achieved are the same or similar to those being lost,

(e) the positive ecological outcomes of the offset endure at least as long as the impact of the activity and preferably in perpetuity,

---

[78] 00306.082 Meridian, 00139.139 DCC

[79] McEwen, W Medium (ed), 1987. Ecological regions and districts of New Zealand. Wellington: Department of Conservation (new footnote attributed to 00138.027 QLDC)

[80] 00137.158 DOC

[81] 00137.158 DOC

[82] 00137.158 DOC

[83] Consequential change to 00137.158 DOC

[84] 00137.158 DOC

[85] 00137.158 DOC

[86] 00137.158 DOC

[87] 00137.158 DOC

[88] McEwen, W Medium (ed), 1987. Ecological regions and districts of New Zealand. Wellington: Department of Conservation (new footnote attributed to 00138.027 QLDC)

[89] 00237.007 Beef & Lamb and DINZ, 00137.016 DOC, 00226.035 Kāi Tahu ki Otago, 00120.011 Yellow-eyed Penguin Trust, 00230.016 Forest and Bird

(f) the proposal demonstrates that the offset achieves biodiversity outcomes ~~beyond results~~ that are demonstrably additional to those[90] that would have occurred if the offset was not proposed, and are additional to any remediation or mitigation undertaken in relation to the adverse effects of the activity,[91]

(g) the time delay between the loss of biodiversity and the gain or maturation of the *biodiversity* outcomes of the ~~realisation of the~~ [92]offset is the least necessary to achieve the best possible outcome,

(h) the outcome of the offset is achieved within the duration of the resource consent, and

(i) any offset developed in advance of an application for *resource consent* must be shown to have been created or commenced in anticipation of the specific *effect* of the proposed activity and would not have occurred if that *effect* was not anticipated~~.~~, ~~and~~

(j) the offset accords with mātauraka Māori when taoka species are affected, and

(3) *Biodiversity* offsetting proposed in any application for *resource consent*, plan change or notice of requirement, must address all matters in APP3(2), and:

(a) use objective counts and measures wherever possible,

(b) include *high value species or vegetation types* as components,

(c) disaggregate components of *high value species and vegetation types*, so that no trade-offs between them can occur,

(d) evaluate the ecological context, including the interactions between species, habitats and ecosystems, spatial connections and ecosystem function at the impact site and offset site, and

(e) include application ~~consideration~~ of mātauraka Māori, and

(f) include a separate biodiversity offset management plan prepared in accordance with good practice and which incorporates a monitoring and evaluation regime.

[90] 00139.139 DCC
[91] 00137.158 DOC
[92] 00137.158 DOC

4.2. Submissions, evidence and analysis

53. Access to APP3 is through ECO-P6, which implements an effects management hierarchy which is directed towards attainment of the outcomes set out in ECO-O1 and ECO-O2. The effects management hierarchy in ECO-P6 sets out three steps which must be addressed before biodiversity offsetting becomes available to address the effects of an activity.

54. The first step of APP3 comprises a suite of thresholds that must be met before offsetting becomes available as an effects management option. If the activity meets the criteria under APP3(1) then biodiversity offsetting may be available provided the criteriain APP3(2) are met and all the requirements set out in APP3(3) are addressed within the application.

55. Ms Mealey for DOC has recommended various further amendments to the APP3 criteria in support of DOC's submission on APP3 (00137.158). Dr Keesing for Manawa and Contact has recommended various amendments to the APP3 criteria in support of Manawa's submission (00311.0650) and Contact's submission (00318.021). These suggested changes are outlined in the below table with ecological advice provided by Dr Lloyd.

APP3 criterion	Amendments sought (shown in red)	Reasoning	Dr Lloyd's ecological advice	Analysis	Recommendation (shown in blue)
APP3(1)(a) – Ms Mealey	(a) ~~the loss from an~~ ecological district[93] ~~[94] of any individuals of Threatened taxa, other than kānuka (Kunzea robusta and Kunzea~~	Ms Mealey considers APP3(1)(a) facilitates the skipping of offsetting in favour of compensation	Dr Lloyd's advice is that 'Ms Mealey expresses a reasonable concern that APP3(1)(a) might prevent practical offsetting outcomes. One problem with	I do not recommend deleting APP3(1)(a) because it will leave a gap regarding the protection of Threatened species. However, I do support the removal of 'of any individuals' from the criterion because as pointed	I recommend removing 'of any individual' from APP3(1)(a).

[93] McEwen, W Medium (ed), 1987. Ecological regions and districts of New Zealand. Wellington: Department of Conservation (new footnote attributed to 00138.027 QLDC)

[94] Consequential change to 00137.158 DOC

		~~serotina), under the New Zealand Threat Classification System (Townsend et al, 2008); or~~	and could lead to less certain potentially perverse outcomes for biodiversity and seeks this criterion is deleted[95].	APP3(1)(a) is that it relates to the loss of individuals rather than the loss of taxa' Dr Lloyd recommends the criterion could be amended to remove 'of any individuals' to address Ms Mealey's concerns.[96] Dr Lloyd's advice is that 'Dr Keesing expresses a similar concern to Ms Mealey, relating to APP3 (1)(a). As noted above, amending this bottom line to refer to taxa, rather than individuals would enable practical application of this criterion'.[97]	out by Ms Mealey it may incentivise an applicant to skip over offsetting in favour of more risky compensation.	
APP3(1)(a) – Dr Keesing	(a)	the loss <u>from an ecological district</u>[98] [99] of any individuals of Threatened taxa <u>where that loss affects postnatal viability of the population</u>, other than kānuka (Kunzea robusta and Kunzea serotina), under the New Zealand Threat Classification	Dr Keesing considers this criterion would prevent offsetting from being available wherever there is any *"loss"* of any individuals of threatened taxa and that. As worded, this would mean that if even one individual of a threatened taxa dies (or is			

[95] Cassie Mealey for DOC, para [38]
[96] Appendix 1, para [3]
[97] Appendix 1, para [16]
[98] <u>McEwen, W Medium (ed), 1987. Ecological regions and districts of New Zealand. Wellington: Department of Conservation</u> (new footnote attributed to 00138.027 QLDC)
[99] Consequential change to 00137.158 DOC

		System (Townsend et al, 2008); or	displaced from its ED), offsetting would not be available. He considers this does not seem like an appropriate limit for an offset and in his opinion is likely to reduce the opportunities for better ecological outcomes and so he seeks amendments to the criterion.[100]			
APP3(1)(b) – Ms Mealey	(b)	~~reasonably[101] measurable loss within an ecological district[102] to an At Risk-Declining taxon, other than manuka (Leptospermum scoparium), under the New Zealand~~	Similar to APP3(1), Ms Mealey considers APP3(1)(B) facilitates the skipping of offsetting in favour of compensation and could lead to	Dr Lloyd's advice is that 'I agree with Ms Mealey's recommendation, relating to the deletion of APP3(1)(b) At Risk taxa are not as vulnerable as Threatened taxa and are generally more widespread. For	I agree with Ms Mealey that APP3(1)(b) could enable the skipping of offsetting in favour of compensation. Dr Lloyd agrees with Ms Mealey that At Risk species should be dealt with by robust offsetting, rather than risker compensation. APP3(3) requires measures and	I recommend to delete APP3(1)(b)

[100] Vaughan Keesing for Manawa, [9.11] – [9.12]
[101] 00306.082 Meridian, 00139.139 DCC
[102] McEwen, W Medium (ed), 1987. Ecological regions and districts of New Zealand. Wellington: Department of Conservation (new footnote attributed to 00138.027 QLDC)

		~~Threat Classification System (Townsend et al, 2008); or~~	less certain potentially perverse outcomes for biodiversity and seeks this criterion is deleted[103].	example, matagouri (Discaria toumatou) is currently classified as At Risk-Declining but a measurable loss of matagouri in Otago may not be significant, as the current distribution of matagouri is more extensive than its pre-human natural distribution. It is preferable that potentially adverse effects on At Risk species are dealt with through robust offsetting rather than with more risky compensation.'[104] Dr Lloyd's advice is that 'Dr Keesing's suggested amendment to APP3(1)(b) to include '*such that reduction*	quantified gains, which I consider will assist in achieving a robust offsetting proposal. The deletion of APP3(1)(b) satisfies Dr Keesing's concerns with this criterion.	
APP3(1)(b) – Dr Keesing	(b)	~~reasonably~~[106] ~~measurable~~ a loss ~~within an ecological district~~[107] ~~to~~ an At Risk-Declining taxon such that the population viability is reduced within an ecological district, other than manuka (Leptospermum scoparium), ~~under the New Zealand Threat Classification~~	Dr Keesing considers it is not clear what is meant by 'measurable loss within an ecological district' and recommends amendments to the criterion to make it clear and workable.[108]			

[103] Cassie Mealey for DOC, para [38]
[104] Appendix 1, para [7]
[106] 00306.082 Meridian, 00139.139 DCC
[107] McEwen, W Medium (ed), 1987. Ecological regions and districts of New Zealand. Wellington: Department of Conservation (new footnote attributed to 00138.027 QLDC)
[108] Vaughan Keesing for Manaawa, para [9.16]

	~~System (Townsend et al, 2008)~~; or		*of population viability within the relevant ecological district'* may be equally as difficult to determine as 'reasonably measurable loss'.[105]		
APP3(1)(c) – Ms Mealey	(c) the activity will result in the worsening of the conservation status of any indigenous biodiversity as listed under the New Zealand Threat Classification System (Townsend et al, 2008), or	Ms Mealey seeks this criterion is moved to a standalone policy, similar to the West Coast RPS.[109]	Dr Lloyd's advice is that 'bottom lines expressed in a stand alone policy in the West Coast RPS were important in the recent decision on the proposed Te Kuha coal mine. So Ms Mealey's recommendations in paragraph 39 of her evidence would provide more effective bottom lines.'[110] Dr Lloyd's advice is'that 'As the conservation status of each species is determined at a	I do not recommend accepting Ms Mealey's proposal to move this threshold into a standalone policy as there is no scope to do so. I do not recommend accepting Dr Keesing's proposal to delete APP3(1)(c) because this criterion is a threshold which must be met before offsetting becomes an available tool as part of the effects management hierarchy. However, as per Dr Lloyd's ecological advice, I recommend including the 'likely' worsening of the conservation status in	I recommend including 'likely' to APP3(1)(c) before "worsening".

[105] Appendix 1, para [17]
[109] Cassie Mealey for DOC, para [39]
[110] Appendix 1, para [2]

			national scale, national-scale population information is required in order to assess changes. Furthermore, the threat status of indigenous biota is not updated continuously, but every 3-5 years or thereabouts by an expert panel. An applicant or consent authority could not know in advance what decisions the expert panel would make on threat status, or whether they related to an Otago Region site. As written, APP3 (1)(d) would have limited effectiveness. It would be more effective if it was expressed in terms of the likelihood of a worsening of the	APP3(1)(c), as the addition of 'likely' makes the criterion possible to assess.[112]	

[112] Appendix 3

			conservation status.'[111]		
APP3(1)(c) – Dr Keesing	~~(c) the worsening of the conservation status of any indigenous biodiversity as listed under the New Zealand Threat Classification System (Townsend et al, 2008), or~~	Dr Keesing considers determining the ranking of species under the NZTCS is a complex and somewhat subjective assessment which occurs periodically with a review of abundance (population) and distribution data trends across New Zealand. He seeks the clause is deleted because it is impracticable and will only cause confusion and disagreement.[113]			

[111] Appendix 1, para [18]
[113] Vaughan Keesing for Manawa, para [9.19]

APP3(1)(d) – Ms Mealey	~~(d) the removal or loss of viability of a naturally uncommon ecosystem type that is associated with *indigenous vegetation* or habitat of indigenous fauna; or~~[114]	Ms Mealey seeks this criterion is moved to a standalone policy, similar to the West Coast RPS.[115]	Dr Lloyd's advice is 'bottom lines expressed in a stand alone policy in the West Coast RPS were important in the recent decision on the proposed Te Kuha coal mine. So Ms Mealey's recommendations in paragraph 39 of her evidence would provide more effective bottom lines.'[116] Dr Lloyd's advice is that 'naturally uncommon ecosystem types that retain indigenous vegetation or indigenous fauna habitat all warrant protection and so the	As per my discussion on APP3(1)(c) in response to Ms Mealey's submission, I do not recommend accepting her recommendation due to scope. I do not recommend accepting Dr Keesing's proposed amendment because APP3(1)(d) is one of the thresholds which determines whether offsetting is available to an activity and Dr Keesing's suggested amendment to the criterion weakens it. Furthermore, Dr Lloyd's advice is that all naturally uncommon ecosystem types containing indigenous vegetation or indigenous fauna habitat require protection.	I recommend no amendments to APP3(1)(d).
APP3(1)(d) – Dr Keesing	(d) the removal or loss of viability of a "naturally uncommon ecosystem type that is associated with *indigenous vegetation* or habitat of indigenous fauna" where less than 30% of the type is in protection; or[118]	Dr Keesing considers this criterion should be amended so that it only relates to examples of naturally and uncommon ecosystem types where less than 30% of the ecosystem type is protected.[119]			

[114] 00137.158 DOC
[115] Cassie Mealey for DOC, para [39]
[116] Appendix 1, para [2]
[118] 00137.158 DOC
[119] Vaughan Keesing for Manawa, para [9.20]

			amendment is not supported'.[117]		
APP3(1)(e) – Dr Keesing	~~(e) the loss (including cumulative loss) or irreplaceable or vulnerable indigenous biodiversity.~~	Delete or remove 'vulnerability' Dr Keesing supports the concept of not causing species to be made extinct on an ecological district or national level but does not understand what subclause 1(e) means by "irreplaceable or vulnerable". He considers the criteria is vague and open to debate and should be deleted.[120]	Dr Lloyd's advice is that 'vulnerability and irreplaceability are widely used constraints to offsetting and can be evaluated based on evidence of irreplaceability or vulnerability. This criterion should be retained'[121]	I do not recommend deleting this criterion because it forms part of the threshold suite that determines whether offsetting is available for an activity. Removing it would weaken the threshold and compromise the attainment of ECO-O1 and ECO-O2 by potentially allowing inappropriate activities to access offsetting. Furthermore, Dr Lloyd's advice is that vulnerability and irreplaceability are commonly used within the offsetting framework and can be evaluated on evidence.	I recommend no amendments to APP3(1)(e).
APP3(2)(b) – Ms Mealey	(b) <u>the proposal demonstrates</u>	Seeks the criterion	Dr Lloyd's advice is that 'Ms Mealey's	I do not recommend removing 'no net loss and	(b) <u>the proposal demonstrates</u>

[117] Appendix 1, para [19]
[120] Vaughan Keesing for Manawa, para [9.22]
[121] Appendix 1, para [20]

	that[122] the offset can reasonably[123] achieves~~s~~[124] ~~no net loss and preferably~~ a net gain in indigenous biodiversity, as measured by type, amount and condition at both the impact and offset sites using an explicit, quantitative loss and gain calculation,	demonstrates a net gain, rather than no net loss and the word 'quantitative' is inserted prior to 'loss and gain calculation' because a net gain outcome provides a better outcome for biodiversity and accounts for unpredicted environmental variation and for potential minor uncertainty or error within the design and implementation process.[125]	recommendations to APP3(2)(b) have merit because a quantitative loss and gain calculator is important to allow verification.'[126] Dr Lloyd's advice is that regarding 'more than minor residual effects' this is reasonable and could be resolved by including the term 'measurable' into APP3(2)(a) as follows 'the offset addresses the measurable	preferably' from the criterion because, as stated in Ms Mealey's evidence, 'the aim of a biodiversity offset is to achieve no net loss and preferably a net gain of biodiversity'[129] Based on Dr Lloyd's advice, I recommend including 'quantitative to the criterion because this will improve how verification of loss and gain is measured. I do not recommend accepting Dr Keesing's proposed amendments because the criterion does not refer to a model and it does not require a net gain. The principle of biodiversity offsetting is to achieve no net	that[130] the offset can reasonably[131] achieves~~s~~[132] no net loss and preferably a net gain in indigenous biodiversity, as measured by type, amount and condition at both the impact and offset sites using an explicit quantitative loss and gain calculation,

[122] 00137.158 DOC
[123] 00137.158 DOC
[124] 00137.158 DOC
[125] Cassie Mealey for DOC, para [45]
[126] Appendix 1, para [14]
[129] Cassie Mealey for DOC, para [15]
[130] 00137.158 DOC
[131] 00137.158 DOC
[132] 00137.158 DOC

APP3(2)(b) – Dr Keesing	(b)	the proposal demonstrates that[133] the offset can reasonably[134] achieves~~~[135] no net loss ~~and preferably a net gain~~ in indigenous biodiversity, as measured by type, amount and condition at both the impact and offset sites ~~using an explicit loss and gain calculation,~~	Dr Keesing considers it is important that less than minor residual effects are able to be excluded from the net loss (or preferably net gain) requirement of APP3(2)(b).[136] Dr Keesing seeks the reference to 'using an explicit loss and gain calculation' is removed from APP3(2)(b) because offsetting does not always	residual effects..' because very small effects would not be measurable'.[127] Dr Lloyd's advice is that 'offsetting always requires a loss-gain calculation, and that the clause does not refer to a model, a simple calculation is sufficient'.[128]	loss and preferably a net gain.	

[133] 00137.158 DOC
[134] 00137.158 DOC
[135] 00137.158 DOC
[136] Vaughan Keesing for Manawa, para [9.25]
[127] Appendix 1, para [21]
[128] Appendix 1, para [21]

		require a model.[137]			
APP3(2)(d) -Dr Keesing	(d) the offset is applied so that the ecological values being achieved are the same or similar to those being lost or that the trade is upward (ie more valuable ecologically),	Dr Keesing seeks that 'trading up' is allowed in this criterion.[138]	Dr Lloyd's advice is that 'Dr Keesing's proposed amendment to include 'trading up' in APP3(2)(d) should not be accepted as offsetting focuses on the same or similar values because there is no established accounting model that deals with unlike trades'[139]	Based on Dr Lloyd's advice I do not recommend accepting Dr Keesing's amendment to this criterion because offsetting does not deal with 'trading up' because there are no offsetting models for unlike trades.[140]	I recommend no amendments to APP3(2)(d).
APP3(2)(e) – Dr Keesing	(e) the positive ecological outcomes of the offset endure at least as long as the impact of the activity ~~and preferably in perpetuity~~,	Dr Keesing considers the statement 'preferably in perpetuity' is unnecessary.[141]		I do not recommend accepting Dr Keesing's proposal to remove 'preferably in perpetuity' because it is desired that the offsetting outcome will continue past the impact of the activity and these words support that.	I recommend no amendments to APP3(2)(d).

[137] Vaughan Keesing for Manawa, para [9.26]
[138] Vaughen Keesing for Manawa, para [9.27]
[139] Appendix 1, para [22]
[140] Chapter 10: Ecosystems and indigenous biodiversity, Appendix 10c, section 3.10, para. 4
[141] Vaughen Keesing for Manawa, para [9.28]

APP3(2)(f) – Ms Mealey	(f)	the proposal demonstrates that the offset will achieves ~~s~~ biodiversity outcomes ~~beyond results~~ that are demonstrably additional to those[142] that would have occurred if the offset was not proposed, and are additional to any remediation or mitigation undertaken in relation to the adverse effects of the activity,[143]	No reasoning provided for suggested amendment.	Dr Lloyd's advice is that 'removing these words would enable the double-counting of outcomes to be achieved by both mitigation and offsetting'.[144]	I recommend accepting Ms Mealey's proposed amendment to include 'will' in the criterion because I consider it improves the readability of the criterion. Furthermore, the offset proposal will be considered in a consenting decision. If the consent is granted then the offsetting will occur in the future, not in the present and so I consider the term 'will' is more appropriate. I do not recommend removing 'and are additional to any remediation or mitigation undertaken in relation to the adverse effects of the activity' from the criterion because these words ensure there is no double counting between mitigation and offsetting, which is important for ensuring the best offsetting outcome to achieve ECO-O1 and ECO-O2.	I recommend amending APP3(2)(f) to read 'the proposal demonstrates that the offset will achieves ~~s~~ biodiversity…'
APP3(2)(f) – Dr Keesing	(f)	the proposal demonstrates that the offset achieves biodiversity outcomes that are demonstrably additional to those that would have	Dr Keesing considers it is unnecessary that the offset must be additional and is only present after the remediation and			

[142] 00139.139 DCC
[143] 00137.158 DOC
[144] Appendix 1, para [24]

		occurred if the offset was not proposed, ~~and are additional to any remediation or mitigation undertaken in relation to the adverse effects of the activity~~,	mitigation aspects have already been considered.[145]			
APP3(2)(g) – Ms Mealey	(g)	the time delay between the loss of biodiversity and the gain or maturation of the *biodiversity* outcomes of the ~~realisation of the~~ [146]offset is the least necessary to achieve the ~~best possible~~ outcome,	No reasoning provided for suggested amendment.		I do not recommend removing 'best possible' from the criterion because it ensures the outcome is of a high standard. In retaining 'best possible' better supports the attainment of ECO-O2 by supporting a certain standard of outcome for biodiversity.	I recommend no amendments to APP3(2)(g).
APP3(2)(h) – Dr Keesing	~~(h)~~	~~the outcome of the offset is achieved within the duration of the resource consent, and~~	Dr Keesing considers this criterion is unnecessary and unrealistic e.g. in circumstances where the offset	Dr Lloyd's advice is that 'Dr Keesing is confusing the offset outcome with the ecological outcome. No net loss should be achieved within the	I do not recommend deleting this criterion because it ensures no net loss is achieved within the duration of the consent, which is crucial for achieving ECO-O1 by halting any net decline in	I recommend no amendments to APP3(2)(h).

[145] Vaughan Keesing for Manawa, para [9.29]
[146] 00137.158 DOC

		is targeting a mature forest habitat.[147]	duration of the consent, but the net gain outcome can continue to grow after the duration of the consent'[148]	condition, quantity and diversity of indigenous biodiversity.	
APP3(2)(i) – Dr Keesing	~~(i) any offset developed in advance of an application for resource consent must be shown to have been created or commenced in anticipation of the specific effect of the proposed activity and would not have occurred if that effect was not anticipated, and~~	Dr Keesing considers this criterion is unnecessary and that it could affect the region by reducing the number and expanse and earlier establishment of new biodiversity in the region simply because an application does not have a specific project and therefore specific effect to attach the offset to.[149]	Dr Lloyd's advice is that 'this criterion is important for additionality reason relating to biodiversity and so it should not be deleted'.[150]	I do not recommend deleting this clause because an offset is linked to a specific activity and needs to be evaluated against it. Therefore, it is important that any offset developed in advance of an application has been created in anticipation of the proposed activity to ensure the adverse effects are properly offset.	I recommend no amendments to APP3(2)(i).

[147] Vaughan Keesing for Manawa, para [9.30]
[148] Appendix 1, para [25]
[149] Vaughan Keesing, para [9.31]
[150] Appendix 1, para [26]

APP3(3)(a)- Ms Mealey	(a) ~~use objective counts and measures wherever possible,~~ Describe and measure biodiversity at the impact and offset sites using metrics that allow for biodiversity losses and gains to be quantified and balanced on a like for like basis,	Ms Mealey seeks slightly different wording to improve the clarity of APP3(3)(a) while still maintaining the intent.[151]	Dr Lloyd supports Ms Mealey's recommendation.[152]	I support this suggested amendment because it is more descriptive and provides better guidance for an applicant than the current version.	I recommend APP3(3)(a) is amended, as follows: ~~Use objective counts and measures wherever possible,~~ Describe and measure biodiversity at the impact and offset sites using metrics that allow for biodiversity losses and gains to be quantified and balanced on a like for like basis
APP3(3)(b) – Ms Mealey	(b) ~~include high value species or vegetation types as components,~~	Ms Mealey submits that APP3(3)(b) specifies that all high value species and vegetation types are included in an offset. She considers the intent is to ensure transparency when balancing	Dr Lloyd supports Ms Mealey's recommendation.[154]	I recommend deleting this criterion because it is captured in APP3(3)(c).	I recommend the deletion of APP3(3)(b)

[151] Cassie Mealey for DOC, para [46]
[152] Appendix 1, para [15]
[154] Appendix 1, para [15]

		an offset's losses and gains. In her opinion, this is captured in the APP3(3)(c) and therefore recommends APP3(3)(b) be removed for clarity.[153]			
APP3(3)(c) – Ms Mealey	(c) ~~dissagregate components of high value species and vegetation types, so that no trade-offs between them can occur,~~ Use a disaggregated accounting system for important and high value species and vegetation types to ensure they are transparently accounted for,	Ms Mealey suggests alternative wording for 'components' because it has a specific meaning in reference to a biodiversity offset accounting model and this might read as too prescriptive. She suggests alternative wording to ensure trades are transparent and that biodiversity	Dr Lloyd supports Ms Mealey's recommendation.[156]	I recommend accepting Ms Mealey's amendment to APP3(3)(c) because the expression is clearer than the current version. I also support the inclusion of 'important' species and vegetation types as this supports the attainment of ECO-O2.	I recommend the following amendments to APP3(3)(c), as follows: . ~~dissagregate components of high value species and vegetation types, so that no trade-offs between them can occur~~ Use a disaggregated accounting system for important and high value species and vegetation types to ensure they are transparently accounted for,

[153] Cassie Mealey for DOC, para [46]
[156] Appendix 1, para [15]

		which does not meet the definition of 'high value', yet is still important, is clearly included in the offset.[155]			
APP3(3)(d) – Dr Keesing	(d) ~~evaluate the ecological context, including the interactions between species, habitats and ecosystems, spatial connections and ecosystem function at the impact site and offset site, and~~	Dr Keesing considers scientific research is required to address APP3(3)(d).[157]	Dr Lloyd's advice is that 'the requirement to consider ecological context matters at the offset and impact sites do not require scientific research but can be done using available information.[158]	An application for biodiversity offsetting will require an assessment of environmental effects, which will not always require new scientific research but may be able to be supported by existing information. The potential requirement to provide scientific research does not justify the deletion of the criterion.	I do not recommend any amendments to APP3(3)(d).
APP3(3)(e) – Ms Mealey	(e) include consideration of mātauraka Māori		Dr Lloyd supports Ms Mealey's recommendation.[159]	I recommend accepting Ms Mealey's amendment to include 'where available'; however, I suggest slightly	I recommend including 'where available to an applicant' in APP3(3)(e).

[155] Cassie Mealey for DOC, para [46]
[157] Vaughan Keesing for Manawa, para [9.37]
[158] Appendix 1, para [27]
[159] Appendix 1, para [15]

	where available, and			different 'where available to an applicant'. I consider this amendment appropriate because whilst Māturaka Māori might be available it might not be accessible to an applicant.	
APP3(3)(e) – Dr Keesing	(e) include consideration of mātauraka Māori *[amend to make clear what is required]*, and	Dr Keesing considers it is unclear what Mātauraka Māori means, and that this is not usually an aspect of most ecologists' training and will require a specific set of skills and understanding. He recommends this criterion is clarified to make clear what is required.[160]		I consider my recommendations to replace 'consideration' with 'application' in response to Ms Bartlett together with the addition of 'where available to an applicant' makes clear what is required of an applicant. These amendments should resolve Dr Keesing's concerns with APP3(3)(e). Further, the amendments make clear that the obligation regarding the application of Mātauraka Māori is on the applicant not on an engaged ecologist, which appears to be Dr Keesing's concern.	

[160] Vaughan Keesing for Manawa, para [9.38]

APP3(3)(eE) - Ms Mealey	(eE) Provide opportunity for effective and early participation of stakeholders when planning a biodiversity offset,		Dr Lloyd supports Ms Mealey's recommendation.[161]	I do not recommend accepting this new clause because the mandatory engagement of stakeholders in the design of an offsetting proposal can be difficult and problematic for proponents. The Act provides for the participation of the public or affected persons where such engagement is necessary.	I do not recommend accepting this suggested new criterion.
APP3(3)(f) – Ms Mealey	(f) include a separate biodiversity offset management plan prepared in accordance with good practice and which incorporates a monitoring and evaluation regime and detail regarding the transparent communication of the results to the public which is proportionate to	Ms Mealey seeks amendments to this criterion to support the 'transparency' principle in international and national guidance and is scalable to the project it effects. She notes for small activities such as an on-farm development, proportionate communication of results may	Dr Lloyd supports Ms Mealey's recommendation.[163]	I do not recommend accepting this new criterion Ms Mealey's suggested amendment might be a subject of a consent condition. Further, consents typically require reporting to the consent authority, which is publicly available information. Further, it is unclear how the person/business/organisation is to communicate with the public. I consider it could be an onerous task.	I recommend no amendments to APP3(3)(f).

[161] Appendix 1, para [15]
[163] Appendix 1, para [15]

	the activity and its effects.	consist of reporting back to Council when the offset or compensation outcome has been achieved.[162]			
New proposed APP3 criterion	Amendments sought (shown in red)	Reasoning	Dr Lloyd's ecological advice	Analysis	Recommendation
APP3(1)(c) – Ms Mealey	(c) the activity will result in the loss of an indigenous taxon or any ecosystem type from an ecological district; or	No reasoning provided for the inclusion this new criterion.		I do not recommend including this new clause because Ms Mealey has not provided any reasoning for the inclusion of this new criterion, therefore I am unclear as to the appropriateness of the criterion.	I do not recommend including this new proposed criterion.
APP3(1)(d) – Ms Mealey	(d) there are no technically feasible or socially acceptable options by which to secure gains within acceptable timeframes; or	Ms Mealey considers the technical feasibility or social acceptability of the offset or compensation actions is crucial to understand	Dr Lloyd's advice is that Ms Mealey's new proposed criterion APP3(1)(d) (*there are no technically feasible or socially acceptable options by which to secure gains within acceptable timeframes*) could	I do not recommend accepting this new suggested criterion to APP3(1) because 'socially acceptable' is vague and difficult to assess due to a diverse range of views in society. APP3(1) is the gatekeeper which sets out the thresholds	I do not recommend including this new proposed criterion.

[162] Cassie Mealey for DOC, para [43]

		the practicality of managing residual adverse effects and evaluating the likely success of the proposed outcome.[164]	have value as an additional criterion because if no technical options exists then this could be a sensible limit to offsetting, however, it is difficult to evaluate 'socially acceptable'[165].	that must be met before offsetting becomes available I consider the criteria in APP3(2) and (3) determine whether a proposal is not feasible.	
APP3(1)(e) – Ms Mealey	(e) the effects on indigenous biodiversity are uncertain, unknown, or little understood, but potential effects are significantly adverse; or	Ms Mealey considers being aware of what is known and unknown about an effect on biodiversity is key to reduce the risk of effects being missed, resulting in permanent losses or unmanaged adverse effects on biodiversity.[166]	Dr Lloyd's advice is: 'if effects are uncertain, unknown, or little understood, it would be difficult to see how they could be offset, as potential losses need to be quantified and offsets must have measurable outcomes. It is not unusual to have effects that are poorly understood, but potential effects may be significantly adverse, especially for less-studied biodiversity, such as	I do not recommend accepting this new criterion because there is overlap with APP3(2)(b) and because IM-P6 sets out what to do when there is uncertainty.	I do not recommend accepting this new proposed criterion.

[164] Cassie Mealey for DOC, para [43]
[165] Appendix 1, para [9]
[166] Cassie Mealey for DOC, para [43]

			invertebrates, for example. This limit could nevertheless be applied to both offsetting and compensation.'[167]		
APP3(1)(f) – Ms Mealey	(f) the proposed activity may contradict anticipated environmental results ECO-AER1 to ECO-AER4; or	Ms Mealey considers by including reference to anticipated environmental results in an offsetting limit will assist to ensure the ECO results are achieved.[168]	ECO-AER1-4 relates to no further decline, and improvement in the quality, quantity, or diversity of Otago's indigenous biodiversity, effective involvement of Kai Tahu in indigenous biodiversity management, and that for SNAs, the area of land vegetated by wilding conifers is reduced. It would be reasonable to limit offsetting or compensation outcomes that don't support these anticipated results. Where an activity contradicts the anticipated results,	AERs are statements of the outcome that would be achieved if all the provisions of the ECO chapter are implemented. They are not a policy or a method against which one is to measure a proposal. Therefore, I do not recommend accepting this new proposed criterion.	I do not recommend accepting this new proposed criterion.

[167] Appendix 1, para [10]
[168] Cassie Mealey for DOC, para [43]

			offsetting or compensation should address that contradiction, resulting in consistency with the anticipated results. To address offsetting outcomes would require a change from 'activity' to 'offset/compensation outcomes'.[169]		
APP3(1)(g) – Ms Mealey	(g) it cannot be reasonably demonstrated that the proposed management methods for the offset are likely to achieve the predicted outcome; or	Ms Mealey acknowledges that a loss and gain calculation is used to demonstrate no net loss or a net gain outcome in an offset (APP3(2)(b)). However, she considers this is reliant on the proposed management methods being able to deliver	This limit is supported by Dr Lloyd. Experimental management does get proposed from time-to-time, for example with respect to ephemeral wetland offsetting in the Deepdell North Mine application, and with respect to rare bryophyte translocation at the proposed Te Kuha mine. Such experimental	APP3(1) and APP3(2) have different purposes. APP3(1) sets out the thresholds which an activity must meet before offsetting can be accessed and APP3(2) sets out the criteria for offsetting. Therefore, I do not recommend accepting this new criterion because it relates to the offset and not the activity. Furthermore, Ms Mealey's concern is addressed in APP3(2)(f). The inclusion of this criterion as sought by Ms Mealey would create duplication.	I do not recommend accepting this proposed new criterion.

[169] Appendix 1, para [11]

		the predicted biodiversity gain/s and so to have confidence in the proposal, there must be a reasonable degree of confidence that the biodiversity value will respond positively to the proposed management method.[170]	approaches are highly risky as they may not result in successful offsetting or compensation.[171]		
APP3(1)(h) – Ms Mealey	(h) the offset actions may displace activities harmful to indigenous biodiversity to other locations.	Ms Mealey recommends a new criterion which refers to 'leakage' is required because the offset design should not lead to (leak) unintended harmful effects on biodiversity in	Dr Lloyd's advice is that this is a standard limit for offsetting and could be used as a limit in the proposed Otago RPS.[173]	This criterion is ambiguous and it is not as clear as the NPSFM offsetting principle on 'leakage, which refers to the offsetting "design and implementation". I support Ms Mealey's proposal, in part, and recommend adopting the NPSFM offsetting wording on 'leakage'.	I recommend including the following new criterion to APP3(2) 'the offset design and implementation do not displace harm to other locations (including harm to existing biodiversity at the offset site).'

[170] Cassie Mealey for DOC, para [43]
[171] Appendix 1, para [12]
[173] Appendix 1, para [13]

		other locations.[172]			

[172] Cassie Mealey for DOC, para [43]

56. Mr Christensen for Oceana Gold proposes APP3 be amended so that it is a set of principles which an applicant must have appropriate regard to.[174] He considers this approach is more appropriate as it would allow for offsetting proposals to be considered on their merits at the consenting stage.[175] He considers APP3 should be replaced with principles which are adapted from the E draft NPSFM 2022.[176]

57. I do not recommend APP3 be amended so that it is a set of principles because this approach is more lenient. APP3(1) contains a suite of thresholds that must be met before offsetting becomes available as an effects management option. If the activity meets the criteria in APP3(1) then biodiversity offsetting may be available provided the criteria in APP3(2) are met and all the requirements set out in APP3(3) are addressed in the application. As set out in paragraph 19, the offsetting principles which have come into force in the NPSFM are different to those in E Draft NPSFM. The key difference being that applicants must comply with principles 1 to 6, which are akin to criteria, and have regard to the remaining five principles.

58. At paragraph 22 of my opening statement, I recommend accepting Ms Bartlett's recommendation to amend APP3(3)(e), so that Mātauraka Māori is applied and not just a consideration[177]. I also recommended including Ms Bartlett's suggested new clause to APP3(2) '*the offset accords with mātauraka Māori when taoka species are affected*.[178] I recommended accepting these submission points because they are consistent with MW-P3 of the pORPS and s6(e) of the RMA. I still recommend accepting these proposed amendments; however, I suggest slightly different wording in response to Ms Mealey's proposal on APP3(3)(e) 'include application of mātauraka Māori where available to an applicant.

4.3. Final recommendation

59. My final recommendation to the as notified version of the PORPS are:

APP3 – Criteria for *biodiversity* offsetting

(1) Biodiversity offsetting is not available <u>for an</u>[179] ~~if the~~ activity <u>that</u>[180] will result in:

[174] Mark Christensen for Oceana Gold, para [171]
[175] Mark Christensen for Oceana Gold, para [170]
[176] Mark Christensen for Oceana Gold, para [171]
[179] Clause 10(2)(b)(i), Schedule 1, RMA – consequential amendment arising from 00137.158 DOC
[179] Clause 10(2)(b)(i), Schedule 1, RMA – consequential amendment arising from 00137.158 DOC
[179] Clause 10(2)(b)(i), Schedule 1, RMA – consequential amendment arising from 00137.158 DOC
[180] Clause 10(2)(b)(i), Schedule 1, RMA – consequential amendment arising from 00137.158 DOC

(a) the loss from an ecological district[181] [182] ~~of any individuals[183]~~ of Threatened taxa, other than kānuka (Kunzea robusta and Kunzea serotina), under the New Zealand Threat Classification System (Townsend et al, 2008); or

~~(b) reasonably measurable loss within the ecological district to an At Risk-Declining *taxon*, other than manuka (*Leptospermum scoparium*), under the New Zealand Threat Classification System (Townsend et al, 2008).~~[184]

(c) the likely[185] worsening of the conservation status of any *indigenous biodiversity* as listed under the New Zealand Threat Classification System (Townsend et al, 2008); or[186]

(d) the removal or loss of health and *resilience* of a naturally uncommon ecosystem type that is associated with *indigenous vegetation* or habitat of indigenous fauna; or[187]

(e) the loss (including through cumulative loss) of irreplaceable or vulnerable indigenous *biodiversity*, and[188]

(2) Biodiversity offsetting may be ~~is~~[189] available if the following criteria are met:

(a) the offset addresses only[190] residual adverse effects that remain after implementing the sequential steps required by ECO-P6(1) to (3),

(b) the proposal demonstrates that[191] the offset can reasonably[192] achieve~~s~~[193] no net loss and preferably a net gain in indigenous biodiversity, as measured by type, amount and condition at both the impact and offset sites using an explicit quantitative[194] loss and gain calculation,

(c) the offset is undertaken where it will result in the best ecological outcome, and preferably ~~as the first priority be~~:[195]

(i) close to the location of the activity, and

[181] McEwen, W Medium (ed), 1987. Ecological regions and districts of New Zealand. Wellington: Department of Conservation (new footnote attributed to 00138.027 QLDC)
[182] Clause 10(2)(b)(i), Schedule 1, RMA – consequential amendment arising from 00137.158 DOC
[183] 00137.158 DOC
[184] 00137.158 DOC
[185] 00311.0650 Manawa
[186] 00137.158 DOC
[187] 00137.158 DOC
[188] 00137.158 DOC
[189] Clause 10(2)(b)(i), Schedule 1, RMA – consequential amendment arising from 00137.158 DOC
[190] Clause 16(2), Schedule 1, RMA – for consistency with APP4(2)(a)
[191] 00137.158 DOC
[192] 00137.158 DOC
[193] 00137.158 DOC
[194] 00137.158 DOC
[195] 00137.158 DOC

(ii) within the same ecological district[196] ~~or coastal marine biogeographic region~~,[197]

(d) the offset is applied so that the ecological values being achieved are the same or similar to those being lost,

(e) the positive ecological outcomes of the offset endure at least as long as the impact of the activity and preferably in perpetuity,

(f) the proposal demonstrates that the offset will[198] achieve~~s~~[199] biodiversity outcomes ~~beyond results~~ that are demonstrably additional to those[200] that would have occurred if the offset was not proposed, and are additional to any remediation or mitigation undertaken in relation to the adverse effects of the activity,[201]

(g) the time delay between the loss of biodiversity and the gain or maturation of the *biodiversity* outcomes of the ~~realisation of the~~[202] offset is the least necessary to achieve the best possible outcome,

(h) the outcome of the offset is achieved within the duration of the resource consent, and

(i) any offset developed in advance of an application for *resource consent* must be shown to have been created or commenced in anticipation of the specific *effect* of the proposed activity and would not have occurred if that *effect* was not anticipated~~.~~, and

(j) the offset accords with mātauraka Māori when taoka species are affected,[203]

(k) the offset design and implementation do not displace harm to other locations (including harm to existing *biodiversity* at the offset site), and[204]

(3) *Biodiversity* offsetting proposed in any application for *resource consent*, plan change or notice of requirement must address all matters in APP3(2), and:

(a) describe and measure *biodiversity* at the impact and offset sites using metrics that allow for *biodiversity* losses and gains to be quantified and balanced on a like for like basis,[205]

[196] McEwen, W Medium (ed), 1987. Ecological regions and districts of New Zealand. Wellington: Department of Conservation (new footnote attributed to 00138.027 QLDC)
[197] 00237.007 Beef & Lamb and DINZ, 00137.016 DOC, 00226.035 Kāi Tahu ki Otago, 00120.011 Yellow-eyed Penguin Trust, 00230.016 Forest and Bird
[198] 00137.158 DOC
[199] 00137.158 DOC
[200] 00139.139 DCC
[201] 00137.158 DOC
[202] 00137.158 DOC
[203] 00223.134 Ngāi Tahu ki Murihiku
[204] 00311.0650 Manawa, 00137.158
[205] 00137.158 DOC

(b) use a disaggregated accounting system for important and *high value species and vegetation types* to ensure they are transparently accounted for,[206]

(c) evaluate the ecological context, including the interactions between species, habitats and ecosystems, spatial connections and ecosystem function at the impact site and offset site,

(d) include application of mātauraka Māori where to available to an applicant, and[207]

(e) include a separate *biodiversity* offset management plan prepared in accordance with good practice and which incorporates a monitoring and evaluation regime.

[206] 00137.158 DOC

[207] 00311.0650 Manawa, 00137.158

5. APP4 – Criteria for *biodiversity* compensation

5.1. Introduction

60. APP4 was discussed in section 10.30 of the s42A report, with my analysis in paragraphs [598] to [611].

61. The recommended version of this provision currently reads:[208]

APP4 – Criteria for *biodiversity* compensation

(1) Biodiversity compensation is not available ~~if the~~ for an[209] activity that[210] will result in:

(a) the loss from an ecological district[211] [212] of an indigenous taxon (excluding freshwater fauna and flora) or of any ecosystem type ~~from an ecological district or coastal marine biogeographic region~~,[213]

(b) removal or loss of viability of the[214] habitat of a Threatened ~~or At Risk~~[215] indigenous species of fauna or flora under the New Zealand Threat Classification System (Townsend et al, 2008),

(c) removal or loss of ~~viability~~ health and resilience[216] of a ~~naturally rare or~~ naturally[217] uncommon ecosystem type that is associated with indigenous vegetation[218] or habitat of indigenous fauna, ~~or~~[219]

(d) worsening of the conservation status of any Threatened or At Risk indigenous biodiversity listed under the[220] New Zealand Threat Classification System (Townsend et al, 2008),~~ conservation status of any Threatened or At Risk indigenous fauna.~~[221] , or[222]

[208] This version includes the recommendations from the hearing reports prepared under s42A of the RMA, all supplementary evidence, and the opening statements.
[209] Clause 10(2)(b)(i), Schedule 1, RMA – consequential change from 00137.158 DOC
[210] Clause 10(2)(b)(i), Schedule 1, RMA – consequential change from 00137.158 DOC
[211] McEwen, W Medium (ed), 1987. Ecological regions and districts of New Zealand. Wellington: Department of Conservation (new footnote attributed to 00138.027 QLDC)
[212] 00138.027 QLDC, and consequential change from 00137.158 DOC
[213] 00237.007 Beef & Lamb and DINZ, 00137.016 DOC, 00226.035 Kāi Tahu ki Otago, 00120.011 Yellow-eyed Penguin Trust, 00230.016 Forest and Bird
[214] Clause 16(2), Schedule 1, RMA
[215] 00115.022 Oceana Gold
[216] 00230.149 Forest and Bird
[217] Consequential to 0137.014 DOC
[218] Clause 16(2), Schedule 1, RMA
[219] Clause 16(2), Schedule 1, RMA
[220] 00137.158 DOC
[221] 00137.158 DOC
[222] Clause 16(2), Schedule 1, RMA

(e) the loss (including through cumulative loss) of irreplaceable or vulnerable indigenous biodiversity, and.[223]

(2) Biodiversity compensation may be[224] available if the following criteria are met:

(a) compensation addresses only residual adverse effects that remain after implementing the sequential steps required by ECO–P65(1) to (4),

(b) compensation is undertaken where it will result in the best ecological outcome and preferably:

(i) close to the location of the activity, ~~and~~[225]

(ii) within the same ecological district[226] ~~or coastal marine biogeographic region~~[227], and[228]

(iii) delivers indigenous biodiversity gains on the ground,[229]

(ba) where criterion (2)(b)(iii) is not met any financial contributions considered must be directly linked to a specific indigenous biodiversity gain or benefit.[230]

(c) compensation achieves positive *biodiversity* outcomes that would not have occurred without that compensation, and are additional to any remediation, mitigation or offset undertaken in response to the adverse effects of the activity,[231]

(d) the positive biodiversity outcomes of the compensation are enduring and are commensurate with the biodiversity values lost[232],

(e) the time delay between the loss of biodiversity ~~through the proposal~~ at the impact site[233] and the gain or maturation of the ~~compensation's~~[234] biodiversity outcomes from the compensation[235], is the least necessary to achieve the best possible ecological[236] outcome,

[223] 00137.158 DOC
[224] 00137.158 DOC
[225] 00137.158 DOC
[226] McEwen, W Medium (ed), 1987. Ecological regions and districts of New Zealand. Wellington: Department of Conservation (new footnote attributed to 00138.027 QLDC)
[227] 00237.007 Beef & Lamb and DINZ, 00137.016 DOC, 00226.035 Kāi Tahu ki Otago, 00120.011 Yellow-eyed Penguin Trust, 00230.016 Forest and Bird
[228] 00137.158 DOC
[229] 00137.158 DOC
[230] 00137.158 DOC
[231] 00137.158 DOC
[232] 00137.158 DOC
[233] 00137.158 DOC
[234] 00137.158 DOC
[235] 00137.158 DOC
[236] 00137.158 DOC

(f) the outcome of the compensation is achieved within the duration of the resource consent,

(fa) when trading up forms part of biodiversity compensation, the proposal must demonstrate the indigenous biodiversity values gained are demonstrably of higher indigenous biodiversity value than those lost, or considered vulnerable or irreplaceable,[237]

(g) *biodiversity* compensation developed in advance of an application for *resource consent* must be shown to have been created or commenced in anticipation of the specific *effect* of the proposed activity and would not have occurred if that *effect* was not anticipated, ~~and~~

(h) the *biodiversity* compensation is demonstrably achievable~~.~~, and

(i) the compensation accords with mātauraka Māori when taoka species are affected, and

(3) *Biodiversity* compensation proposed in any application for *resource consent*, plan change or notice of requirement, must address all matters in APP4(2), and:

(a) evaluate the ecological context, including the interactions between species, habitats and ecosystems, spatial connections and ecosystem function at the impact site and compensation site,

(b) include application ~~consideration~~ of mātauraka Māori, and

(c) include a separate *biodiversity* compensation management plan prepared in accordance with good practice and which incorporates a monitoring and evaluation regime.[238]

[237] 00137.158 DOC
[238] 00137.158 DOC

5.2. Submissions, evidence and analysis

62. Access to APP4 is through ECO-P6, which implements an effects management hierarchy which is directed towards attainment of the outcomes set out in ECO-O1 and ECO-O2. The effects management hierarchy in ECO-P6 sets out four steps which must be addressed before biodiversity compensation becomes available to address more than minor residual adverse effects of an activity.

63. The first step of APP4 comprises a suite of thresholds that must be met before compensation becomes available as an effects management option. If the activity meets the criteria under APP4(1) then biodiversity compensationmay be available provided the criteria under APP4(2) are met and all the requirements set out in APP4(3) are addressed within the application.

64. Ms Mealey for DOC has recommended various further amendments to the APP4 criteria in support of DOC's submission on APP4 (00137.159). Dr Keesing for Manawa and Contact has recommended various amendments to the APP4 criteria in support of Manawa's submission (00311.0655) and Contact's submission (00318.022). These suggested changes are outlined in the below table with ecological advice provided by Dr Lloyd.

APP4 criterion	Amendments sought (shown in red)	Reasoning	Dr Lloyd's ecological advice	Analysis	Recommendation (shown in blue)
APP4(1)(a)- Ms Mealey	(a) the activity will result in the loss from an ecological district[239] [240] of an indigenous *taxon* ~~(excluding *freshwater* fauna and flora)~~ or of any ecosystem type ~~from an *ecological district* or coastal marine~~	No reasoning provided for suggested amendment.		I do not recommend removing '(excluding freshwater fauna and flora)' because Ms Mealey has provided no reasoning for this suggested amendment; therefore, I am unclear as to the appropriateness of the suggested amendment.	I recommend no amendments.

[239] McEwen, W Medium (ed), 1987. Ecological regions and districts of New Zealand. Wellington: Department of Conservation (new footnote attributed to 00138.027 QLDC)

[240] 00138.027 QLDC, and consequential change from 00137.158 DOC

	~~biogeographic region~~,[241]				
APP4(1)(b)- Ms Mealey	~~(b) removal or loss of viability of the~~[242] ~~habitat of a Threatened or At Risk~~[243] ~~indigenous species of fauna or flora under the New Zealand Threat Classification System (Townsend et al, 2008),~~	Ms Mealey seeks APP4(1)(b) is deleted because removal of habitat may be relatively minor and could be compensated.[244]	Dr Lloyd's advice is that the deletion of this criterion could be considered as APP4(1)(b) may prevent practical compensation approaches[245]	Ms Mealey notes the removal of habitat may be minor and Dr Lloyd notes the deletion of the criterion could be considered because it may prevent practical compensation approaches. However, I consider there is not enough evidence on the risk to threatened species to justify the deletion of this criterion. Further, I do not consider the deletion of this criterion would assist in the attainment of ECO-O1 and ECO-O2. Dr Keesing's suggested amendment would allow for the removal or loss of an entire habitat of a Threatened population before the criterion is triggered, which weakens the framework considerably	I do not recommend any amendments to APP3(1)
APP4(1)(b) – Dr Keesing	(b) removal or loss of viability of the habitat of a Threatened indigenous species ~~of fauna or flora~~ population under the New Zealand Threat Classification System (Townsend et al, 2008),	Dr Keesing considers this criterion could prevent practical compensation approaches. [246]			

[241] 00237.007 Beef & Lamb and DINZ, 00137.016 DOC, 00226.035 Kāi Tahu ki Otago, 00120.011 Yellow-eyed Penguin Trust, 00230.016 Forest and Bird
[242] Clause 16(2), Schedule 1, RMA
[243] 00115.022 Oceana Gold
[244] Cassie Mealey for DOC, para [42]
[245] Appendix 1, para [6]
[246] Vaughan Keesing for Manawa, para [9.41]

APP4(1)(c) – Dr Keesing	(c) removal or loss of ~~health and resilience viability~~ viability of a naturally uncommon ecosystem type that is associated with indigenous vegetation or habitat of indigenous fauna, or	Dr Keesing considers there are low value naturally uncommon ecosystems which should not be limited to compensation.[247]	Dr Lloyd's advice is that this criterion APP4(1)(c) refers to naturally uncommon ecosystems that are associated with indigenous vegetation or fauna habitat. These would not be examples of low value ecosystems and protection is warranted for them. As such, this clause is best used as a stand-alone bottom line policy.[248]	I do not recommend removing 'health and resilience' from the criterion. Despite Dr Keesing's assertion, Dr Lloyd's advice is that these naturally uncommon ecosystems would not be considered low value and therefore warrant protection.	I do not recommend any changes to APP4(1)(c).
APP4(1)(d) – Dr Keesing	~~(d) worsening of the conservation status of any Threatened or At Risk indigenous biodiversity listed under the New Zealand Threat Classification System (Townsend et al, 2008), or~~	Dr Keesing considers determining the ranking of species under the NZTCS is a complex and somewhat subjective assessment which occurs periodically with a review of abundance (population) and	Dr Lloyd's advice is as the conservation status of each species is determined at a national scale, national-scale population information is required in order to assess changes. Furthermore, the threat status of indigenous biota is not updated continuously, but every 3-5 or	I do not recommend accepting Dr Keesing's proposal to delete APP4(1)(d) because this criterion is a threshold which must be met before compensation becomes an available tool as part of the effects management hierarchy. However, as per Dr Lloyd's ecological advice, I recommend including the 'likely' worsening of the conservation status in APP4(1)(d), as the addition of	I recommend including 'likely' to APP4(1)(d)

[247] Vaughan Keesing for Manawa, para [9.41]
[248] Appendix 1, Para [29]

		distribution data trends across New Zealand. He seeks the clause is deleted because it is impracticable and will only cause confusion and disagreement.[249]	thereabouts years by an expert panel. An applicant or consent authority could not know in advance what decisions the expert panel would make on threat status, or whether they related to an Otago Region site. It would be more effective if it was expressed in terms of the likelihood of a worsening of the conservation status. *250*	'likely' makes the criterion possible to assess.	
APP4(2)(ba) – Ms Mealey	(ba) where criterion (2)(b)(iii) ~~is not~~ cannot be met any financial contributions considered must be directly linked to a specific indigenous biodiversity gain or benefit	No reasoning provided for this proposed amendment.		I do not recommend including this amendment . Ms Mealey has not provided any reasoning.Therefore I am unclear as to the appropriateness of the proposed amendment.	I recommend no amendments to APP4(2)(ba)
APP4(2)(d) – Ms Mealey	(d) the positive *biodiversity* outcomes of the compensation	Ms Mealey considers this criterion should be		I recommend accepting Ms Mealey's recommendation because the requirement to	I recommend accepting Ms Mealey's proposed

[249] Vaughan Keesing for Manawa, para [9.19]
[250] Appendix 1, para [18]

	are, lasting at least as long as the impacts and preferably ~~maintained~~ in perpetuity ~~enduring~~ and are enough to outweigh the adverse effects on indigenous biodiversity ~~commensurate with the biodiversity values lost~~[251],	amended to reflect the E draft NPSIB. This would include changing the phrase that regards compensation outcomes are '*commensurate with the biodiversity values lost*' to '*are enough to outweigh the adverse effects on indigenous biodiversity*'. She considers this more appropriate as it is more explicit than 'commensurate' in terms of the intended outcome, and broad enough to consider the type, extent and significance of the biodiversity values lost and gained.[252]		maintain in perpetuity may not be practical or achievable in all instances.	amendments to APP4(2)(d)
APP4(2)(e) – Ms Mealey	(e) the time delay between the loss of *biodiversity* ~~through the proposal~~ at the	No reasoning provided for this		I do not recommend including these proposed amendments because Ms Mealey has not provided any reasons. Therefore	I recommend no amendments to APP4(2)(e).

[251] 00137.158 DOC
[252] Cassie Mealey for DOC, para [45]

	impact site[253] and the gain or maturation of the compensation ~~compensation's[254] *biodiversity* outcomes from the compensation[255]~~, is the least necessary to achieve the compensation ~~best possible ecological[256]~~ outcome,	proposed amendment.		I am unclear as to the appropriateness of the proposed amendments.	
APP4(2)(f) – Dr Keesing	~~(f) the outcome of the compensation is achieved within the duration of the resource consent,~~	Dr Keesing considers that for the outcome to be achieved within the duration of the resource consent is unnecessary and unrealistic in some circumstances.[257]	Dr Lloyd's advice is that Dr Keesing is confusing the compensation outcome with the ecological outcome. No net loss should be achieved within the duration of the consent, but the net gain outcome can continue to grow after the duration of the consent'.[258]	Based on Dr Lloyd's advice I do not recommend deleting this criterion because the proposed gain should be achieved within the consent duration.	I recommend no amendments to APP4(2)(f).

[253] 00137.158 DOC
[254] 00137.158 DOC
[255] 00137.158 DOC
[256] 00137.158 DOC
[257] Vaughan kessing for Manawa, para [9.42]
[258] Cassie Mealey for DOC, para [45]

APP4(2)(fa)- Ms Mealey	(fa) when trading up forms part of *biodiversity* compensation, the proposal must demonstrate the indigenous *biodiversity* values gained are demonstrably of higher indigenous *biodiversity* value than those lost, ~~or~~ and the values lost are not considered vulnerable or irreplaceable,[259]	Ms Mealey considers that the wording in the s42A report appears to misrepresent the intent around the phrase 'irreplaceable or vulnerable'.[260]		I recommend accepting this amendment because it makes it clear that vulnerable or irreplaceable indigenous biodiversity values are not to be lost. I note Ms Mealey's suggested amendment to this criterion may address Dr Keesing's concerns regarding what is meant by 'or considered vulnerable or irreplaceable'.	I recommend accepting Ms Mealey's proposed amendments to APP4(2)(fa)
APP4(2)(fa) – Dr Keesing	(fa) when trading up forms part of biodiversity compensation, the proposal must demonstrate the indigenous biodiversity values gained are demonstrably of higher indigenous biodiversity value than those lost, ~~or~~	Recommends removing the words 'or considered vulnerable or irreplaceable' from the last sentence for because the terms are unclear. the same reasons outlined in respect			

[259] 00137.158 DOC
[260] Appendix 1, para [31]

	~~considered vulnerable or irreplaceable~~,	of subclause(1)(e) of APP3(1)(e).[261]			
APP4(2)(g) – Dr Keesing	~~(g) biodiversity compensation developed in advance of an application for resource consent must be shown to have been created or commenced in anticipation of the specific effect of the proposed activity and would not have occurred if that effect was not anticipated,~~ ~~and~~	Dr Keesing considers this criterion could have regional effect of reducing the number and expanse and earlier establishment of new biodiversity in the region.[262]	Dr Lloyd's advice is that this criterion is important for additionality reasons relating to biodiversity and so it should not be deleted.[263]	I do not recommend deleting this clause because a compensation is linked to a specific activity and needs to be evaluated against it. Therefore, it is important that any compensation developed in advance of an application has been created in anticipation of the proposed activity to ensure the adverse effects are properly compensated..	I do not recommend deleing APP4(2)(g).
APP4(2)(h)- Ms Mealey	(h) the biodiversity compensation outcome is demonstrably achievable.	No reasoning provided for this proposed amendment.		I recommend including 'outcome' to APP4(2)(h) for consistency as the term is used throughout APP4.	I recommend including 'outcome' to APP4(2)(h).

[261] Vaughan Keesing for Manawa, para [9.42]
[262] Appendix 1, para [9.42]
[263] Appendix 1, para [26]

APP4(3)(a)- Ms Mealey	(a) evaluate the ecological context, including the interactions between species, habitats and ecosystems, spatial connections and ecosystem function at the impact site and compensation site, where applicable,	No reasoning provided for this proposed amendment.	Dr Lloyd's advice is that 'the requirement to consider ecological context matters at the offset and impact sites do not require scientific research but can be done using available information.[264]	I do not recommend accepting this proposed amendment because Ms Mealey has not provided any reasons. Therefore, I am unclear as to the appropriateness of the proposed amendment. Further, in response to Dr Keesing's concern, an application for biodiversity compensation will require an assessment of environmental effects, which will not always require new scientific research but maybe able to be supported by existing information. The potential requirement to undertake further scientific research does not justify the deletion of the criterion	I recommend no amendments to APP4(3)(a).
APP4(3)(3)(a) – Dr Keesing	~~(a) evaluate the ecological context, including the interactions between species, habitats and ecosystems, spatial connections and ecosystem function at the impact site and compensation site,~~	Dr Keesing considers this criterion could not reasonably be undertaken with any scientific rigour without several years of workd and considerable cost.[265]			
APP4(3)(b) – Ms Mealey	(b) include consideration of mātauraka Māori where available, ~~and~~	No reasoning provided for this proposed amendment.		I recommend accepting Ms Mealey's amendment to include 'where available'; however, I suggest slightly different 'where	I recommend including 'where available to an

[264] Appendix 1, para [27]
[265] Vaughen Keesing for Manaway, para [9.37]

APP4(3)(b) – Dr Keesing	(b) include consideration of mātauraka Māori *[amend to make clear what is required]*, and	Dr Keesing considers it is unclear what Mātauraka Māori means, and that this is not usually an aspect of most ecologists' training and will require a specific set of skills and understanding. He recommends this criterion is clarified to make clear what is required.[266]		available to an applicant'. I consider this amendment appropriate because whilst Māturaka Māori might be available it might not be accessible to an applicant. I consider my recommendations to replace 'consideration' with 'application' in response to Ms Bartlett together with the addition of 'where available to an applicant' makes clear what is required of an applicant. These amendments should resolve Dr Keesing's concerns with APP3(3)(e). Further, the amendments make clear that the obligation regarding the application of Mātauraka Māori is on the applicant not on an engaged ecologist, which appears to be Dr Keesing's concern.	applicant' in APP4(3)(b).
APP4(3)(bA) – Ms Mealey	(bA) be informed by science,	Ms Mealey considers this proposed new criterion better		I do not recommend including this criterion because it is implicit that the application for compensation will be informed	I do not recommend the inclusion of this new criterion.

[266] Vaughan Keesing for Manawa, para [9.38]

		captures the intent of criteria 3 and incorporates principles from the international and national guidance (BBOP 2012; NZ guidance; E draft NPSIB; paragraph 29, above).[267]		by science either existing or specific science evaluation.	
APP4(3)(bB) – Ms Mealey	(bB) provide opportunity for effective and early participation of stakeholders when planning a biodiversity offset, and	Ms Mealey considers this proposed new criterion better captures the intent of criteria 3 and incorporates principles from the international and national guidance (BBOP 2012; NZ guidance; E draft NPSIB; paragraph 29, above).[268]		I do not recommend accepting this new clause because the mandatory engagement of stakeholders in the design of a compensation proposal can be difficult and problematic for proponents. The Act provides for the participation of the public or affected persons where such engagement is necessary.	I do not recommend the inclusion of this new criterion.
APP4(3)(c)- Ms Mealey	(c) include a separate *biodiversity*	Ms Mealey recommends the		I do not recommend accepting this new criterion. Ms Mealey's	I do not recommend the

[267] Cassie Mealey for DOC, para [46(d)]
[268] Cassie Mealey for DOC, para [46(d)]

	compensation management plan prepared in accordance with good practice and which incorporates a monitoring and evaluation regime.[269] and detail regarding the transparent communication of the results to the public which is proportionate to the activity and its effects.	inclusion of a phrase seeking that '*detail regarding the transparent communication of the results to the public which is proportionate to the activity and its effects*' is included in the separate biodiversity compensation management plan criterion. She considers this will help to meet the 'transparency' principle in the international and national guidance and is scalable to the project and its effects. She notes that for small activities such as an on-farm development, proportionate communication of results may consist		suggested amendment might be a subject of a consent condition. Further, consents typically require reporting to the consent authority, which is publicly available information. Further, it is unclear how the person/business/organisation is to communicate with the public. I consider it could be an onerous task.	inclusion of this new criterion.

[269] 00137.158 DOC

		of reporting back to Council when the offset or compensation outcome has been achieved.[270]			
New proposed criterion	Amendments sought (shown in red)	Reasoning	Dr Lloyd's ecological advice		
APP4(1)(d) – Ms Mealey	(d) there are no technically feasible or socially acceptable options by which to secure gains within acceptable timeframes, or	Ms Mealey considers the technical feasibility or social acceptability of the compensation actions is crucial to understand the practicality of managing residual adverse effects and evaluating the likely success of the proposed outcome.[271]	Dr Lloyd's advice is that Ms Mealey's new proposed criterion APP3(1)(d) (*there are no technically feasible or socially acceptable options by which to secure gains within acceptable timeframes*) could have value as an additional criterion because if no technical options exists then this could be a sensible limit to compensation, however, it is difficult to evaluate 'socially acceptable'[272].	I do not recommend accepting this new suggested criterion to APP4(1) because 'socially acceptable' is vague and difficult to assess due to a diverse range of views in society. APP4(1) is the gatekeeper which sets out the thresholds that must be met before a compensation proposal becomes available I consider the criteria in APP4(2) and (3) determine whether a proposal is not feasible.	I do not recommend the inclusion of this new criterion.

[270] Cassie Mealey for DOC, para [46(b)(iii)]
[271] Cassie Mealey for DOC, para [43]
[272] Appendix 1, para [9]

APP4(1)(e) – Ms Mealey	(e) the effects on indigenous biodiversity are uncertain, unknown, or little understood, but potential effects are significantly adverse, or	Ms Mealey considers being aware of what is known and unknown about an effect on biodiversity is key to reduce the risk of effects being missed, resulting in permanent losses or unmanaged adverse effects on biodiversity.[273]	Dr Lloyd's advice is that If effects are uncertain, unknown, or little understood, it would be difficult to see how they could be offset, as potential losses need to be quantified and offsets must have measurable outcomes. It is not unusual to have effects that are poorly understood, but potential effects may be significantly adverse, especially for less-studied biodiversity, such as invertebrates, for example. This limit could nevertheless be applied to both offsetting and compensation.[274]	I do not recommend accepting this new criterion because there is an overlap with APP4(2)(c), and because IM-P6 sets out what to do when there is uncertainty.	I do not recommend the inclusion of this new criterion.
APP4(1)(f) – Ms Mealey	(f) the proposed activity may contradict anticipated environmental	Ms Mealey considers by including reference to anticipated environmental results in a compensation limit	Dr Lloyd's advice is that ECO-AER1-4 relates to no further decline, and improvement in the quality, quantity, or diversity of Otago's indigenous biodiversity,	AERs are statements of the outcome that would be achieved if all the provisions of the ECO chapter are implemented. They are not a policy or a method against which one is to measure a	I do not recommend accepting this new proposed criterion.

[273] Cassie Melaey for DOC, para [43]
[274] Appenidx 1, para [10]

	results ECO-AER1 to ECO-AER4, or	will assist to ensure the ECO results are achieved.[275]	effective involvement of Kai Tahu in indigenous biodiversity management, and that for SNAs, the area of land vegetated by wilding conifers is reduced. It would be reasonable to limit offsetting or compensation outcomes that don't support these anticipated results. Where an activity contradicts the anticipated results, offsetting or compensation should address that contradiction, resulting in consistency with the anticipated results. To address offsetting outcomes would require a change from 'activity' to 'offset/compensation outcomes'.[276]	proposal. Therefore, I do not recommend accepting this new proposed criterion.	
APP4(1)(g) – Ms Mealey	(g) it cannot be reasonably demonstrated	Ms Mealey acknowledges that a loss and gain	Dr Lloyd's advice is that this limit is supported. Experimental		I do not recommend the

[275] Cassie Mealey for DOC, para [43]
[276] Appendix 1, para [11]

		that the proposed compensation actions are likely to achieve the predicted outcome, or	calculation is used to demonstrate no net loss or a net gain outcome in a compensation. However, she considers this is reliant on the proposed management methods being able to deliver the predicted biodiversity gain/s and so to have confidence in the proposal, there must be a reasonable degree of confidence that the biodiversity value will respond positively to the proposed management method.[277]	management does get proposed from time-to-time, for example with respect to ephemeral wetland offsetting in the Deepdell North Mine application, and with respect to rare bryophyte translocation at the proposed Te Kuha mine. Such experimental approaches are highly risky as they may not result in successful offsetting or compensation.[278]	APP4(1) and APP4(2) have different purposes. APP4(1) sets out the circumstances when compensation is not available. APP4(2) sets out the criteria that must be met for compensation to be available as an effects management tool. Therefore, I do not recommend accepting this new criterion. Furthermore, Ms Mealey's concern is addressed in APP4(2)(f) and APP4(2)(h). The inclusion of this criterion as sought by Ms Mealey would create duplication.	inclusion of this new criterion.
APP4(1)(h) – Ms Mealey	(h)	the compensation may displace activities harmful	Ms Mealey recommends a new criterion which refers to 'leakage' is	Dr Lloyd's advice is that this is a standard limit for compensation and could be used as a limit	This criterion is ambiguous and is not as clear as the NPSFM compensation principle on 'leakage', which refers to the	I recommend including the following new criterion to

[277] Cassie Mealy for DOC, para [43]
[278] Appendix 1, para [12]

		to indigenous biodiversity to other locations.	required because the offset design should not lead to (leak) unintended harmful effects on biodiversity in other locations.[279]	in the proposed Otago RPS.[280]	compensation "design and implementation". I support Ms Mealey's proposal, in part, and recommend adopting the NPSFM compensation wording on 'leakage'.	APP4(2) 'the compensation design and implementation do not displace harm to other locations (including harm to existing biodiversity at the compensation site).'

[279] Cassie Mealey for DOC, para [43]
[280] Appendix 1, para [13]

65. Mr Christensen for Oceana Gold proposes APP4 be amended so that it is a set of principles which an applicant must have appropriate regard to.[281] He considers this approach is more appropriate as it would allow for compensation proposals to be considered on their merits at the consenting stage.[282] He considers APP4 should be replaced with principles which are adapted from the E draft NPSFM 2022.[283]

66. I do not recommend APP4 be amended so that it is a set of principles because this approach is more lenient. APP4(1) contains a suite of thresholds that must be met before compensation becomes available as an effects management option. If the activity meets the criteria under APP4(1) then biodiversity compensation may be available provided the criteria under APP4(2) are met and all the requirements set out in APP4(3) are addressed within the application. As set out in paragraph 19, the compensation principles which have come into force in the NPSFM are different to those in E Draft NPSFM. The key difference being that applicants must comply with principles 1 to 6, which are akin to criteria, and have regard to the remaining seven principles.

67. At paragraph 22 of my opening statement, I recommend accepting Ms Bartlett's recommendation to amend APP(3)(b), so that Mātauraka Māori is applied and not just a consideration[284]. I also recommended including Ms Bartlett's suggested new clause to APP4(2) '*the compensation accords with mātauraka Māori when taoka species are affected*.[285] I recommended accepting these submission points because they are consistent with MW-P3 of the pORPS and s6(e) of the RMA. I still recommend accepting these proposed amendments; however, I suggest slightly different wording in response to Ms Mealey's proposal on APP4(3)(b) 'include application of mātauraka Māori where available to an applicant'.

5.3. Final recommendation

68. My final recommendation to the as notified version of the PORSP are:

APP4 – Criteria for *biodiversity* compensation

(1) Biodiversity compensation is not available ~~if the~~ for an[286] activity that[287] will result in:

[281] Mark Christensen for Oceana Gold, para [171]
[282] Mark Christensen for Oceana Gold, para [170]
[283] Mark Christensen for Oceana Gold, para [171]

[286] Clause 10(2)(b)(i), Schedule 1, RMA – consequential change from 00137.158 DOC
[287] Clause 10(2)(b)(i), Schedule 1, RMA – consequential change from 00137.158 DOC

(a) the loss from an ecological district[288] of an indigenous taxon (excluding freshwater fauna and flora) or of any ecosystem type ~~from an ecological district or coastal marine biogeographic region~~,[289]

(b) removal or loss of viability of the[290] habitat of a Threatened ~~or At Risk~~[291] indigenous species of fauna or flora under the New Zealand Threat Classification System (Townsend et al, 2008),

(c) removal or loss of ~~viability~~ health and resilience[292] of a ~~naturally rare or~~ naturally[293] uncommon ecosystem type that is associated with indigenous vegetation[294] or habitat of indigenous fauna, ~~or~~[295]

(d) the likely[296] worsening of the conservation status of any Threatened or At Risk indigenous biodiversity listed under the[297] New Zealand Threat Classification System (Townsend et al, 2008) ~~of any Threatened or At Risk indigenous fauna.~~, or[298]

(e) the loss (including through cumulative loss) of irreplaceable or vulnerable *indigenous biodiversity*, and[299]

(2) Biodiversity compensation may be[300] available if the following criteria are met:

(a) compensation addresses only residual adverse effects that remain after implementing the sequential steps required by ECO-P6~~5~~(1) to (4),

(b) compensation is undertaken where it will result in the best ecological outcome and preferably:

(i) close to the location of the activity, ~~and~~[301]

---

[288] McEwen, W Medium (ed), 1987. Ecological regions and districts of New Zealand. Wellington: Department of Conservation (new footnote attributed to 00138.027 QLDC)

[289] 00237.007 Beef & Lamb and DINZ, 00137.016 DOC, 00226.035 Kāi Tahu ki Otago, 00120.011 Yellow-eyed Penguin Trust, 00230.016 Forest and Bird

[290] Clause 16(2), Schedule 1, RMA

[291] 00115.022 Oceana Gold

[292] 00230.149 Forest and Bird

[293] Consequential to 0137.014 DOC

[294] Clause 16(2), Schedule 1, RMA

[295] Clause 16(2), Schedule 1, RMA

[296] 00311.0650 Manawa

[297] 00137.158 DOC

[298] Clause 16(2), Schedule 1, RMA

[299] 00137.158 DOC

[300] 00137.158 DOC

[301] 00137.158 DOC

(ii) within the same ecological district,[302] ~~or coastal marine biogeographic region,~~[303] and[304]

(iii) delivers indigenous biodiversity gains on the ground,[305]

(ba) where criterion (2)(b)(iii) is not met, any financial contributions considered must be directly linked to a specific indigenous *biodiversity* gain or benefit,[306]

(c) the proposal demonstrates that the compensation will[307] achieve~~s~~[308] positive *biodiversity* outcomes that that are demonstrably additional to those that[309] would ~~not~~ have occurred without that compensation, and are additional to any remediation, mitigation or offset undertaken in relation to the adverse *effects* of the activity,[310]

(d) the positive biodiversity outcomes of the compensation ~~are enduring~~ last at least as long as the impacts and preferably in perpetuity and are enough to outweigh the adverse *effects* on indigenous *biodiversity*,[311]

(e) the time delay between the loss of biodiversity ~~through the proposal~~ at the impact site[312] and the gain or maturation of the ~~compensation's~~[313] biodiversity outcomes from the compensation,[314] is the least necessary to achieve the best possible ecological[315] outcome,

(f) the outcome of the compensation is achieved within the duration of the resource consent,

(fa) when trading up forms part of biodiversity compensation, the proposal must demonstrate the indigenous biodiversity values gained are demonstrably of higher indigenous biodiversity value than those lost, and the values lost are not[316] considered vulnerable or irreplaceable,[317]

(g) *biodiversity* compensation developed in advance of an application for *resource consent* must be shown to have been created or commenced in

[302] McEwen, W Medium (ed), 1987. Ecological regions and districts of New Zealand. Wellington: Department of Conservation (new footnote attributed to 00138.027 QLDC)
[303] 00237.007 Beef & Lamb and DINZ, 00137.016 DOC, 00226.035 Kāi Tahu ki Otago, 00120.011 Yellow-eyed Penguin Trust, 00230.016 Forest and Bird
[304] 00137.158 DOC
[305] 00137.158 DOC
[306] 00137.158 DOC
[307] Clause 10(2)(b)(i), schedule 1, RMA – consequential amendment arising from 00137.158 DOC
[308] 00137.158 DOC
[309] 00139.139 DCC
[310] 00137.158 DOC
[311] 00137.158 DOC
[312] 00137.158 DOC
[313] 00137.158 DOC
[314] 00137.158 DOC
[315] 00137.158 DOC
[316] 00137.158 DOC
[317] 00137.158 DOC

anticipation of the specific *effect* of the proposed activity and would not have occurred if that *effect* was not anticipated, ~~and~~

(h) the *biodiversity* compensation outcome[318] is demonstrably achievable~~.~~,

(i) the compensation accords with mātauraka Māori when taoka species are affected, and[319]

(i) the compensation design and implementation do not displace harm to other locations (including harm to existing *biodiversity* at the compensation site), and[320]

(3) *Biodiversity* compensation proposed in any application for *resource consent*, plan change or notice of requirement must address all matters in APP4(2), and:

(a) evaluate the ecological context, including the interactions between species, habitats and ecosystems, spatial connections and ecosystem function at the impact site and compensation site,

(b) include application of mātauraka Māori where available to an applicant,[321] and

(c) include a separate *biodiversity* compensation management plan prepared in accordance with good practice and which incorporates a monitoring and evaluation regime.[322]

69. In terms of a S32AA analysis, I consider the recommendations and additional direction in APP4 are more effective at achieving the outcome sought in ECO-O1 by ensuring any net decline in condition, quantity and diversity is halted. I consider that the amendments are the most appropriate way to achieve the purpose of the RMA, because it assists in achieving ORC's function of maintaining biological diversity under s 30(1)(ga).

70. The requirement for a compensation proposal to accord with mātauraka Māori when taoka species are affected and to apply mātauraka Māori where it is available to an applicant, is more effective in achieving the outcome sought in ECO-O3 because it enables mana whenua to exercise their role as kaitiaki of Otago.

[318] 00137.158 DOC
[319] 00223.134 Ngāi Tahu ki Murihiku
[320] 00137.158 DOC
[321] 00137.158 DOC
[322] 00137.158 DOC

6. Protection of taoka species and ecosystems

6.1. Submissions and evidence

71. At the Hearing, Commissioner Cubitt questioned the protection of taoka species together with significant natural areas under ECO-P3, noting that some taoka species are abundant in the Otago Region. Ms Maria Bartlett for Ngāi Tahu ki Murihiku explained that a species can be considered taoka because of its abundance. Mr Cubitt in his discussions with Ms Bartlett, raised the planning implications of this, being the requirement to, first, avoid any loss of taoka values under ECO-P3(1)(b) would mean the activity itself would need to be avoided as the policy would prevent any loss of these common species. Mr Cubitt gave the example of mānuka and kānuka, which are widespread taoka species in the Otago Region, and are often cleared from farmlands.

72. In her presentation of submissions to the Hearing Panel, Ms Jopp for Federated Farmers, submitted that the Proposed Otago Regional Policy Statement 2021 (pORPS) goes beyond the Exposure draft National Policy Statement for Indigenous Biodiversity (E draft NPSIB) by requiring the identification of any taoka species, which allows for the identification of taoka species not listed[323] under the Ngai Tahu Claims Settlement Act[324].

73. She considers there is no obligation to protect species that are taoka and that this misinterprets s6 of the RMA, which provides for the relationship of Māori with taoka, but does not require protection.[325] Ms Jopp submits that taoka species are prevalent on farmland, such as bracken, ring fern, tauhinu, mingimingi, mānuka and kānuka and that these species need to be cleared to maintain productive pastures. She considers the right to clear shrubs is recognised as an existing use right and local authorities must provide for existing activities on highly productive land.[326]

6.2. Analysis

74. Following Ms Jopp's submissions and Mr Cubitt's discussion with Ms Bartlett during the hearing, I consider ECO-P3 as drafted is unworkable because it does not allow for any loss of taoka species. It was clear from Ms Bartlett's oral evidence that this kind of avoidance was not necessary for all taoka to achieve protection, particularly for taoka species that are widespread or common in the Otago Region. As written, ECO-P3 would prevent the use of the effects management hierarchy to manage adverse effects on common or abundant taoka species as the effects management hierarchy in ECO-P6 cannot be accessed. Following the hearing I have worked with Kāi Tahu ki Otago and Ngāi Tahu ki

[323] Schedule 97
[324] Ms Jopp for (Federated Farmers of New Zealand), para [12.2] of Submissions on behalf of Federated Farmers on Ecosystems and Indigenous Biodiversity
[325] Ms Jopp for (Federated Farmers of New Zealand), paras [12.4] – [12.5] of Submissions on behalf of Federated Farmers on Ecosystems and Indigenous Biodiversity
[326] Ms Jopp for (Federated Farmers of New Zealand), para [12.6] of Submissions on behalf of Federated Farmers on Ecosystems and Indigenous Biodiversity

Murihiku to amend ECO-P2 to identify taoka species and ecosystems that require protection under ECO-P3(1)(b) and other taoka species and ecosystems that require maintenance under ECO-P6. During our discussions, Kāi Tahu ki Otago and Ngāi Tahu ki Murihiku also proposed a consequential amendment to ECO-M3 for mana whenua and local authorities to agree a process for how taoka species and ecosystems are to be identified and valued with reference to mātauraka Māori.

75. I support the amendments proposed by Kāi Tahu ki Otago and recommend they be incorporated into ECO-P2, ECO-P3 and ECO-M3. I consider these amendments will satisfy, in part, Ms Jopp's concerns raised in her submission around the identification and protection of taoka species because activities affecting common taoka species will be able to access the effects management hierarchy in ECO-P6.

76. I recommend a consequential amendment to the chapeau in ECO-P4, arising from the recommendations to ECO-P2 and ECO-P3, to amend 'or where they may adversely affect indigenous species and ecosystems that are taoka' to 'or where they may adversely affect indigenous species and ecosystems that are taoka that have been identified by mana whenua as requiring protection'. I recommend a consequential amendment to remove 'ECO-P5' from the chapeau because I have recommended to delete ECO-P5.

77. Finally, I recommend an errata to ECO-P3(1)(a) to amend 'and' to 'or'. The notified version of ECO-P3(1)(a) uses the term 'or' instead of 'and'. The change to amend 'or' to 'and' is not recommended in the S42A report but has been carried over to the S42A version of ECO-P3. The provision is meant to use the term 'or' because an area may only hold one of the two values and/or areas under ECO-P3(1).

6.3. Final recommendation

ECO-P2 – Identifying *significant natural areas* and taoka

Identify and map:[327]

(1) the areas and indigenous *biodiversity*[328] values of *significant natural areas* in accordance with APP2, and

(2) where appropriate,[329] *indigenous species* and ecosystems that are taoka, including those identified by *mana whenua* as requiring protection,[330] in accordance with ECO-M3.

[327] 00020.018 Rayonier Matariki
[328] 00226.218 Kāi Tahu ki Otago, 00230.101 Forest and Bird
[329] 00226.218 Kāi Tahu ki Otago
[330] 00239.100 Federated Farmers

ECO-P3 – Protecting *significant natural areas* and taoka

Outside the coastal environment, and ~~E~~except[331] as provided for by ECO-P4 ~~and ECO-P5~~,[332] protect *significant natural areas* and *indigenous species* and ecosystems that are taoka by:

(1) first[333] avoiding adverse *effects* that result in:

(a) any reduction of the area or indigenous *biodiversity*[334] values identified and mapped under ECO-P2(1),[335] (even if those values are not themselves significant but contribute to an area being identified as a *significant natural area*[336]) ~~identified under ECO–P2(1)~~[337], or

(b) any loss of ~~Kāi Tahu~~ taoka[338] values identified by *mana whenua* as requiring protection[339] under ECO-P2(2),[340] and

(2) after (1), applying the ~~biodiversity~~ *effects management hierarchy (in relation to indigenous biodiversity)*[341] in ECO-P6 to areas and values other than those covered by ECO-P3(1),[342] and

(3) prior to *significant natural areas* and *indigenous species* and ecosystems that are taoka being identified and mapped[343] in accordance with ECO-P2, adopt a precautionary approach towards activities in accordance with ~~IM–P15~~IM-P6(2).[344]

ECO-M3 – Identification of taoka

Local authorities must:

(1) work together with *mana whenua* to agree a process for:

(a) identifying *indigenous species* and ecosystems that are taoka, including those identified by *mana whenua* as requiring protection, and how they are valued with reference to mātauraka Māori,[345]

(b) describing the taoka identified in (1)(a),

---

[331] Clause (10(2)(b)(i), Schedule 1, RMA – consequential amendment arising from 00301.028 Port Otago
[332] 00315.037 Aurora Energy, 00115.021 Oceana Gold (New Zealand) Ltd
[333] 00223.100 Ngāi Tahu ki Murihiku
[334] 00226.219 Kāi Tahu ki Otago
[335] 00230.102 Forest and Bird
[336] 00230.102 Forest and Bird
[337] 00230.102 Forest and Bird
[338] 00139.129 DCC
[339] Consequential change to 00239.100 Federated Farmers
[340] 00138.033 QLDC
[341] 00016.013 Alluvium and Stoney Creek, 0017.011 Danny Walker and Others, 00321.022 Te Waihanga, 00137.009 DOC
[342] Consequential change to 00239.100 Federated Farmers
[343] 00020.018 Rayonier Matariki
[344] 00139.040 DCC, 00121.027 Ravensdown
[345] Clause 10(2)(b)(i), Schedule 1, RMA – consequential amendment arising from 00239.100 Federated Farmers

(c) mapping or describing the location of the taoka identified in (1)(a), and

(d) describing the values of each taoka identified in (1)(a), and

(2) notwithstanding (1), recognise that *mana whenua* have the right to choose not to identify taoka and to choose the level of detail at which identified taoka, or their location or values, are described, and

(3) to the extent agreed by *mana whenua*, amend their *regional* and *district plans* to include matters (1)(b) to (1)(d) above.

78. In terms of a S32AA analysis, I consider the suggested amendments provide clarity on how all indigenous species and ecosystems that are taoka are to be identified and managed and so no S32AA analysis is required.

7. Provision for mineral and aggregate extraction activities in ECO-P4

7.1. Introduction

79. ECO-P4 was discussed in section 10.9 of the s42A report, with my analysis in paragraphs [187] to [206]. This policy was also discussed in my brief of supplementary evidence (11 October 2022), where I recommended deleting a reference to the coastal environment, and my brief of supplementary evidence (24 February 2023) where I recommended including reference to mineral and aggregate extraction.

80. The recommended version of this provision currently reads:[346]

ECO-P4 – Provision for new activities

Maintain Otago's indigenous *biodiversity* by following the sequential steps in the *effects management hierarchy* <u>*(in relation to indigenous biodiversity)*</u>[347] set out in ECO-P6 when making decisions on plans, applications for *resource consent* or notices of requirement for the following activities in *significant natural areas* ~~(outside the coastal environment),~~[348] <u>or where they may adversely affect indigenous species and ecosystems that are taoka that have been identified by mana whenua as requiring protection'</u>[349]:

[346] This version includes the recommendations from the hearing reports prepared under s42A of the RMA, all supplementary evidence, and the opening statements.
[347] 00016.013 Alluvium and Stoney Creek, 0017.011 Danny Walker and Others, 00321.022 Te Waihanga, 00137.009 DOC
[348] 00237.007 Beef & Lamb and DINZ, 00137.016 DOC, 00226.035 Kāi Tahu ki Otago, 00120.011 Yellow-eyed Penguin Trust, 00230.016 Forest and Bird
[349] Clause 10(2)(b)(i), Schedule 1, RMA -consequential change from 00239.100

(1) the development, operation, maintenance[350] or upgrade of *nationally significant infrastructure*[351] and *regionally significant infrastructure* that has a *functional need*[352] or *operational need* to locate within the relevant *significant natural area(s)* or where they may adversely affect indigenous species or ecosystems that are taoka,

(1A) the ~~new use or~~ development, operation and maintenance of mineral extraction activities that provide a significant national public benefit that could not otherwise be achieved within New Zealand and that have a *functional need* or *operational need* to locate within the relevant *significant natural area(s)* or where they may adversely affect indigenous species or ecosystems that are taoka,[353]

(1B) the ~~new use or~~ development, operation and maintenance of aggregate extraction activities that provide a significant national or regional benefit that could not otherwise be achieved within New Zealand and that have a *functional need* or *operational need* to locate within the relevant *significant natural area(s)* or where they may adversely affect indigenous species or ecosystems that are taoka,[354]

(2) the development of *papakāika*, marae and ancillary facilities associated with customary activities on ~~Māori land~~ Native reserves and *Māori Land*,[355] [356]

(2A) the sustainable use of *mahika kai*[357] and kaimoana (seafood) by *mana whenua*,[358]

(3) the use of ~~Māori land~~ Native reserves and *Māori land* ~~in a way that will make a significant contribution~~[359] to enable *mana whenua* to maintain their connection to their whenua and enhance~~ing~~ ~~the~~[360] social, cultural or economic well-being, ~~of *takata whenua*,~~[361]

(4) activities that are for the purpose of protecting, restoring or enhancing a *significant natural area* or indigenous species or ecosystems that are taoka, or

(5) activities that are for the purpose of addressing a severe ~~and~~ or[362] immediate *risk* to public health or safety.

[350] 00311.022 Trustpower Limited
[351] 00314.001 Transpower
[352] 00315.046 Aurora Energy, 00138.116 QLDC
[353] 00115.022 Oceana Gold (New Zealand) Ltd
[354] 00115.022 Oceana Gold (New Zealand) Ltd
[355] ~~'Māori land' applies to land in native reserves that are held under Te Ture Whenua Māori act 1993~~
[356] 00234.009 Te Rūnanga o Ngāi Tahu, 00226.053 Kāi Tahu ki Otago, 00010.002 Cain whanau
[357] 00226.0038 Kāi Tahu ki Otago
[358] 00226.220 Kāi Tahu ki Otago
[359] 00234.032 Te Rūnanga o Ngāi Tahu
[360] 00234.032 Te Rūnanga o Ngāi Tahu
[361] 00234.032 Te Rūnanga o Ngāi Tahu
[362] 00139.130 DCC

7.2. Submissions and evidence

81. Ms Hunter for Oceana Gold supports the alignment of the mineral and aggregate extraction pathway in ECO-P4 with the National Policy Statement for Freshwater Management 2020 (NPSFM). She considers mineral extraction activities should provide a 'national or regional benefit' and that the qualifier 'could not otherwise be achieved within New Zealand', as currently drafted, should be deleted from clauses (1A) and (1B) of ECO-P4.[363] In her oral evidence to the Hearing Panel, Ms Collie for Matakanui Gold Ltd, also supported that the mineral extraction pathway in ECO-P4 is aligned with the NPSFM.

82. In her oral evidence to the Hearing Panel, Ms Mead for Fulton Hogan, supported the removal of the qualifier 'that could not otherwise be achieved within New Zealand' from ECO-P4(1B) for aggregate extraction activities.

7.3. Analysis

83. I do not recommend applying the more lenient approach of the NPSFM in clauses (1A) and (1B) of ECO-P4 because mineral and aggregate extraction activities are typically high impact and can result in unavoidable, irreversible adverse effects on significant natural areas (SNAs) and taoka values. The qualifier on activities provided for in ECO-P4 is deliberately explicit and tight because a more lenient qualifier could result in further loss of Otago's significant indigenous biodiversity and taoka. Therefore, I consider it more appropriate to adopt the approach from the National Policy Statement for Highly Productive Land (NPSHPL) towards mineral and aggregate extraction because it sets a higher test compared to the NPSFM and will be more effective at ensuring SNA and significant taoka values are not compromised, which is in line with the ECO objectives. The current drafting in ECO-P4, 'Could not otherwise be achieved within New Zealand', is also the same wording used in the E draft NPSIB for mineral and aggregate extraction activities within SNAs.[364]

84. The other activities provided for in ECO-P4 are supported by higher order statutory documents, such as the RMA and National Policy Statements. For instance, activities listed under clause (1) provide for nationally and regionally significant infrastructure, which is supported by the National Policy Statement on Urban Development (NPSUD), National Policy Statement for Renewable Electricity Generation (NPSREG), National Policy Statement on Electricity Transmission (NPSET) and sections 6(h) and 7(j) of the RMA. Therefore, I think it is reasonable that the pathway provided for mineral and aggregate extraction activities in ECO-P4 is narrower because these extraction activities do not enjoy the same level of support through national policy statements as the other activities provided for in ECO-P4. For these reasons, I do not recommend accepting the proposals of Ms Hunter, Ms Collie and Ms Mead.

[363] Claire Hunter for Oceana Gold, paras [3.4]-[3.5]
[364] Clause 3.11(2) of E draft NPSIB

85. At paragraph 32 of my opening statement, I recommend removing 'new use' and including 'operation, maintenance' in ECO-P4(1A) and ECO-P4(1B) as it aligns with the language used in ECO-P4(1), which I still support and recommend.

7.4. Final recommendation

86. My final recommended amendments to the as notified version of the PORPS are:

ECO-P4 – Provision for new activities

Outside the coastal environment, ~~M~~maintain[365] Otago's indigenous *biodiversity* by following the sequential steps in the *effects management hierarchy (in relation to indigenous biodiversity)*[366] set out in ECO-P6 when making decisions on plans, applications for *resource consent* or notices of requirement for the following activities in *significant natural areas* or where they may adversely affect *indigenous species* and ecosystems that are taoka that have been identified by *mana whenua* as requiring protection:[367]

(1) the development, operation, maintenance[368] or upgrade of *nationally significant infrastructure*[369] and *regionally significant infrastructure* that has a *functional need*[370] or *operational need* to locate within the relevant *significant natural area(s)* or where they may adversely affect indigenous species or ecosystems that are taoka,

(1A) the development, operation and maintenance of *mineral* extraction activities that provide a significant national public benefit that could not otherwise be achieved within New Zealand and that have a *functional need* or *operational need* to locate within the relevant *significant natural area(s)* or where they may adversely affect *indigenous species* or ecosystems that are taoka,[371]

(1B) the development, operation and maintenance of aggregate extraction activities that provide a significant national or regional benefit that could not otherwise be achieved within New Zealand and that have a *functional need* or *operational need* to locate within the relevant *significant natural area(s)* or where they may adversely affect *indigenous species* or ecosystems that are taoka,[372]

(2) the development of *papakāika*, marae and ancillary facilities associated with customary activities on Native reserves and *Māori land*,[373]

[365] Clause (10(2)(b)(i), Schedule 1, RMA – consequential amendment arising from 00301.028 Port Otago
[366] 00016.013 Alluvium and Stoney Creek, 0017.011 Danny Walker and Others, 00321.022 Te Waihanga, 00137.009 DOC
[367] Consequential change to 00239.100 Federated Farmers
[368] 00311.022 Trustpower Limited
[369] 00314.001 Transpower
[370] 00315.046 Aurora Energy, 00138.116 QLDC
[371] 00115.022 Oceana Gold (New Zealand) Ltd
[372] 00115.022 Oceana Gold (New Zealand) Ltd
[373] 00234.009 Te Rūnanga o Ngāi Tahu, 00226.053 Kāi Tahu ki Otago, 00010.002 Cain whanau

(2A) the sustainable use of *mahika kai*[374] and kaimoana (seafood) by *mana whenua*,[375]

(3) the use of Native reserves and *Māori land* ~~in a way that will make a significant contribution~~[376] to enable *mana whenua* to maintain their connection to their whenua and enhance~~ing~~ ~~the~~[377] social, cultural or economic well-being, ~~of *takata whenua,*~~[378]

(4) activities that are for the purpose of protecting, restoring or enhancing a *significant natural area* or indigenous species or ecosystems that are taoka, or

(5) activities that are for the purpose of addressing a severe ~~and~~ or[379] immediate risk to public health or safety.

87. In terms of a S32AA analysis, I have recommended no further amendments to ECO-P4 additional to those contained in my opening statement. Therefore, , no S32AA analysis is required.

8. Existing use rights in relation to ECO-P5

8.1. Introduction

88. ECO-P5 was discussed in section 10.10 of the s42A report, with my analysis in paragraphs [222] to [236]. This policy was also discussed in my brief of supplementary evidence (11 October 2022), where I recommended deleting the reference to the coastal environment.

89. The recommended version of this provision currently reads:[380]

ECO-P5 – Existing activities in *significant natural areas*

~~Except as provided for by ECO–P4,~~ ~~p~~Provide[381] for existing activities that are lawfully established[382] within *significant natural areas* ~~(outside the coastal environment)~~[383] and that may adversely affect indigenous species and ecosystems that are taoka, if:

(1) the continuation, maintenance and minor upgrades of an existing activity that is lawfully established[384] will not lead to the loss (including through

[374] 00226.0038 Kāi Tahu ki Otago
[375] 00226.220 Kāi Tahu ki Otago
[376] 00234.032 Te Rūnanga o Ngāi Tahu
[377] 00234.032 Te Rūnanga o Ngāi Tahu
[378] 00234.032 Te Rūnanga o Ngāi Tahu
[379] 00139.130 DCC
[380] This version includes the recommendations from the hearing reports prepared under s42A of the RMA, all supplementary evidence, and the opening statements.
[381] Under RMA Schedule 1, Clause 16(2) of the RMA amend the cross-referencing error
[382] 00230.104 Forest and Bird
[383] 00237.007 Beef & Lamb and DINZ, 00137.016 DOC, 00226.035 Kāi Tahu ki Otago, 00120.011 Yellow-eyed Penguin Trust, 00230.016 Forest and Bird
[384] 00230.104 Forest and Bird

cumulative loss) of extent or degradation[385] of the ecological integrity of any *significant natural area* or indigenous species or ecosystems that are taoka, and

(2) the adverse *effects* from the continuation, maintenance and minor upgrades of an existing activity that is lawfully established[386] are no greater in character, spatial extent, intensity or scale than they were before this RPS became operative.

8.2. Submissions and evidence

90. Ms Jopp for Federated Farmers submits clause 3.11 of the NPSHPL will be frustrated if there are no changes throughout the ECO chapter to provide a greater balance with existing use rights on highly productive land.[387] She also considers ECO-P5 conflicts with the precedent set by the Environment Court in *Southland District Council v Peter Donald Charters and CP Trustees Limited [2022] NZEnvC 215* regarding existing use rights, in which the decision expressly says that there is no obligation on a landowner to allow indigenous regrowth to grow into indigenous forest.[388]

91. At the hearing, Commissioner Cubitt also raised similar concerns regarding ECO-P5 and questioned the relationship between existing use rights and ECO-P5. He provided the scenario of indigenous vegetation regrowth on farmland which requires clearance to maintain productive land and questioned how this would work under ECO-P5 as an existing use right activity.

8.3. Analysis

92. Section 10 of the RMA protects certain existing uses in relation to land. I consider statutory rights cannot be limited by the pORPS, and that there is a lack of compatibility between ECO-P5 and s10 of the RMA. Therefore, I recommend deleting ECO-P5.

93. I recommend a consequential amendment to remove the reference to 'ECO-P5' from the chapeau of ECO-P3.

94. I recommend a consequential amendment to remove the reference to 'ECO-P5' from ECO-P7.

8.4. Final recommendation

95. I recommend the following amendments to ECO-P5:

[385] Clause 16(2), Schedule 1, RMA (remove the italics from 'degradation' as this term is not defined in the pORPS)
[386] 00230.104 Forest and Bird
[387] Ms Jopp for (Federated Farmers of New Zealand), para [15.3] of Submissions on behalf of Federated Farmers on Ecosystems and Indigenous Biodiversity
[388] Ms Jopp for (Federated Farmers of New Zealand), para [15.6] and ECO-P5 - reasons for relief sought of Submissions on behalf of Federated Farmers on Ecosystems and Indigenous Biodiversity

~~**ECO-P5 — Existing activities in significant natural areas**~~

~~Except as provided for by ECO–P4, p~~Provide[389] ~~for existing activities~~ that are ~~lawfully established~~[390] ~~within *significant natural areas* (outside the coastal environment)~~[391] ~~and that may adversely affect indigenous species and ecosystems that are taoka, if:~~

~~(1) the continuation, maintenance and minor upgrades of an existing activity~~ that is ~~lawfully established~~[392] ~~will not lead to the loss (including through cumulative loss) of extent or~~ degradation[393] ~~of the ecological integrity of any *significant natural area* or indigenous species or ecosystems that are taoka, and~~

~~(2) the adverse *effects* from the continuation, maintenance and minor upgrades of an existing activity~~ that is lawfully established[394] ~~are no greater in character, spatial extent, intensity or scale than they were before this RPS became operative.~~[395]

96. I propose that ECO-P5 be removed from the pORPS because it is contrary to the exercise of existing use rights conferred by s10 RMA.

97. The policy is therefore unlawful. No s32AA evaluation is needed.

9. Kāi Tahu Kaitiakitaka in relation to biodiversity management

9.1. Introduction

98. ECO-M7A was not discussed in the s42A report, but was recommended to be adopted in my opening statement. The recommended version of this provision currently reads:

ECO-M7A — Kāi Tahu kaitiakitaka

Local authorities must partner with Kāi Tahu in the management of indigenous biodiversity to the extent desired by mana whenua, including by:

(1) actively supporting the role of mana whenua as kaitaiki,

(2) facilitating opportunities for mana whenua to be involved in resource management (including decision making),

[389] Under RMA Schedule 1, Clause 16(2) of the RMA amend the cross-referencing error
[390] 00230.104 Forest and Bird
[391] 00237.007 Beef & Lamb and DINZ, 00137.016 DOC, 00226.035 Kāi Tahu ki Otago, 00120.011 Yellow-eyed Penguin Trust, 00230.016 Forest and Bird
[392] 00230.104 Forest and Bird
[393] Clause 16(2), Schedule 1, RMA (remove the italics from 'degradation' as this term is not defined in the pORPS)
[394] 00230.104 Forest and Bird
[395] 00315.037 Aurora Energy, 00115.021 Oceana Gold (New Zealand) Ltd

(3) enabling the mahika kai practices of mana whenua in accordance with tikaka,

(4) working with mana whenua to determine appropriate management approaches for indigenous biodiversity within native reserves and Māori land,

(5) supporting mana whenua initiatives that contribute to restoring or enhancing te hauora o te koiora (the health of indigenous biodiversity),

(6) where appropriate, incorporating Kāi Tahu mātauraka and tikaka in indigenous biodiversity management and monitoring, and

(7) providing relevant information to mana whenua for the purposes of indigenous biodiversity management and monitoring.

9.2. Submissions and evidence

99. In Mr Bathgate's evidence in chief, he raises concerns that the ECO methods fail to address how Kāi Tahu as kaitiaki will be involved in biodiversity management and proposes a new ECO method to resolve this matter.[396]

9.3. Analysis

100. At paragraphs 25 to 26 of my opening statement, I address Mr Bathgate's proposed new method and support the inclusion of this method in the ECO chapter because it is consistent with MW-P1, MW-P2, MW-P3, IM-P3 and s6(e) of the RMA. I consider ECO-M6 is unsatisfactory because it does not provide guidance on how Kāi Tahu as kaitaki will be involved in biodiversity management, it only provides guidance on how councils will work with individuals, landowners, community groups and other agencies in implementing the ECO provisions.

9.4. Final recommendation

101. My final recommended amendments to the as notified version of the pORPS are to insert a new Method:

ECO-M7A — Kāi Tahu kaitiakitaka[397]

Local authorities must partner with Kāi Tahu in the management of indigenous biodiversity to the extent desired by mana whenua, including by:

(1) actively supporting the role of mana whenua as kaitaiki,

(2) facilitating opportunities for mana whenua to be involved in resource management (including decision making),

(3) enabling the mahika kai practices of mana whenua in accordance with tikaka,

[396] Michael Bathgate for Kāi Tahu ki Otago, paras [93]-[94]
[397] 00226.232 Kāi Tahu ki Otago

(4) working with mana whenua to determine appropriate management approaches for indigenous biodiversity within native reserves and Māori land,

(5) supporting mana whenua initiatives that contribute to restoring or enhancing te hauora o te koiora (the health of indigenous biodiversity),

(6) where appropriate, incorporating Kāi Tahu mātauraka and tikaka in indigenous biodiversity management and monitoring, and

(7) providing relevant information to mana whenua for the purposes of indigenous biodiversity management and monitoring.

102. In terms of a S32AA analysis, I consider this new method to be more effective than ECO-M6 at achieving the outcome sought in ECO-O3 by providing clarity on Kāi Tahu's role in indigenous biodiversity management as kaitiaki.

10. Threatened species

10.1. Submissions and evidence

103. Mr Brass and Mr McKinlay for DOC both propose two new objectives in the ECO chapter that refer specially to threatened species, as follows[398]:

"That activities within Otago do not contribute to any worsening of the treat classification of indigenous threatened species found within Otago"

"In terms of the RPS, that activities within Otago contribute to improvements in the threat classification of threatened indigenous species found within Otago"

104. They consider the ECO chapter needs to reference the New Zealand Threat Classification System (NZTC). Dr Richarson, for DOC, supports Mr Brass and Mr McKinlay's proposal to include two new objectives relating to threatened species.

10.2. Analysis

105. I consider the two proposed objectives use language that is akin to a policy., I consider the outcomes are captured by other provisions in the ECO chapter. For instance, *'that activities within Otago do not contribute to any worsening of the treat classification of indigenous threatened species found within Otago'* is already captured in APP3(1)(c) and APP4(1)(d) which state biodiversity offsetting and compensation are not available if an activity will result in the likely worsening of the threat classification of any indigenous biodiversity. I consider ECO-P8 addresses Mr Brass's second proposed objective '*In terms of the RPS, that activities within Otago contribute to improvements in the threat classification of threatened indigenous species found within Otago'* because ECO-P8 sets

[398] Summary of evidence of Murray Brass for DOC, para [19]; Summary of evidence of Bruce Mckinlay for DOC, para [3]

out the actions required to improve the extent, occupancy and condition of Otago's indigenous biodiversity to achieve ECO-O2. This applies to threatened species because threatened species are a subset of indigenous biodiversity. Furthermore, APP3(2)(b) requires an offsetting proposal to demonstrate that the offset can 'reasonably achieve a net gain', which responds to Mr Brass's second proposed objective.

10.3. Final recommendation

106. I recommend no further amendments.

11. Wilding *conifers*

107. A number of submitters, including DCC and DOC, draw attention to the impacts of pest species generally on indigenous biodiversity, and seek that the pORPS is amended to incorporate broader policy direction on managing pest species (in addition to retaining the existing direction in ECO-P9 regarding wilding conifers). Ms Boyd has addressed these submissions in *Reply report 1: Introduction and general themes* and recommends broadening the scope of the LF-LS chapter (including its objectives) to address land environments more widely, as well as a new policy managing pest species that incorporates the content of ECO-P9 and NFL-P5. She has also recommended consequential amendments to delete ECO-P9, ECO-M5(6), paragraph 3 of ECO-E1, and ECO-AER4 as a result of incorporating that content into LF-LS. For completeness, I note that Ms Boyd discussed this approach with me, and I agree with her recommendations.

12. Prioritisation of montane tall tussock grasslands in ECO-M2

12.1. Submissions and evidence

108. In his questions to Dr Lloyd, Commissioner Cubitt queried the prioritisation of tall tussock grassland in ECO-M2(5) given how extensive it is. In his response, Dr Lloyd said that tussock grassland in general should not be prioritised for protection. He also noted that as indigenous vegetation it provides habitat and enables a successional pathway to woody indigenous vegetation. He also considered that while the grassland below the treeline is mostly not representative, important examples of it would meet rarity, diversity, or the ecological context criteria. [399]

109. In her submission to the Hearing Panel, Ms Jopp for Federated Farmers raised concerns around the protection of all tall montane grassland in Otago. She submitted there needs to be clear recognition in the pORPS that stock grazing on tussock grassland has positive

[399] Response to minute 12: Commissioner Cubitt Questions to Dr Lloyd, Question 3[400] Summary of evidence of Harriet Jopp for Federated Farmers, paras [10.11]

biodiversity impacts in the High Country and that this activity can continue within significant natural areas, which will require an amendment to ECO-P5[400]

12.2. Analysis

110. I acknowledge that given how widespread montane tall tussock grasslands are in Otago it is not fitting for them to be prioritised for mapping under ECO-M5(2), however there is no scope to remove montane tall tussock grasslands from the provision.

111. I note that my recommendation to delete ECO-P5 may address, in part, Ms Jopp's concerns.

12.3. Final recommendation

112. I do not recommend any further amendments.

13. ECO-O1 – Indigenous *biodiversity*

13.1. Introduction

113. ECO-O1 was discussed in section 10.5 of the s42A report, with my analysis in paragraphs [105] to [109].

114. The recommended version of this provision currently reads:[401]

> **ECO-O1 – Indigenous *biodiversity***
>
> Otago's indigenous *biodiversity* is healthy and thriving and any net[402] decline in ~~quality~~ condition,[403] quantity and diversity is halted.

13.2. Submissions and evidence

115. Mr Farrell for Otago Fish and Game Council, Real Group Ltd and NZSki Ltd proposes ECO-O1 is amended to 'Otago's ecosystems and indigenous biodiversity…'. He considers, based on ecological advice[404], that 'ecosystems are more than indigenous biodiversity' and so the objective should recognise the ecosystem part of the chapter.[405]

[400] Summary of evidence of Harriet Jopp for Federated Farmers, paras [10.11]
[401] This version includes the recommendations from the hearing reports prepared under s42A of the RMA, all supplementary evidence, and the opening statements.
[402] 00024.010 City Forests Limited
[403] 00306.042 Meridian
[404] Jayde Edward Malthus Couper for Otago Fish and Game Council, para [128]
[405] Ben Farrell for Otago Fish and Game Council, Realnz and NZSki, para [96]

13.3. Analysis

116. I do not recommend amending ECO-O1 to 'Otago's ecosystems and indigenous biodiversity' because 'biological diversity' is defined in the RMA as 'means the variability among living organisms, and the ecological complexes of which they are a part, including diversity within species, between species, and of ecosystems'. Furthermore, I consider the wording 'Otago's ecosystems and indigenous..' will widen the scope of the objective by capturing ecosystems that are not indigenous, which is not the purpose of the ECO chapter.

13.4. Final recommendation

117. I do not recommend any further amendments.

14. Protection of trout and salmon habitat

14.1. Submissions and evidence

118. In her legal submission to the Hearing Panel, Ms Baker-Galloway for Otago and Central South Island Fish and Game Councils submits the protection of trout and salmon habitat should be provided for as part of protecting ecosystem health, as long as protection of the habitat of indigenous species is provided for.[406] Therefore, Fish and Game is seeking relief that establishes a framework for the habitat of trout and salmon in the pORPS[407] [OBJ]. This relief includes the addition of new provisions and amendments to existing provisions in the ECO chapter to provide for the protection of trout and salmon habitat.

14.2. Analysis

119. The ECO chapter is focussed on indigenous biodiversity and responds to the requirements set out in section 6(c), 30(1)(ga), and 31(1)(b)(iii) of the RMA and therefore I do not support this new framework to provide for the protection of trout and salmon habitat. . Furthermore, ecological advice from Dr Lloyd is that policies that generally aim to maintain, enhance, or restore freshwater habitats have the potential to benefit both indigenous freshwater biodiversity and exotic trout and salmon. Hence the specific reference to trout and salmon is not needed in such policies. Trout and salmon are predators that can have major adverse effects on indigenous freshwater biota (for example, many endangered inland galaxiid fish species are now restricted to streams that do not have salmonid fish). Policies should therefore focus on the protection of

[406] Summary of evidence of Maree Baker-Galloway, para [6]
[407] Summary of evidence of Maree Baker-Galloway, para [14]

indigenous freshwater biodiversity above protection of the habitats of trout or salmon".[408]

120. I do not recommend accepting Fish and Game's new framework in the ECO chapter for protecting trout and salmon habitat because the purpose of the ECO chapter is to maintain and protect indigenous biodiversity. Furthermore, the Land and freshwater chapter contains provisions[409] that contribute to the protection of trout and salmon habitat.

14.3. Final recommendation

121. I do not recommend any further amendments.

[408] Chapter 10: ECO - Ecosystems and indigenous biodiversity 4 May 2022, Appendix 10c, section 5.10
[409] LF-WAI-P1, LF-P7(1), LF-FW-P12, LF-FW-P13 and LF-FW-P14

15. Other changes

122. This section records changes that I recommend in response to evidence, or having further considered matters raised in submissions, which I consider are appropriate, but not significant.

15.1. Submissions, evidence, analysis and recommendations

Provision	Evidence	Change Sought	Recommendation
ECO—P7	Mr Bathgate for Kāi Tahu	**ECO-P7 – Coastal indigenous biodiversity <u>and taoka</u>** Indigenous biodiversity and taoka species and ecosystems in the coastal environment are managed by CE-P5 in addition to all objectives, ~~and~~ policies <u>and methods</u> of the ECO chapter except ECO-P3, ECO-P4, ECO-P5 and ECO-P6.	At paragraph 27 of my opening statement, I accept this submission. Also note with respect to ECO-P7: In *Reply report 8: CE – Coastal environment*, Mr Maclennan has responded to submissions seeking greater clarity about which provisions of the pORPS apply in the coastal environment and which do not, including the ECO provisions. I confirm that Mr Maclennan and I have discussed the approach he proposes in his report and I agree with the amendments he recommends. I do not repeat those here, but note they are incorporated into the reply report version of the pORPS attached to this suite of reply reports.
ECO—P10	Mr Bathgate for Kāi Tahu	... (2)(b) the effects of land-use activities on ~~the~~ coastal ~~environment~~ <u>biodiversity and ecosystems,</u> ...	At paragraph 28 of my opening statement, I support Mr Bathgate's suggested amendment to ECO—P10(2)(b) to amend 'the coastal environment' to 'coastal biodiversity and ecosystems'.

ECO—AER1	Michael Bathgate for Kāi Tahu	Replace 'quality' with 'condition'	Accept
ECO—AER2	Mr Bathgate for Kāi Tahu	Replace 'quality' with 'condition'	Accept
Occupancy	Ms James for DCC	~~Means the number of sites occupied in Otago.~~ Means in relation to measuring indigenous biodiversity, the number of units per area occupied by a species or taxa.	I accept this amendment because ecological advice is that 'the definition of occupancy suggested by Ms James is an improvement, for the reasons outlined in her evidence. It would also be an appropriate definition for ECO-O2, which anticipates a net increase in the extent and occupancy of Otago's indigenous biodiversity'[410].

123. In terms of s32AA, I consider the above amendments seek to improve the clarity the of the ECO chapter and so I do not consider a S32AA analysis is required.

15.2. Consistency between APP3 and APP4

124. As notified APP3 and APP4 were largely the same at notification. During the preparation of the final "Reply report version" dated 23 May 2023 some minor inconsistencies were noted between the drafting of APP3 and APP4 provisions.

125. Some inconsistencies are obviously deliberate in response to submissions and evidence as the appendices have developed through this process. However, changes to four clauses are proposed in the below table which correct minor errors, or omissions where a wording changed to one appendix should have been correspondingly made to the other. The inconsistencies are highlighted in the table below for ease of reference

APP3	APP4	Changes made and explanation
(1)(d) the removal or loss of viability of a naturally	(1)(c) removal or loss of ~~viability~~ health and *resilience*[1] of a	The term "viability" was changed in APP4(1)(c) to

[410] Appendix 1, para [43]
[1] 00230.149 Forest and Bird

	uncommon ecosystem type that is associated with indigenous vegetation or habitat of indigenous fauna; or		~~*naturally rare* or~~ naturally[2] uncommon ecosystem type that is associated with *indigenous vegetation*[3] or habitat of indigenous fauna, ~~or~~[4]	"health and resilience" in response to a submission from Forest and Bird[411] This wording change to APP4(1)(c) should have been correspondingly made to APP3(1)(d). APP4(1)(c) was included in APP4 as notified. APP3(1)(d) is new, and was included in response to DOC submission[412] For consistency, "viability" has been replaced with "health and resilience" in APP3(1)(d).
(1)(e)	the loss (including cumulative loss) of irreplaceable or vulnerable indigenous biodiversity, and	(1)(e)	the loss (including through cumulative loss) of irreplaceable or vulnerable indigenous biodiversity, and	This criterion was included into APP3 and APP4 in response to a submission by DOC[413] The word "through" has been unintentionally omitted from APP3(1)(e). For consistency and to correct a minor error, "through" has been added into APP3(1)(e)
(2)(a)	the offset addresses residual adverse *effects* that remain after implementing the sequential steps required by ECO-P6(1) to (3),	(2)(a)	compensation addresses only residual adverse effects that remain after implementing the sequential steps required by ECO-P65(1) to (4),	APP4(2)(a) includes the word "only". For consistency, "only" has now been included in APP3(2)(a) under Clause 16(2), Schedule 1 of the RMA as a minor amendment.
(2)(f)	the proposal demonstrates that the offset will[5] achieves~~[6]~~ *biodiversity* outcomes ~~beyond results~~ that are demonstrably	(2)(c)	compensation achieves positive *biodiversity* outcomes that would not have occurred without that compensation, and are additional to any remediation, mitigation or	These clauses in APP3 and APP4 were extremely similar when notified. The text 'the proposal demonstrates' was added to

[2] Consequential to 0137.014 DOC
[3] Clause 16(2), Schedule 1, RMA
[4] Clause 16(2), Schedule 1, RMA
[411] 00230.149
[412] 00137.158 DOC
[413] 00137.158 DOC
[5] 00137.158 DOC
[6] 00137.158 DOC

	additional to those[7] that would have occurred if the offset was not proposed, and are additional to any remediation or mitigation undertaken in relation to the adverse effects of the activity	offset undertaken in response to the adverse *effects* of the activity,[8]	APP3(2)(f) in response to a submission by DOC[414] For consistency, the text 'the proposal demonstrates' has been added to APP4(2)(c) also. The text 'demonstrably additional' was recommended to be added to APP3(2)(f) in response to a submission by DOC[415]. The text 'additional' was recommended to be added to APP4(2)(c) also in response to a submission by DOC[416] For consistency, the text 'demonstrably' has been added to APP4(2)(c). The text 'in relation to' was included in APP3(2)(f) in response to a submission by DOC[417] . The text 'in response to' was similarly included in response to a submission by DOC[418] For consistency, 'in relation to' has replaced 'in response to' in APP4(2)(c).

126. In terms of s32AA, I consider the above amendments seek to improve the consistency and clarity the of the ECO chapter and so I do not consider a S32AA analysis is required.

[7] 00139.139 DCC
[8] 00137.158 DOC
[414] 00137.158 DOC
[415] 00139.139 DOC
[416] 00137.158 DOC
[417] 00137.158
[418] 00137.158 DOC

EVALUATION OF BIODIVERSITY SUBMISSIONS ON THE PROPOSED OTAGO REGIONAL POLICY STATEMENT[1]

Kelvin Lloyd
19 May 2023

1. INTRODUCTION

1. Otago Regional Council (ORC) is considering submissions and evidence presented at the hearing on the biodiversity chapter of the proposed Otago Regional Policy Statement. ORC commissioned Wildland Consultants Ltd to evaluate these submissions and evidence and to respond to specific questions posed by ORC. Responses to these questions are set out below.

2. RESPONSES TO QUESTIONS FROM ORC

2.1 ORC Question 1

Ms Mealey for the Department of Conservation has provided various recommendations in relation to APP3 and APP4. Do you think her recommendations are appropriate?

- See her recommendations here: https://www.orc.govt.nz/media/13253/director-general-of-conservation-cassie-mealey-appendix-a-and-b.pdf
- The reasoning for her recommendations can be found in paragraphs 42 to 44 of her evidence: https://www.orc.govt.nz/media/13254/director-general-of-conservation-cassie-mealey.pdf

Note: APP4(2)(fa) in Ms Mealey's recommendations should read "when trading up forms part of biodiversity compensation, the proposal must demonstrate the indigenous biodiversity values gained are demonstrably of higher indigenous biodiversity value than those lost, ~~or~~ and the values lost are not considered vulnerable or irreplaceable," She provided this correction at the ECO hearing.

Evaluation

2. Bottom lines expressed in a stand alone policy in the West Coast RPS were important in the recent decision on the proposed Te Kuha coal mine. So Ms Mealey's recommendations in paragraph 39 of her evidence would provide more effective bottom lines.

3. Ms Mealey's Paragraph 42 expresses a reasonable concern that APP3 (1) (c) might prevent practical offsetting outcomes. One problem with APP3 (1) (c) is that it relates to loss of individuals rather than loss of taxa, which is its probable intent. The criterion could be amended to read:

[1] Reviewed by William Shaw, Lead Principal Ecologist.

The loss from an ecological district ~~of any individuals~~ of a Threatened or At Risk indigenous taxon, other than kānuka (Kunzea robusta and Kunzea serotina), under the New Zealand Threat Classification System (Townsend et al, 2008), or the loss of an indigenous ecosystem type from an ecological district.

4. I have consistently stated that loss of a taxon or ecosystem type from an ecological district should be a limit to offsetting or compensation. This is expressed in paragraph 58 of my 2017 evidence in chief[2], and in paragraphs 14, 64, 67, and 72 of my 2018 evidence in reply[3], This view was also shared by the ecologists involved in the case, as recorded by the Court[4]. However the Court determined that individuals should not be lost from an ecological district[5].

5. This is problematic, in that it really just means loss of individuals (all individuals must belong to an ecological district). Only in the case of the last individual could it refer to loss of a taxon from an ecological district. For example, one Otago skink individual could be lost from Macraes Ecological District leaving a healthy Otago skink population remaining in that ecological district. But that loss of one individual would be inconsistent with APP3(1)(a). This would mean that offsetting would be skipped for compensation, when the preference might be to offset adverse effects on Threatened taxa. E.g. provide for predator control to measurably benefit Otago skink. This is what Ms Mealey alludes to in para 42 of her evidence.

6. Ms Mealey suggests that App 4 (1) (b) should be deleted because removal of habitat may be relatively minor and could be compensated as Ms Mealey indicates in Paragraph 42 (a) (II). Deletion of App 4 (1) (b) could therefore be considered, as this may prevent practical compensation approaches.

7. I agree with Ms Mealey's recommendations in Paragraph 42 (b) of her evidence, relating to the deletion of APP3 (1) (b). At Risk taxa are not as vulnerable as Threatened taxa and are generally more widespread. For example, matagouri (*Discaria toumatou*) is currently classified as At Risk-Declining but a measureable loss of matagouri in Otago may not be significant, as the current distribution of matagouri is more extensive than its pre-human natural distribution. It is preferable that potentially adverse effects on At Risk species are dealt with through robust offsetting rather than with more risky compensation.

8. With respect to the additional criteria suggested in Paragraph 42 of Ms Mealey's evidence:

(d) There are no technically feasible or socially acceptable options by which to secure gains within acceptable timeframes.

[2] Statement of Evidence of Kelvin Michael Lloyd dated 27 October 2017. [ENV-2016-CHC-103]

[3] Statement of Evidence in Reply of Kelvin Michael Lloyd dated 26 January 2018. [ENV-2016-CHC-103]

[4] Paragraph 88, Decision No. [2019] NZEnvC41

[5] Paragraph 95, Decision No. [2019] NZEnvC41

9. It is difficult to see how social acceptance would be evaluated, but if no technical options exist, then this could be a sensible limit to offsetting and compensation. If the words 'socially acceptable' were removed from this limit, it could have value as an additional criterion.

(e) the effects on indigenous biodiversity are uncertain, unknown, or little understood, but potential effects are significantly adverse

10. If effects are uncertain, unknown, or little understood, it would be difficult to see how they could be offset, as potential losses need to be quantified and offsets must have measurable outcomes. It is not unusual to have effects that are poorly understood, but potential effects may be significantly adverse, especially for less-studied biodiversity, such as invertebrates, for example. This limit could nevertheless be applied to both offsetting and compensation.

(f) the proposed activity may contradict anticipated environmental results ECO-AER1 to ECO-AER4

11. ECO-AER1-4 relates to no further decline, and improvement in the quality, quantity, or diversity of Otago's indigenous biodiversity, effective involvement of Kai Tahu in indigenous biodiversity management, and that for SNAs, the area of land vegetated by wilding conifers is reduced. It would be reasonable to limit offsetting or compensation outcomes that don't support these anticipated results. Where an activity contradicts the anticipated results, offsetting or compensation should address that contradiction, resulting in consistency with the anticipated results. To address offsetting outcomes would require a change from 'activity' to 'offset/compensation outcomes'.

(g) it cannot be reasonably demonstrated that the proposed management methods for the offset/compensation are likely to achieve the predicted outcome

12. This limit is supported. Experimental management does get proposed from time-to-time, for example with respect to ephemeral wetland offsetting in the Deepdell North Mine application, and with respect to rare bryophyte translocation at the proposed Te Kuha mine. Such experimental approaches are highly risky as they may not result in successful offsetting or compensation.

(h) the offset/compensation actions may displace activities harmful to indigenous biodiversity to other locations

13. This is a standard limit for offsetting and could be used as a limit in the proposed Otago RPS.

14. Ms Mealey supports the 'no net loss' criterion in APP3(2)(b) but suggests it is reworded slightly, to demonstrate a net gain, and use a 'quantitative' loss and gain calculation. These suggestions have merit, as net gain is achieved only a little past net loss. A quantitative loss and gain calculation is important to allow verification.

15. Ms Mealey supports the intent of APP3(3)(a-c) but suggests these clauses are reworded to concisely improve clarity. These suggestions are supported.

2.2 ORC Question 2

Dr Keesing, for Manawa and Contact, has provided recommendations to APP3 and APP4. Do you think his recommendations are appropriate?

- His recommendations can be found in Pages 52 to 54 and his reasonings are in paragraphs 10.6 to 10.42 of his evidence: https://www.orc.govt.nz/media/13250/contact-energy-limited-vaughan-keesing.pdf

Note: His evidence for Manawa and Contact regarding APP3 and APP4 are the same.

Evaluation

16. Dr Keesing expresses a similar concern to Ms Mealey in Paragraph 10.11 of his evidence, relating to APP3 (1) (a). As noted above, amending this bottom line to refer to taxa, rather than individuals, would enable practical application of this criterion.

17. Dr Keesing also supports amendment of APP3 (1) (b), relating to At Risk species, because of the ambiguity of determining 'reasonably measurable loss' (paragraphs 10.16-10.18 of his evidence). This concern is shared by Ms Mealey who favours deletion of the criterion. Dr Keesing's preference is to amend the criterion such that reduction of population viability within the relevant ecological district is the test, but this may be equally difficult to determine. As such, Ms Mealey's solution is preferred.

18. Dr Keesing suggests that APP3 (1) (c) should be deleted as it would be difficult to assess (para 10.19 of Dr Keesing's evidence). As the conservation status of each species is determined at a national scale, national-scale population information is required in order to assess changes. Furthermore, the threat status of indigenous biota is not updated continuously, but every 3-5 or thereabouts years by an expert panel. An applicant or consent authority could not know in advance what decisions the expert panel would make on threat status, or whether they related to an Otago Region site. As written, APP3 (1)(d) would have limited effectiveness. It would be more effective if it was expressed in terms of the likelihood of a worsening of the conservation status.

19. Dr Keesing suggests (paras 10.20-10.21) that APP3 (1) (d) should be amended so that it only relates to examples of naturally uncommon ecosystem types where less than 30% of the ecosystem type is protected. This amendment is not supported as naturally uncommon ecosystem types that retain indigenous vegetation or indigenous fauna habitat all warrant protection.

20. Dr Keesing suggests that APP3 (1) (e) should be deleted or amended to remove the term 'vulnerability' (para 10.22 of his evidence). However, vulnerability and irreplaceability are widely used constraints to offsetting and can be evaluated based on evidence of irreplaceability or vulnerability. This criterion should be retained.

21. Dr Keesing considers (para 10.25) that it is important that less than minor residual effects are able to be excluded from the net loss (or preferably net gain) requirement of APP3 (2)(b). This is reasonable, and could be resolved by adding the word 'measurable' into APP3 (2)(a), i.e. the offset addresses the measurable residual effects. Very small effects would not be measurable. Dr Keesing also suggests (para 10.26) that reference to an explicit loss-gain calculation is removed from APP3(2)(b), on the grounds that offsetting does not always require a model. This is not supported, as offsetting always requires a loss-gain calculation. The clause does not refer to a model, and a simple calculation would be consistent with it and sufficient.

22. Dr Keesing suggests (para 10.27) that 'trading up' is allowed for in APP3 (2)(d). However, offsetting necessarily focusses on the same or similar values because there is no established accounting model that deals with unlike trades. APP 3(2)(d) should not therefore be amended in this way.

23. Dr Keesing does not explain why a preference for offsetting outcomes in perpetuity in APP3 (2)(e) is unnecessary (para 10.28 of Dr Keesing's evidence).

24. Dr Keesing suggests (para 10.29) that APP3 (2)(f) should be amended by removing the final sentence, which requires offsetting outcomes to be additional to any outcomes achieved by remediation and mitigation. This is not supported, as this wording would enable the double-counting of outcomes to be achieved by both mitigation and offsetting.

25. Dr Keesing objects to the requirement in APP3 (2)(h) which requires that an offset outcome is achieved within the duration of the resource consent (para 10.30 of his evidence). However, Dr Keesing is confusing the offset outcome with the ecological outcome. No net loss should certainly be achieved within the duration of the consent, but the net gain outcome can continue to grow after the duration of consent. APP3 (2)(h) should not be deleted.

26. APP3 (2)(i) should not be deleted, as Dr Keesing suggests (para 10.31), as it is important for additionality reasons.

27. Dr Keesing supports the matters in APP3 (3) (a-c) (para 10.33) but considers that scientific research is required to address APP3 (3)(d) (para 10.34), which relates to ecological context, a matter which ecologists routinely assess when describing and evaluating ecological significance. As such, the requirement to consider ecological context matters at the offset and impact sites does not require scientific research but can be done using available information. Description of the ecological context of the offset and impact sites is helpful, as this is an aspect of similarity that is less easy to fit into an offsetting currency as a metric.

28. Like Ms Mealey, Dr Keesing is of the view (para 10.40 (a)) that APP4 (1) (b), which relates to removal of viability of habitat of a threatened taxon, should be deleted as a limit as it may prevent practical compensation approaches. I agree that this limit could be deleted, particularly if other bottom lines are established as stand-alone policies.

29. Dr Keesing also suggests that APP4 (1) (c) is deleted (para 10.40 (b)), and gives scenarios of low value naturally uncommon ecosystems which should not be limits to compensation. However APP4 (1)(c) refers to naturally uncommon ecosystems that are associated with indigenous vegetation or fauna habitat. These would not be examples of low value ecosystems and protection is warranted for them. As such, this clause is best used as a stand-alone bottom line policy.

30. Dr Keesing also considers that APP4 (1)(d), which relates to a worsening of conservation status, should be deleted (para 10.40 (c)) of Dr Keesing's evidence. This is discussed above. If couched as a likelihood of a worsening of conservation status, this limit would have some practicality as a bottom line stand-alone policy.

31. Dr Keesing's remaining concerns about APP4 (para 10.41) are the same as he expressed with respect to offsetting limits. The responses to these concerns are the same as for the discussion above in relation to APP3.

2.3 ORC Question 3

Ms Hunter, Mr Hooson and Mr Christensen for Oceana Gold consider APP3 and APP4 should be amended, so that they are a set of principles which must be considered. They have suggested the offsetting and compensation appendices from the NSPFM be adopted. Do you think these principles could be applied to terrestrial ecology?

See recommendations to APP3 and APP4 on Pages 14 to 16:
https://www.orc.govt.nz/media/14148/ogl-eco-chapter-proposed-minerals-amendments-140423.pdf

Evaluation

32. The key difference in the OGL framework is that offsetting and compensation matters are couched as principles to have regard to, and thus are not specified as limits or bottom lines. This is a much weaker framework than the current APP3 and APP4 limits and criteria, which could be made stronger with bottom lines expressed as stand-alone policies. Otherwise, the principles are broadly similar to matters expressed in the limits and criteria outlined in APP3 and APP4. The OGL framework could be used universally across both terrestrial and freshwater ecosystems, as could the current APP3 and APP4 criteria.

2.4 ORC Question 4

Mr McKinlay for the Department of Conservation considers APP2 should be replaced with the significance criteria set out in the Exposure Draft NPSIB. Do you think the NPSIB criteria adequately applies to the identification of coastal indigenous biodiversity? And do you think the NPSIB criteria is less or more stringent than the significance criteria set out in APP2?

Evaluation

33. The exposure draft of the NPS-IB contains some problematic criteria. For example, the representativeness criterion for indigenous vegetation does not refer to an historic baseline. Assessment principle 3 under representativeness in the NPS-1B states that:

> *Significant indigenous vegetation has ecological integrity typical of the indigenous vegetation of the ecological district in the present-day environment. It includes seral (regenerating) indigenous vegetation that is recovering following natural or induced disturbance, provided species composition is typical of that type of indigenous vegetation.*

34. The ecologists who attended expert conferencing on the APP2 criteria all agreed that if the present day environment is the baseline, this would make all present day indigenous vegetation significant under the representativeness criterion. This would be much too broad.

35. A notable positive aspect of the exposure draft NPS-IB representativeness criterion is the capture of representative indigenous fauna assemblages. There is no direct analogue in the APP2 criteria for this, but in practice the APP2 fauna habitat criterion discussed below would capture similar values.

36. The ecological context criterion in APP2 is far better at capturing significant habitats of indigenous fauna than criteria in the exposure draft NPS-IB. There is no comparable criterion in the exposure draft NPS-IB to the APP2 ecological context criterion relating to significant indigenous fauna habitat, that all the ecologists attending expert conferencing agreed on:

> *(iii) An area that is important for a population of indigenous fauna during a critical part of their life cycle, either seasonally or permanently, e.g. for feeding, resting, nesting, breeding, spawning or refuges from predation*

37. This criterion would effectively capture important coastal and marine sites for indigenous fauna. The exposure draft NPS-IB criteria only have the potential to capture typical fauna assemblages that retain a moderate range of species in the coastal area.

38. A flawed vegetation representativeness criterion which would capture too much, and the failure to effectively capture important indigenous fauna habitats, are key deficiencies of the exposure draft NPS-IB significance criteria set.

2.5 ORC Question 5

All the ecological experts, who attended the APP2 caucusing, consider a guidance document to help with implementing the significance criteria in APP2 is required. Mr McKinlay for Department of Conservation recommends the following:

- https://www.doc.govt.nz/documents/science-and-technical/sfc327entire.pdf

- Wildland Consultants (2013). Guidelines for the Application of Ecological Significance Criteria for Indigenous Vegetation and Habitats of Indigenous Fauna in Canterbury Region. Report No. 2289i. Prepared for Environment Canterbury, June 2013.

Mr Hooson for Oceana Gold recommends the second guidance document as well. Do you think these would be appropriate as guidance documents for implementing APP2? If so, do you have a preference and why?

Evaluation

39. The Wildland Consultants (2013) guidance document focussed specifically on the Canterbury RPS criteria set and used examples from Canterbury to provide a Canterbury context. The Department of Conservation publication has different definitions of significance criteria and some criteria (e.g. naturalness) that would be redundant in the APP2 criteria. The Department of Conservation guidance also has a national scope and its examples are drawn from across Aotearoa New Zealand. In my opinion, a guidance document focussed specifically on the APP2 criteria and using an Otago context for examples would be more appropriate and useful.

2.6 ORC Question 6

Dr Thorsen for Oceana Gold has provided new recommendations on some of the criterion in APP2:

- He seeks Representativeness (c) is deleted because the criterion would have the effect of making any and all marine ecosystems significant (including intertidal habitats).
- He considers Rarity (ii) should have a regional focus not a national one as a regional focus can use more accurate information.
- He considers ecological context (iv) should be deleted because it is redundant and captured by multiple criteria or reword it to "A wetland which plays an important hydrological role in the natural functioning of a downstream waterway or coastal ecosystem".

See p.13 of his evidence for further information on the above recommendations: https://www.orc.govt.nz/media/14120/summary-statement-of-evidence-michael-thorsen-17-april-2023-oceanagold.pdf

Do you agree with Dr Thorsen's recommendations?

Evaluation

40. The ecologists who attended expert conferencing all agreed on a version of the representativeness criterion (c) which specified intertidal and subtidal habitats, and includes both fauna and flora components. However only one marine ecologist was present. Criterion (c) is analogous to criterion (a) but does not specify an historic baseline, and should, as without it, Dr Thorsen's concerns are valid. An appropriate baseline should be agreed among marine experts, as set out below:

An indigenous marine ecosystem, or habitat of indigenous marine fauna (including both intertidal and sub-tidal habitats, and including both faunal and floral components), that is characteristic or typical of the [appropriate baseline] natural marine ecosystem diversity of Otago.

41. APP2 allows rarity to be evaluated at a variety of scales, including at the relevant ecological district, region, or national scale. This is appropriate, as regions have a part to play in the protection of nationally significant values.

42. The current ecological context (iv) criterion refers to importance for biological, ecological, or hydrological reasons, whereas Dr Thorsen's suggested wording only refers to hydrology. The ecological context (iv) criterion would likely capture only large relatively intact wetlands associated with rivers, but could capture most wetlands associated with coastal lagoons and estuaries. The current wording is better as it captures the diverse ecological roles of wetlands, not just hydrological importance.

2.7 ORC Question 7

Ms James for DCC recommends amendments to the definition of 'occupancy'. She recommends the following:

~~Means the number of sites occupied in Otago.~~ Means in relation to measuring indigenous biodiversity, the number of units per area occupied by a species or taxa.

Do you think her recommendation to the definition is appropriate? See p. 2 of her evidence for more information: https://www.orc.govt.nz/media/14129/e-ib-katie-james-dcc-brief-of-evidence-18-april-2023.pdf

Evaluation

43. The definition of occupancy suggested by Ms James is an improvement, for the reasons outlined in paragraphs 8-10 of her evidence. It would also be an appropriate definition for ECO-O2, which anticipates a net increase in the extent and occupancy of Otago's indigenous biodiversity.

2.8 ORC Question 8

A number of submitters seek that 'mitigate' in ECO-P6 is amended to 'minimise'. Do you think this amendment would be more or less effective in maintaining biodiversity?

Evaluation

44. Section 5 of the RMA refers to mitigation of effects but 'mitigate' is not defined in the Act. Through case law, mitigate has come to be understood as 'actions that reduce the duration, intensity, and/or extent of effects at the point of impact'. It can include both minimisation and rehabilitation. It isn't clear what the effect of

replacing ‘mitigate’ with ‘minimise’ would be on the maintenance of indigenous biodiversity.

2.9 ORC Question 9

If ‘minimise’ is adopted, should the order of the effects management hierarchy in ECO-P6 be amended to ‘avoid, minimise, remedy’ to reflect the effects management hierarchy in the draft NPSIB and NPSFM? If so, why/why not?

Evaluation

45. Given that minimise has ‘avoid’ components, if ‘minimise’ was to be used then it would be best used following immediately after ‘avoid’.

2.10 ORC Question 10

Some submitters consider APP2 should be amended, so that an area is only considered a SNA if it meets the threshold for the rarity criterion or two or more of the criteria in APP2. Do you think this suggested is appropriate and what is the ecological justification for your reasoning?

Evaluation

46. The ‘one or more’ approach is widely used in New Zealand because each criterion represents a different aspect of significance and thus all criteria are important. So the ‘only rarity’ or ‘two or more’ criteria approach is not supported.

3. CONCLUSIONS

47. The Department of Conservation submission provided some useful suggestions and, in particular, identified that stand-alone policies relating to the appropriateness of activities should not be mixed into the offsetting and compensation appendices. If guidance is prepared on the APP2 significance criteria, an Otago-focussed set of guidelines should be prepared. A suggested framework is outlined in Appendix 1 for the integration of responses to the submissions on the APP3 and APP4 criteria.

STAND ALONE POLICIES

Activities shall be designed and undertaken in a way that does not cause:

(1) the loss from an ecological district ~~of any individuals~~ of a Threatened or At Risk indigenous taxon, other than kānuka (*Kunzea robusta* and *Kunzea serotina*), under the New Zealand Threat Classification System (Townsend et al, 2008), or the loss of an indigenous ecosystem type from an ecological district.

(2) the removal or loss of viability of a naturally uncommon ecosystem type that is associated with indigenous vegetation or habitat of indigenous fauna, or

(3) the loss (including cumulative loss) of irreplaceable or vulnerable indigenous biodiversity; or

(4) the likely worsening of the conservation status of any Threatened or At Risk indigenous biodiversity listed under the New Zealand Threat Classification System (Townsend *et al*. 2008).

APP3 CRITERIA FOR BIODIVERSITY OFFSETTING

(1) Biodiversity offsetting may be available if the following criteria are met:

- (a) the offset addresses the measurable residual adverse effects that remain after implementing the sequential steps required by ECO–P6(1) to (3),
- (b) the proposal demonstrates that the offset can reasonably achieve a net gain in indigenous biodiversity, as measured by type, amount and condition at both the impact and offset sites using an explicit quantitative loss and gain calculation,
- (c) the offset is undertaken where it will result in the best ecological outcome, and is preferably:
  - (i) close to the location of the activity, and
  - (ii) within the same ecological district or coastal marine biogeographic region,
- (d) the offset is applied so that the ecological values being achieved are the same or similar to those being lost,
- (e) the positive ecological outcomes of the offset endure at least as long as the impact of the activity and preferably in perpetuity,
- (f) the proposal demonstrates that the offset achieves biodiversity outcomes beyond results that are clearly additional to those that would have occurred if the offset was not proposed, and are additional to any remediation or mitigation undertaken in relation to the adverse effects of the activity,
- (g) the time delay between the loss of biodiversity and the gain or maturation of the biodiversity outcomes of the realisation of the offset is the least necessary to achieve the best possible outcome, the outcome of the offset is achieved within the duration of the resource consent, and
- (h) there are technically feasible options by which to secure gains within acceptable timeframes.

(i) the effects on indigenous biodiversity are not uncertain, unknown, or little understood, but potential effects are significantly adverse
(j) the proposed offset outcomes do not contradict anticipated environmental results ECO-AER1 to ECO-AER4
(k) it can be reasonably demonstrated that the proposed management methods for the offset are likely to achieve the predicted outcome
(l) the offset actions do not displace activities harmful to indigenous biodiversity to other locations
(m) any offset developed in advance of an application for resource consent must be shown to have been created or commenced in anticipation of the specific effect of the proposed activity and would not have occurred if that effect was not anticipated.

(2) Biodiversity offsetting proposed in any application for resource consent, plan change or notice of requirement, must address all matters in APP3(1), and:

(a) describe and measure biodiversity at the impact and offset sites using metrics that allow for biodiversity losses and gains to be quantified and balanced,
(b) use a disaggregated accounting system for important and high value species and vegetation types to ensure they are transparently accounted for.
(c) evaluate the ecological context, including the interactions between species, habitats and ecosystems, spatial connections and ecosystem function at the impact site and offset site,
(d) include consideration of mātauraka Māori, and
(e) include a separate biodiversity offset management plan prepared in accordance with good practice and which incorporates a monitoring and evaluation regime.

APP4 – CRITERIA FOR BIODIVERSITY COMPENSATION

Biodiversity compensation is available if the following criteria are met:

(a) compensation addresses only residual adverse effects that remain after implementing the sequential steps required by ECO–P5(1) to (4),
(b) compensation is undertaken where it will result in the best practicable outcome and preferably:
(i) close to the location of the activity, and
(ii) within the same ecological district or coastal marine biogeographic region,
(c) compensation achieves positive biodiversity outcomes that would not have occurred without that compensation,
(d) the positive biodiversity outcomes of the compensation are enduring,
(e) the time delay between the loss of biodiversity through the proposal and the gain or maturation of the compensation's biodiversity outcomes is the least necessary to achieve the best possible outcome,
(f) the outcome of the compensation is achieved within the duration of the resource consent,
(g) biodiversity compensation developed in advance of an application for resource consent must be shown to have been created or commenced in anticipation of the specific effect of the proposed activity and would not have occurred if that effect was not anticipated, and
(h) the biodiversity compensation is demonstrably achievable

(i) the proposed compensation outcomes do not contradict anticipated environmental results ECO-AER1 to ECO-AER4

(j) it can be reasonably demonstrated that the proposed management methods for the compensation are likely to achieve the predicted outcome

(k) the compensation actions does not displace activities harmful to indigenous biodiversity to other locations

Appendix 2

UNDER The Resource Management Act 1991

IN THE MATTER of the Proposed Otago Regional Policy Statement 2021

STATEMENT OF EVIDENCE OF BRYONY MILLER

Dated 22 May 2023

ROSS DOWLING MARQUET GRIFFIN
SOLICITORS
DUNEDIN

Telephone: (03) 477 8046
Facsimile: (03) 477 6998
PO Box 1144, DX YP80015

Solicitor: A J Logan

STATEMENT OF EVIDENCE OF BRYONY MILLER

Qualifications and Experience

1 My full name is Bryony Miller.

2 I am a Principal Marine and Freshwater Ecologist and the Technical Director of Marine and Freshwater Ecology at e3Scientific Ltd. I am part of the executive committee of the New Zealand Coastal Society and a member of the New Zealand Marine Sciences Society, the New Zealand Freshwater Science Society and Scientific Diver Working Group.

3 I hold the following tertiary qualifications; a Bachelor of Applied Science in Environmental Science from AUT and a Diploma in Marine Science from Toi Ohomai Institute of Technology. I hold a PADI DiveMaster and WorkSafe Certificate of Competence for Scientific Diving and have logged over 500 dives in NZ and the Pacific.

4 I have over 12 years' experience working in the marine science industry in Australia and New Zealand and 20 years experience as a professional SCUBA diver. Prior to working for e3Scientific I have been employed by Department of Conservation (DoC), Fisheries New Zealand (FNZ) under the Ministry for Primary Industries (MPI), NZ Marine Science Centre, Antarctica NZ and the Institute of Geological and Nuclear Sciences (GNS Science).

5 My experience includes providing ecological impact assessments in the marine and freshwater environments predominantly within the Otago, Southland (including Fiordland and Stewart Island) and Bay of Plenty catchments. I have developed an ecological impact assessment matrix for use within the marine environment where none has been specified by local Regional Councils and regularly provide technical input and review for Fisheries New Zealand and Regional Councils.

6 I have a demonstrated history of assessing impacts on benthic environments, including capital dredging impacts and fishing methods based on numerous subtidal marine investigations and special projects for FNZ. These include benthic marine assessments for capital dredging and blasting works in the Bluff Harbour, dredging impact assessments on benthic habitats in the Otago Harbour, compliance seabed and wharf surveys for ports, benthic infaunal and epifaunal investigations to support coastal activities within marine protected areas, the classification of cockle

(*Austrovenus stutchburyi*) suspended sediment threshold levels with regard to dredging, and shellfish stock assessments for FNZ. Whilst employed by MPI I worked on special projects assessing national and international dredging and trawling methods, discarding-at-sea and updating the observer services. I was also a member of the technical panel compiling data for the Flatfish Fisheries Plan (FLA3). Technical audits completed on behalf of regional and central government include hydro dam coastal discharge applications, Marlborough Sounds scallop fishery (SCA7) benthic investigations and fishery issues, cockle stock assessments for Marlborough and Nelson Bays (COC7A), port discharge activities, water abstractions, aquaculture activities and stormwater discharges. I have prepared ecological evidence for hearings, been involved in expert benthic caucusing and provided expert technical evidence at Environment Court.

Code of Conduct

7 While not strictly necessary for council hearings, I confirm that I have read the Code of Conduct for Expert Witnesses as contained in the Environment Court's Practice Note of 2023 and agree to comply with it.

8 The data, information, facts and assumptions I have considered in forming my opinions are set out in my evidence to follow. The reasons for the opinions expressed are also set out in the evidence to follow.

9 Unless I state otherwise, this evidence is within my sphere of expertise, and I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

Scope of Evidence

10 I have been engaged by the Otago Regional Council (ORC) to provide advice relating to APP2 the Significance Criteria for indigenous biodiversity from the proposed Otago Regional Policy Statement 2021.

11 The advice sought relates the application of APP2 to the coastal environment.

12 The scope of advice sought by ORC is specifically restricted to a summary statement of evidence dated 8 May 2023 presented by Dr Hilke Giles ("Dr Giles") in which following expert caucusing and the preparation of a Joint Witness Statement (JWS), Dr Giles has identified remaining issues with APP2 as it applies to the coastal environment from her perspective.

13 A further matter on which ORC has sought advice is what an appropriate baseline would be to include in the criterion representativeness (c)" in response to Dr Michael Thorsen's ("Dr Thorsen") summary statement of evidence dated 17 April 2023 (Table provided on page 13 and 14 of his summary evidence) stating that Representativeness (c) be deleted. For ease of reference; Representativeness (c) states: "*An indigenous marine ecosystem, or habitat of indigenous marine fauna (including both intertidal and sub-tidal habitats, and including both faunal and floral components), that is characteristic or typical of the natural marine ecosystem diversity of Otago*".

Response

14 Dr Giles summary statement of evidence includes an Attachment 1 which provides an update on her concerns about the proposed significance criteria identified in her Evidence in Chief.

15 For each significance criterion identified in Attachment 1, Dr Giles provides a conclusion on whether her concerns have been addressed through the agreed changes in the JWS and sets out her remaining issues.

16 I provide Table 1 below which adopts the information in Dr Giles' Attachment 1 and provides comment on matters which Dr Giles considers remain outstanding (BM comments).

17 Regarding the suggested deletion of Representativeness (c) by Dr Thorsen, Dr Kelvin Lloyd ("Dr Lloyd") provided advice to ORC stating:

> *'the ecologists who attend expert conferencing on APP2 all agreed on a version of the representativeness criterion (c) which specified intertidal and subtidal habitats and includes both fauna and flora components. However only one marine ecologist was present. Criterion (c) is analogous to criterion (a) but does not specify an historic baseline, and should, as without it, Dr Thorsen's concerns are valid. An appropriate baseline should be agreed among marine experts, as set out below:*
>
> *An indigenous marine ecosystem, or habitat of indigenous marine fauna (including both intertidal and sub-tidal habitats, and including both faunal and floral components), that is characteristic or typical of the [appropriate baseline] natural marine ecosystem diversity of Otago.*

18 It is my opinion that ecological baselines are difficult to define in the marine environment for reasons which include:

18.1 There is a poor understanding of the existing inventory of habitats and taxa that currently occur, particularly sub-tidally and their spatial distribution.

18.2 A marine baseline should reflect or at least recognise, the range of ecologies, communities and habitats that 'naturally' occur over time. For example, these can include changes in response to climatic and oceanographic shifts (e.g. related to La Nina/El Nino); natural periodicities/cycles in the biota; natural functional shifts (e.g. urchin/kelp interactions); present changes and trends in relation to climatic warming (e.g. distributional changes in taxa; responses to ocean acidification).

18.3 There is poor understanding of recreational, customary or historic commercial fishing spatial effort which can alter baselines.

18.4 In most cases it is too ambiguous to speculate on what the 'historical baseline' may have been other than in the broadest of terms. Similarly contemporary or one-off inventories may not adequately account for spatial and temporal changes that occur naturally.

19 I note that Representativeness within the terrestrial environment is supported by the Ecological District Framework and/or Land Environments of New Zealand (LENZ) classification. Similar or comparable frameworks have not been established in the marine environment; however, the principles remain valid with respect to variability in physical environmental attributes driving biodiversity. Sites recognised as biologically important in the marine environment include Marine Reserves, Mātaitai Reserves, Marine Mammal Sanctuaries and Important Bird Areas (IBA's) among others. Without a framework (or defined "baseline") to support an assessment of representativeness I consider the reserves, sanctuaries and IBAs to contain ecological attributes that are identified as representative of these marine environments. These sites would likely trigger significance criteria under rarity, diversity or ecological context provisions.

20 Kelp forests are an example of an important ecological habitat which are understood to be at risk due to a number of anthropogenic and natural factors. This habitat may not be triggered under the other APP2 criterion (rarity, diversity or ecological context) but represents a core structural component of the indigenous biodiversity in the marine environment, whether it is degraded or not. Therefore, I believe the Representativeness (c) criteria to be an important component within APP2 but believe better clarity about how this is assessed is required.

21 As I was not part of the caucusing it would not be appropriate or helpful to suggest a change to Representativeness Criterion (c) as I note that the JWS did not appear to

express any reservations with the existing wording. I suggest that to assist in the interpretation of this criterion in the marine environment, perhaps a definition of ‘marine ecological baseline’ would need to be developed or adopted (if one has been applied elsewhere) by appropriately experienced marine ecologists.

BRYONY MILLER

22 May 2023

Table 1: Attachment 1 Dr Giles (HG) summary statement of evidence with comments.

Significance Criteria for Indigenous Biodiversity (Proposed RPS APP2)	HG Outstanding Concerns	Proposed change recommended by HG	BM Comments
An area is considered to be a significant natural area if it meets any one or more of the criteria below			HG acknowledged (with other experts) that meeting only one of the criteria is a low threshold for significance but sought no specific change. I agree to an extent that it is a low threshold but consider the 'one or more criteria' the correct approach taking into account the various proposed clarifications agreed by the JWS.
Diversity (e) An area that supports a high diversity of indigenous ecosystem types, indigenous taxa or has changes in species composition reflecting the existence of diverse natural features or gradients	HG concern about ambiguity of the term 'diverse natural features' not being addressed by the majority agreement in the JWS. HG provides an alternative which she considers would ensure that 'high diversity' is also reflected in this part of the criterion and which would fully address her concerns.	An area that supports a high diversity of indigenous ecosystem types **or** indigenous taxa **in the context of similar areas and similar ecosystem types including ecosystems** that have changes in species composition reflecting the existence of diverse natural features or gradients.	I consider the changes sought are a nuanced version of the original APP2 terms. I am neutral on the change proposed.
Distinctiveness (f) An area that supports or provides habitat for (ii) Indigenous species that are endemic to the Otago region			
	HG sought deletion of this subclause on the basis that '…endemic alone is not sufficient to render a	~~Indigenous species that are endemic to the Otago region~~	Regional marine endemism occurs in NZ and the scale at which it occurs depends on the phyla. Locally endemic populations/ assemblages of sponges for

	population significant in the coastal marine area…'		example are known for Taranaki and Bay of Plenty regions. Scales reported range from harbours to 100-200 km of coastline. I am unaware if such endemism occurs within the Otago marine area of jurisdiction; however, I find it difficult to consider that an area which supports/provides habitat for an endemic regional (marine) population of taxa would not be significant. Therefore, I disagree with HG that the provision should be deleted for the reason stated. Triggering significance based on endemism may also trigger the Rarity (d)(i) provision.
Ecological Context (g) The relationship of the area with its surroundings (both within Otago and between Otago and the adjoining regions), including		The relationship of the area with its surroundings ~~(both within Otago and between Otago and the adjoining regions),~~ including	I agree with HG that these words could be struck out as redundant and that context for the coastal environment should be interpreted consistently with NZCPS policy 11(b) provisions and in particular: (*v) habitats, including areas and routes, important to migratory species, and* *(vi) ecological corridors, and areas important for linking or maintaining biological values identified under this policy*
(ii) An area that has an important buffering function that helps to protect the values of an adjacent area or feature		An area that has an important buffering function that helps to protect the values of an adjacent area or feature **of significant indigenous vegetation or significant habitat of indigenous fauna, or**	I agree with this change proposed by HG.

(iii) An area that is important for indigenous fauna during some part of their life cycle, either regularly or on an irregular basis, e.g. for feeding, resting, nesting, breeding, spawning or refuges from predation, or		An area that is important for a population of indigenous fauna during ~~some~~ **a critical** part of their life cycle, either seasonally or permanently ~~regularly or on an irregular basis~~, e.g. for feeding, resting, nesting, breeding, spawning or refuges from predation, or	I agree with the change proposed by HG.
Vulnerable and sensitive species (h) An area that contains sensitive species that are fragile to anthropogenic habitats or species that are fragile anthropogenic effects or have slow recovery from anthropogenic effects.		~~Vulnerable and sensitive species~~ ~~(h) An area that contains sensitive species that are fragile to anthropogenic habitats or species that are fragile anthropogenic effects or have slow recovery from anthropogenic effects.~~	I agree with HG that this should be deleted for the reasons identified in the caucusing statement. This criterion would be difficult to interpret or apply in the marine context.

From: Kelvin Lloyd
To: Thea. Sefton
Cc: Melanie Hardiman; Kerstin Strauss
Subject: RE: Quick question
Date: Tuesday, 23 May 2023 1:27:02 p.m.

Kia ora Thea

The 'likely' makes this possible to assess. I imagine an ecologist would use same criteria as the national threat panel, which rely on assessing the total population trend and the total number of mature individuals. So if the Otago loss of individuals would put the total number of individuals into a new category (e.g. a reduction from 250-1000 individuals to less than 250), that would represent a worsening of the conservation status.

Table 2 in the publication below shows how trend in population size and total number of individuals give the various conservation statuses.

https://www.doc.govt.nz/globalassets/documents/science-and-technical/sap244.pdf

Regards
Kelvin

Kelvin Lloyd
Senior Principal Ecologist
P +64 3 477 2096 Ext 362 **M** +64 21 757 303
wildlands.co.nz
Call Free 0508 945 369
764 Cumberland Street, Dunedin 9016, Aotearoa New Zealand.
Wildlands staff are located in Rotorua, Whangarei, Auckland, Hamilton, Tauranga, Whakatane, Gisborne, Wellington, Christchurch, Dunedin, Wanaka, Queenstown and Invercargill.

From: Thea. Sefton <Thea.Sefton@rossdowling.co.nz>
Sent: Tuesday, 23 May 2023 10:52 am
To: Kelvin Lloyd <Kelvin.Lloyd@wildlands.co.nz>
Cc: Melanie Hardiman <Melanie.Hardiman@orc.govt.nz>; Kerstin Strauss <Kerstin.Strauss@orc.govt.nz>
Subject: Quick question

Hi Kelvin

For APP3 you have suggested including the word "likely" into APP1(c)

So it would read:

(c) the likely worsening of the conservation status of any indigenous biodiversity as listed under the New Zealand Threat Classification System (Townsend et al, 2008), or

Could you please advise how easily or robust it would be for an ecologist to determine/assess/measure this?

Ngā mihi | Kind regards,

Thea Sefton Associate
ROSS DOWLING MARQUET GRIFFIN
BARRISTERS AND SOLICITORS

Second Floor, Savoy Building, 50 Princes Street, Dunedin 9016
PO Box 1144, Dunedin 9054
Phone: 03 951 2362
Fax: 03 477 6998
www.rossdowling.co.nz

FRAUD WARNING: Fraud attempts are increasing and law firms and their clients are targeted. Never make any payment in reliance on bank account information in an email or a phone call. Our trust account is loaded as a payee on online banking platforms. All payments to us should be made using that method. Alternatively, you can verify our account details by telephoning a person at our firm who you know and will recognise. If doing so you should not rely on any telephone number in an email or given by a caller requesting payment. **IF IN DOUBT DO NOT PAY.**