

BEFORE THE HEARINGS PANEL

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of submissions on the Proposed Otago Regional
Policy Statement 2021 (non-freshwater parts)

EVIDENCE OF MARK CHRISTENSEN

FOR OCEANA GOLD NEW ZEALAND LIMITED

CHAPTER 10 – ECO AND APP 3 AND 4

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INTRODUCTION AND BACKGROUND

Qualifications and experience

1. I am the Director of Natural Resources Law Ltd, a sole practice legal consultancy with expertise in resource management, sustainability and environmental law. I established Natural Resources Law Ltd in 2016. I have over 30 years' experience as a resource management lawyer. I have previously been a Partner of Russell McVeagh, based in the Auckland office, and a Partner of Anderson Lloyd Lawyers, based in the Christchurch office.
2. I have a Bachelor of Arts degree in Geography with Honours and a Bachelor of Laws with Honours, both from the University of Otago, which I gained in 1982 and 1985 respectively. I was admitted as a barrister and solicitor in 1985.
3. I am a Member of the Resource Management Law Association, the World Commission on Environmental Law (IUCN), the International Council of Environmental Law; the Commission on Ecosystem Management (IUCN), and an Independent Hearing Commissioner certified by the Ministry for the Environment and Local Government New Zealand.
4. I have a wide range of experience in resource management law, including advising clients on both statutory planning documents and resource consent applications across all regions of New Zealand. Over my career, I have primarily acted for business interests and applicants for resource consents, but I also have experience in acting for not-for-profit organisations, individuals and community organisations opposing applications for resource consents.
5. I also have a range of governance experience. In 2020 I became a Chartered Member of the Institute of Directors. I am a non-executive director for EcoCentral Limited (a Christchurch City Council Trading Organisation) and the State-Owned

enterprise Animal Control Products Limited (which trades under the name Orillion). I am the independent Chair of the unincorporated Joint Venture for the Lake Hood Extension Project (near Ashburton). I am previously the Chair of the Banks Peninsula Conservation Trust, a trustee of WWF (New Zealand), a Member of the New Zealand Conservation Authority, and a trustee of the Central Plains Water Trust. I am currently the Chair of the Project Oversight Group for Pest Free Banks Peninsula.

Experience in relation to biodiversity offsetting and biodiversity compensation

6. My interest in the concepts of biodiversity offsetting and environmental compensation began in the late 1990s and early 2000s. By then I had been involved in several resource consent applications where effects on indigenous biodiversity were a major consideration. I became aware of the lack of consistent policy around indigenous biodiversity and a lack of transparency and a common approach to the assessment of effects and how those effects were to be managed. I was concerned about those situations where I perceived the management of effects to be more a matter of what I term 'horse trading' than based on the application of a coherent and transparent framework.
7. Between 2000 and 2004 I was the Oceania Vice-Chair of the Steering Committee of IUCN's Commission of Environmental Law (now the World Commission on Environmental Law (WCEL)). WCEL is a global network of environmental law and policy experts from all regions of the world volunteering their expertise to promoting the environmental rule of law through IUCN's activities. IUCN is a membership Union composed of both government and civil society organisations. It harnesses the experience, resources and reach of its more than 1,400 Member organisations and the input of more than 18,000 experts.

8. In that role I became aware of the newly established partnership between IUCN and the International Council on Mining and Metals (ICMM) which had been working together on mining, biodiversity and related issues since 2001. ICMM emerged from the Mining, Minerals and Sustainable Development project, a multi-stakeholder research initiative established in 2000, following criticism of industrial mining operations from environmental and social groups in the 1990s. Outcomes of the collaboration (which is continuing) include the development of the ICMM Good Practice Guidance for Mining and Biodiversity in 2006¹.
9. Following my interest in the IUCN/ICMM partnership in the early 2000s, I became involved with, and subsequently joined the Advisory Group for, the Business and Biodiversity Offsets programme (BBOP). BBOP ran from 2004-2018 to help developers, conservation groups, communities, governments, and financial institutions develop and apply best practice towards achieving no net loss and preferably a net gain of biodiversity through the rigorous application of the 'mitigation hierarchy'². When BBOP was established in 2004, the terminology for core concepts such as 'mitigation', 'compensation' and 'offsets' varied from country to country and group to group, leading to confusion and misunderstanding. It also wasn't clear how to measure losses and gains of biodiversity, how to consider the social and cultural values of communities and how to set up the legal, financial and administrative arrangements to secure mitigation measures over the long term. At the same time, government policies and financial investment conditions did not necessarily encourage best practice.

¹ Good Practice Guidance for Mining and Biodiversity. 2006 International Council on Mining and Metals (London).

² For an overview of the work of BBOP, see Business and Biodiversity Offsets Programme (BBOP). 2018. Working for Biodiversity Net Gain: An Overview of the Business and Biodiversity Offsets Programme (BBOP) 2004–2018. Washington, D.C.

10. Without a recognised standard, project developers, lenders and the conservation community had no way of judging the quality of mitigation measures including biodiversity offsets. In addition, developers were exposed to potential criticism that the efforts they made to offset impacts were inappropriate, wrong in kind, scale and location and did not accord with good practice. The risk of criticism and the lack of certainty that investment in offsets will be well regarded by stakeholders was (and continues to be) a significant disincentive to developers.
11. BBOP started with 40 representatives from companies, governments, non-governmental organisations and financial institutions. BBOP grew to over 100 members, with a Secretariat provided by Forest Trends and the Wildlife Conservation Society.
12. BBOP's work continued until 2018 when it considered that its objectives had been achieved. Over the period 2004 – 2018 BBOP developed and published a series of publications, which resulted in establishing more rigour and transparency in the application of the mitigation hierarchy and promoting concepts like No Net Loss and Net Gain.
13. Rather than endeavouring to prescribe very detailed guidelines for every scenario, members of BBOP agreed that best practice should be established by defining a set of principles that set a high standard on how to proceed but that are flexible enough to apply in very varied circumstances. In 2009, BBOP agreed the Principles on Biodiversity Offsets, now used, cited, adapted and integrated into law, policy, industry guidance and financial loan conditions worldwide.
14. BBOP then published the Standard on Biodiversity Offsets which is intended to help companies, lenders, governments, civil society and auditors navigate through the mitigation hierarchy and establish actions to achieve no net loss or a net gain of

biodiversity³. As a member of BBOP's Advisory Group I contributed to the Standard. BBOP's 'Handbooks' are 'how to' tools to enable practitioners to put the Principles and Standard into practice in the design and implementation of particular projects⁴. The Handbooks are accompanied by a series of 'Resource Papers'⁵.

15. As a member of WCEL and on behalf of the NZ Conservation Authority, I attended the 2016 IUCN World Congress in Honolulu, Hawaii, where I contributed to the development of IUCN's 2016 Policy on Biodiversity Offsets⁶.

16. I am the author and co-author of several articles and papers on the application of biodiversity offsets and biodiversity compensation in New Zealand⁷.

17. In 2010 I advised the Ministry for the Environment on offsets and compensation in relation to the (then) draft National Policy Statement on Indigenous Biodiversity. I have had no involvement with the development of, or making submissions on, the current (2019) draft National Policy Statement on Indigenous Biodiversity (draft NPSIB) or the June 2022 Exposure Draft (NPSIB Exposure Draft).

³ Business and Biodiversity Offsets Programme (BBOP). 2012. Standard on Biodiversity Offsets. BBOP, Washington, D.C See <https://www.forest-trends.org/bbop/resources/>

⁴ Eg, Business and Biodiversity Offsets Programme (BBOP). 2012. Biodiversity Offset Design Handbook-Updated. BBOP, Washington, D.C.

⁵ One of which is a 2012 paper on the principle of Limits to Offsets which I discuss below. Business and Biodiversity Offsets Programme (BBOP). 2012. Resource Paper: Limits to What Can Be Offset. BBOP, Washington, D.C.

⁶ https://portals.iucn.org/library/sites/library/files/resrecfiles/WCC_2016_RES_059_EN.pdf

⁷ Including Maseyk F, Ussher G, Kessels G, Christensen M, Brown M 2018. *Biodiversity offsetting under the Resource Management Act. A guidance document*. September 2018. Prepared for the Biodiversity Working Group on behalf of the BioManagers Group. <http://www.lgnz.co.nz/our-work/our-policypriorities/-environment/biodiversity>; Christensen, M. *Biodiversity offsets - a suggested way forward*. Resource Management Journal, Resource Management Law Association NZ, 2010; Christensen, M and Baker-Galloway, M. 2013. *Biodiversity Offsets – The latest on the law*. Unpublished paper prepared by Anderson Lloyd Lawyers. 31 pg; Baber M, Christensen M, Quinn J, Markham J, Kessels G, Ussher G, and Signal-Ross R. 2021. *The use of modelling for terrestrial biodiversity offsets and compensation: a suggested way forward*. Resource Management Journal, RMLA April 2021 28-33; J Markham, M Baber, J Quinn, M Christensen, T Ryan, M Lowe, S Knowles, D Miller, G Ussher *Assessing limits to biodiversity offsetting in New Zealand: a proposed framework* (in press).

18. I am currently in the process of co-authoring a report for the Biodiversity Working Group on behalf of the BioManagers Group of Local Government NZ. The report is titled 'Biodiversity Offsetting in New Zealand: Strategic Mechanisms for Effective Delivery'. The report is a 'think piece' on 'strategic mechanisms for delivering effective biodiversity offsets and compensation under the RMA' in relation to: (a) further guidance on strategic mechanisms for delivering biodiversity offsets and compensation, and (b) scoping the feasibility of local biobanking schemes.
19. I am a member of the Impact Mitigation and Ecological Compensation Thematic Group of IUCN's Commission on Environmental Management (CEM). CEM's mission is: "to provide expert guidance on integrated approaches to the management of natural and modified ecosystems to promote biodiversity conservation and sustainable development". The Thematic Group "aims to achieve ongoing improvement towards best-practice in application of the mitigation hierarchy, including identifying how to best link mitigation and compensation efforts to global and jurisdiction-level biodiversity targets, and to related environmental and social science-based targets such as zero deforestation, carbon neutrality, biodiversity net gain, land degradation neutrality, nature-based solutions, ecosystem-based adaptation, empowering of indigenous peoples and vulnerable groups, among others."⁸
20. I note that I am counsel for Stevenson Mining Limited on the proposed Te Kuha mine near Westport. The appeal against grant of consents for that project was heard by the Environment Court over two weeks starting on 1 August 2022. At the time of writing this evidence, the Court's decision is awaited. The application of biodiversity offsets and biodiversity compensation, including interpretation of the

⁸ <https://www.iucn.org/commissions/commission-ecosystem-management/our-work/cems-thematic-groups/impact-mitigation-and-ecological-compensation-0>

relevant provisions of the West Coast Regional Policy Statement, was a major part of the contested evidence called on the appeal. I further note that I was not involved in the 2020 settlement of the appeal on the indigenous biodiversity provisions of the West Coast Regional Policy Statement.

OUTLINE OF EVIDENCE

21. OGNZL has asked me to provide evidence on the suitability and utility of the biodiversity offsetting and compensation policies contained in the notified pORPS.

In this evidence I:

- a. Discuss the commonly accepted definitions of biodiversity offsetting and biodiversity compensation, and their role within the 'effects management hierarchy'.
- b. Summarise the generally accepted principles of biodiversity offsetting, which leads to a discussion about what biodiversity compensation and offsetting policies need to achieve if they are to be effective.
- c. Provide my opinion on the effectiveness of the biodiversity compensation and offsetting policies and associated appendices in the pORPS, together with my recommendations on how they can be improved. This includes a comparison of the proposed policies against other relevant New Zealand examples of policy formulations including the operative Auckland RPS, the operative West Coast RPS, the Exposure Draft of amendments to the National Policy Statement for Freshwater Management 2020 (released in May 2022) (NPSFM Exposure Draft), and the Exposure Draft of the NPSIB (NPSIB Exposure Draft) released in June 2022.

22. My evidence focusses on the following provisions of the pORPS:

- a. Policy ECO-P6 – Maintaining indigenous biodiversity
- b. APP3 – Criteria for biodiversity offsetting

- c. APP4 – Criteria for biodiversity compensation.
23. While I have concentrated on these provisions, I have sought to understand them within the wider context of the full suite of objectives and policies insofar as they are relevant to indigenous biodiversity.
24. My evidence considers these provisions in terms of the following issues:
- a. The definitions which are used (or not) in the pORPS.
 - b. The policy recognition of the 'effects management hierarchy'.
 - c. The principle of 'limits to offsetting'.
 - d. Which, and how, biodiversity values should be considered.
 - e. The appropriateness of the appendices which constrain the application of both biodiversity offsets and biodiversity compensation through the use of 'criteria', rather than as principles or matters against which their appropriateness can be assessed.
25. I also comment on the s42A report and supplementary evidence prepared on behalf of the Council.

My evidence is influenced by my world view

26. I subscribe to the proposition that even independent, objective, expert evidence is influenced by often unstated presuppositions and biases (which I collectively term 'world view') of the witness giving evidence. I am no different in that regard. My experiences in participating in some of the high-level international development of the concepts around biodiversity offsetting and compensation and then trying to usefully apply those concepts in consent processes under New Zealand conditions have also informed my view on what are appropriate statutory provisions for offsets and compensation.
27. The following comments are my attempt to summarise at least some of my world view as it relates to biodiversity offsets and compensation.

28. NZ is in a biodiversity crisis. Existing regulation and practice have done little to 'halt the decline', let alone reverse that decline. While I consider that increased regulation has a major role to play, simply providing for a greater range of prohibited activities or severely constraining the ability for decision-makers to grant consents, or restricting the types of tools developers are allowed to use to address biodiversity impacts, is unlikely to turn the tide.

29. Having a national, regional or project objective of No Net Loss (NNL) is inadequate. Given the existing state of New Zealand's indigenous biodiversity, I consider Net Gain (NG) should be the stated objective in all situations. I think business has a critical role to play in achieving NG (not just NNL). But this should not just rely on large businesses or large projects. I believe that all activities that have impacts on biodiversity and for which consent is required should contribute towards national, regional, and activity/project objectives of NG. To do that properly will require an understanding of strategic biodiversity objectives or targets at both the national and regional levels. Individual projects can then 'see where they fit' in terms of these strategic objectives/targets. I am attracted to the concept of science-based targets in this regard⁹, and also to the recently adopted Environment Act in the United Kingdom which requires NG to be achieved in England.¹⁰ But we do not need to wait until science-based targets are in place to try to achieve NG at the project level.

30. Implementation of biodiversity offsets and compensation to date in New Zealand has been patchy (at best). But I distinguish between poor planning, poor

⁹ Moving from biodiversity offsets to a target-based approach for ecological compensation. J Simmons et al. Conservation Letters. 2020;13:e12695. <https://conbio.onlinelibrary.wiley.com/doi/10.1111/conl.12695>

¹⁰ Environment Act 2021. <https://www.local.gov.uk/pas/topics/environment/biodiversity-net-gain/biodiversity-net-gain-faqs-frequently-asked-questions#general>

implementation and poor enforcement on the one hand, and poor policy/decision making on the other.

31. The amount of detail required for a proponent of an offset or compensation should be commensurate with the level of effect of the proposal.
32. Transparency for an applicant is as important as transparency for decision-makers and the community. My experience is that by far the majority of applicants 'want to do the right thing'.
33. The debate about offsets and compensation has been raging in New Zealand for many years, often with high emotion. In my opinion, the question of what 'rules' should be put around the use of offsets and compensation (both at the national and local levels) should be seen as a policy decision (informed by ecological advice) within a policy continuum. At one end of the continuum is a 'platinum' system that entirely meets all the 'science' principles of ecological equivalence and provides a very high level of assurance of outcome by demanding either 'offsets in advance' or highly sophisticated modelling based on extensive and detailed field work. This would mean that offsetting is almost never available because the criteria would almost never be able to be met. At the other end of the continuum is a system which is unclear and inconsistent, and relies on negotiation, akin to what I have called 'horse-trading'. Somewhere between these two ends of the continuum is a clear and transparent system which, by necessity, compromises on certain aspects (such as proximity, strict equivalence in some situations, and metrics) – but with clear 'boundaries' i.e. restrictions on how much compromising of ecological equivalence we consider to be appropriate; how much ecological strictness/resolution of data is unnecessary for the purposes of effects management. It is this latter which I consider to be the preferred practical and workable approach.
34. To achieve practical on-the-ground outcomes which are socially acceptable (in my opinion neither declining all applications which affect biodiversity, nor allowing the

present system where New Zealand's biodiversity continues to decline are likely to be socially acceptable), it is likely that some compromises will be necessary. In the context of policy and rules about offsets and compensation, it is my opinion that 'perfection is the enemy of progress'. On these issues, I do not view the world in black and white terms.

35. Without designing a complete biodiversity offset and credit system such as those used in most Australian States and in development in England, I consider that decisions about these boundaries (that is, what is 'appropriate') are better to be made on the evidence and in accordance with general principles set out in the relevant policy, not decided a priori by way of setting specific 'limits on offsets'.
36. What is important is rigour and transparency. Objectively applied offsets and compensation can assist with this. My experience is that applicants do not want to think that what they propose in terms of offsets and compensation is adequate, only to discover later that it is not. Nor does an applicant want to unwittingly provide significantly greater offset/compensation than is necessary. While they may choose to offer something well over the line of NNL, my experience is that they want to do that in an informed way, and not have a sense that the level of offset and/or compensation is arbitrary and akin to a one-sided commercial negotiation.
37. In my opinion, if offsetting is applied well, then Net Gain for individual projects is potentially achievable, and the outcome will be a network of well-resourced biodiversity enhancement projects. However, offsetting can only ever be a guide to decision-makers, and the use of biodiversity modelling, no matter how detailed or sophisticated, cannot replace normative discretionary judgment about the appropriateness or otherwise of a particular proposal.

My role in providing this evidence

38. Although this is not an Environment Court hearing, I have read and agree to comply with the Environment Court's Code of Conduct for Expert Witnesses. This evidence is within my area of expertise, except where I state that I am relying upon material produced by another person. I have not omitted to consider material facts known to me that might alter or detract from my opinions.
39. I provided advice to OGNZL on the topic of offsetting and compensation in the Proposed Otago Regional Policy Statement 2021 (**pORPS**). This advice is contained in a letter dated 3 September 2021 which was included as Appendix 3 to OGNZL's written submission on the PORPS.
40. In 2017, I acted for OGL on the Dunedin City District Plan (2GP) at the council level. That included making legal submissions on the role of biodiversity offsets and biodiversity compensation. Those submissions are consistent with the opinions I provide in this statement of evidence.
41. While much of my experience in relation to biodiversity offsetting has been gained over many years through my role as a legal advisor and counsel to applicants, I have been careful to approach this statement of evidence in an independent and objective manner, rather than as an advocate in support of Oceana Gold's submission.
42. In preparing this evidence I have read the following:
- a. The provisions of the pORPS as they relate to Ecosystems and Biodiversity.
 - b. Submissions on the proposed ORPS by Oceana Gold Limited, the Director-General of Conservation, Forest & Bird, Straterra Inc, and the Queenstown-Lakes District Council.
 - c. The further submission of Oceana Gold Limited.

- d. The Hearing Commissioners' decision in Deepdell North¹¹, the Environment Court's decision¹² on the, now partially operative RPS, the subsequent High Court decision¹³ and final decision of the Environment Court on policy 5.4.6¹⁴.
- e. The s42A report and accompanying Wildlands report as appendix 10c and Dr Kelvin Lloyd's supplementary statement of evidence.
- f. The NPSFM Exposure Draft, the NPSIB Exposure Draft and relevant regional policy statements from other regions.

EXECUTIVE SUMMARY

43. Biodiversity offsetting is based on a series of widely accepted principles that illustrate the level of rigour required that differentiates offsetting from environmental compensation. It is this rigorous process and the objective, quantified evaluation associated with biodiversity offsetting which make it a preferable option to environmental compensation. The most frequently cited guiding principles for biodiversity offsetting are those developed by BBOP which includes principles on science, social, culture and policy matters.

44. Biodiversity compensation has received much less attention than biodiversity offsets in the various guidance documents. Nonetheless, it is my opinion that best practice compensation should be guided by principles in the same manner as an offset, to the extent practicable, and that the planning provisions should recognise that any environmental compensation proposed should generally follow the principles/guidance for an offset.

¹¹ Deepdell North Stage III decision, September 2020.

¹² *Oceana Gold (New Zealand) Limited v Otago Regional Council* [2019] NZEnvC 41.

¹³ *Oceana Gold (New Zealand) Limited v Otago Regional Council* [2020] NZHC 436.

¹⁴ *Oceana Gold (New Zealand) Limited v Otago Regional Council* [2020] NZEnvC 137.

Definitions

45. There is not (yet) a national regulatory definition of 'biodiversity offset' as it applies to terrestrial biodiversity. In contrast, the National Policy Statement for Freshwater Management 2020 (NPSFM 2020) contains definitions for 'aquatic offset', 'aquatic compensation', and 'effects management hierarchy' which are required to be inserted into regional plans. The NPSIB Exposure Draft proposes that similar definitions relating to terrestrial biodiversity be inserted into regional policy statements and regional plans.
46. The definitions about terrestrial biodiversity offsets in the pORPS are inconsistent with the definitions in these national documents. I cannot see any policy or legal justification for the pORPS defining and dealing with offsets and compensation differently depending on whether they apply to terrestrial biodiversity or wetlands and riverbeds. In my opinion, additional definitions should be added which provide for terrestrial 'biodiversity offsets' and 'biodiversity compensation', the wording of which is aligned with the definitions of aquatic offset and aquatic compensation in the NPSFM. I also consider that the existing definition of the 'effects management hierarchy' in the pORPS should be amended so that it applies to both terrestrial and aquatic offsets and compensation.

Application of the effects management hierarchy

47. My evidence describes the justification for preferring the NPSFM 2020 approach to the effects management hierarchy over Policy ECO-P6 in the pORPS. The effects management hierarchy is already present in the pORPS and the Otago Regional Plan: Water as it relates to wetlands and riverbeds. There is, in my view, no policy justification for the pORPS applying the effects management hierarchy in relation to effects on terrestrial indigenous biodiversity differently to how the NPSFM and pORPS, apply the hierarchy in relation to effects on wetlands and riverbeds.

48. I consider the way the obligations are expressed at each step of the hierarchy, to be better expressed in the NPSFM and more appropriate than ECO-P6. It is my opinion that taking that same approach for effects on terrestrial biodiversity is reinforced by the 2022 NPSFM Exposure Draft and the 2022 NPSIB Exposure Draft. I suggest changes to ECO-P6 which would make that policy consistent with the NPSFM 2020 approach.

Offsets and compensation – ‘criteria’ or ‘principles’?

49. Under the pORPS biodiversity offsets are only ‘available’ if the ‘criteria’ in APP3(2) are ‘met’. Offsetting must be ‘in accordance with’ the criteria in APP3. In contrast, the NPSFM 2020 definition of offset relates to the purpose for which the offset is being proposed¹⁵, rather than attempting to combine that definition with limits about what can and cannot ‘qualify’ as an offset. The 2022 NPSFM Exposure Draft proposes to link the principles with the effects management hierarchy by providing that regional plans must add a provision that a consent may not be granted unless “the council is satisfied that, if aquatic offsetting or aquatic compensation is applied, the applicant has had regard to the principles in Appendix 6 or 7, as appropriate.”¹⁶ I consider this approach to better reflect best practice because it is more consistent with both the BBOP approach as reflected in the 2018 Guidance than the approach in the pORPS.

APP3 – Limits to offsets

50. In considering this issue, I first describe the development of this principle from BBOP, then as expressed in the 2018 guidance. I then consider how the principle

¹⁵ Clause 3.21(2).

¹⁶ Clause 3.22(3)(b).

is given effect to in the West Coast Regional Policy Statement 2020, the NPSFM 2020, the 2022 NPSFM Exposure Draft and the 2022 NPSIB Exposure Draft, as the most recent examples of other policy formulations in New Zealand and compare that with the approach in the pORPS. I conclude by setting out my opinion why I believe the current wording of the pORPS is inconsistent with best practice.

51. In my opinion, APP3 should be amended to align it with the approach set out in the NPSFM Exposure Draft. This includes adding to the definition of 'effects management hierarchy' a requirement that offsets, if used, should be assessed against the principles set out in APP3, rather than APP3 containing 'criteria' which attempt to define what is, and is not, an offset. Presently, APP3 reads as if it is attempting to be a prohibited activity rule rather than a set of assessment matters against which a decision maker can exercise a discretionary judgment on the appropriateness of a proposed offset having considered all of the evidence.
52. In my opinion, the setting of a 'limit to offsets' in APP3 by reference to the loss of individuals was novel when it was introduced into the operative RPS in 2019, and it remains so. This can be contrasted with the later West Coast RPS which places the limit not at the loss of an individual specimen of a Threatened species, but at the species or community level. In my opinion, the reference to individuals is also inconsistent with the NPSIB Exposure Draft.
53. I consider the proposed Otago RPS policy to be unreasonably restrictive, to the point that it potentially undermines the whole objective of proposing a biodiversity offset. In any particular instance, it may be that a decision-maker decides on the evidence before them that even the loss of individuals of certain species is unacceptable and cannot be appropriately offset. But, in my opinion, that is a decision which should be made on the evidence and in accordance with the other principles set out in the relevant policy, not decided *a priori* by way of the policy in its current form.

APP 4 – limits to compensation

54. Like APP3 for offsets, APP4 currently provides limits for the use of biodiversity compensation, both directly in APP4(1) and indirectly as 'criteria' in APP4(2).
55. In my opinion, a provision in a statutory planning document which directs that a decision-maker can only consider biodiversity compensation which is defined by way of specific criteria (as the pORPS purports to do) is not as useful as a provision which defines biodiversity compensation in terms of its purpose and then provides a framework of principles against which the appropriateness of any proposed compensation can be assessed.
56. Amending APP4 to take the latter approach would also make it consistent with the way in which the NPSFM 2020, the 2022 NPSFM Exposure Draft and the Regional Plan; Water for Otago address offsets and compensation for effects on wetlands and rivers. Rather than providing criteria which determine what and what is not compensation and directing that the decision maker is restricted to that assessment (again as if this appendix is attempting to operate as a de facto prohibited activity rule), a decision under the NPSFM 2020 as to whether a particular compensation proposal is appropriate is left to the decision maker but guided by the proposed set of principles, depending on the circumstances and having considered the totality of the evidence.
57. Assuming the NPSIB does not dictate the provisions to be inserted into the pORPS and that the ORC has some ability to determine how offsets and biodiversity compensation are described and applied in Otago, I have provided in **Appendix 4** a full set of my suggested amendments.

Section 42A report

58. Paragraph 58 of the report refers to section 10.4.3 of the Biodiversity chapter and states that the rationale for adopting a 'more stringent approach' than national

direction is set out in that section. I have read section 10.4.3 and in my opinion there is no demonstrated link between the discussion/rationale in that section and taking a 'more stringent' approach than national direction as set out in ECO-P6. The NPSFM Exposure Draft provides a consenting pathway for mineral related activities in relation to rivers and wetlands. The NPSIB Exposure Draft does the same for mineral related activities having effects on SNAs. I do not see the s42A report as providing any justification for the pORPS not following the same approach.

59. Appendix 10c to the s42A report is an April 2022 report by Wildlands. That report is critical about existing practice of biodiversity offsetting and states "Poor offsetting practice has frequently been used in New Zealand, and for this reason it is important to have clearly defined limits to offsetting in regional plans". The April 2022 Wildlands report does provide any further details of the basis for these criticisms, nor explain what the 'poor practice' is, and why the notified pORPS needs to be strengthened beyond that provided in national direction to avoid such 'poor practice.'

60. In his 29 September 2022 statement of evidence, the author of Appendix 10c, Dr Kelvin Lloyd, discusses what he considers to be shortcomings of previous practice by Oceana Gold in terms of offsets and compensation. However, rather than providing justification for the pORPS 'going it alone' in terms of setting bespoke limits on offsets and compensation, to the extent that Dr Lloyd's criticisms are valid, in my opinion they simply point to the need for better and more informed and consistent policy, better planning, improved biodiversity impact assessments, more comprehensive monitoring, and greater enforcement, at all levels and across all regions of the country.

61. In terms of policy, I consider that if the changes I recommend, along with other changes suggested by experts providing evidence on behalf of Oceana Gold, are made, the pORPS would be consistent with best practice.

INTRODUCTION

62. This section of my evidence provides a general introduction to biodiversity offsets and biodiversity compensation.

63. Biodiversity offsetting is an approach to addressing any reasonably unavoidable, residual, negative effects of development on indigenous biodiversity. A biodiversity offset aims to balance the impacts of development on biodiversity in one place with biodiversity gains in another place. Biodiversity offsetting has been increasingly applied around the world, variously driven by regulatory authorities, industry, and financial institutions in response to several motivations:

- a desire to address ongoing biodiversity losses due to development;
- a recognition that existing approaches to conservation in the context of ongoing economic development have failed to halt biodiversity decline;
- the urgent need to shift development to a more sustainable model; and
- a need to improve the transparency and process around effects management to deliver better and more sustainable conservation outcomes.

64. I am not aware that there are as yet national regulatory definitions of 'biodiversity offset' and 'biodiversity compensation' with respect to terrestrial biodiversity. In contrast, the National Policy Statement for Freshwater Management 2020 (NPSFM 2020) contains definitions for 'aquatic offset', 'aquatic compensation', and 'effects management hierarchy', which I discuss below.

65. As a working definition of a 'biodiversity offset' for terrestrial biodiversity I consider the definition provided in the 2018 Local Government guidance document¹⁷ to be the best one which contains all the generally accepted elements of a biodiversity offset. The definition in that document is:

A measurable conservation outcome resulting from actions designed to compensate for residual, adverse biodiversity effects arising from activities after appropriate avoidance, remediation, and mitigation measures have been applied. The goal of a biodiversity offset is to achieve no-net-loss, and preferably a net-gain, of indigenous biodiversity values.¹⁸

66. A no-net-loss (NNL) offset aims to return biodiversity values to the point they would be anyway, that is, without the impact or the offset. A fully successful NNL biodiversity offset does not halt the decline of biodiversity as it only neutralises losses. A net-gain (NG) offset, by contrast, generates biodiversity values that are greater than they would be anyway (without the impact or the offset) (Figure 1). The conservation gain achieved under a NG offset is the proportion above the point of NNL in Figure 1 — the proportion below the NNL point cannot be counted as a gain as it is accounting for the biodiversity losses.

67. In contrast, biodiversity compensation is designed to compensate for losses, but it does not neutralise those losses, instead producing biodiversity gain in an area not directly related to the loss. It is a more subjective process that by its very nature cannot describe, measure, or balance gains with losses in the same way as an offset and is therefore not required to adhere with the principles of biodiversity offsetting, especially no-net-loss or net-gain objectives. Biodiversity compensation

¹⁷ 'Biodiversity Offsetting under the Resource Management Act: A Guidance Document'. 2018. Local Government New Zealand. ("The 2018 Guidance"). I note that I was a co-author of this report.

¹⁸ 2018 Guidance, pages 2, 65 and 66. This is consistent with the definition of 'aquatic offset' in Clause 3.22(2) the NPSFM 2020 but is different to the definition of biodiversity offset in Clause 1.6 of the NPSIB Exposure Draft v.

is not biodiversity offsetting, or a form of offsetting. ‘Environmental compensation’ is defined in the 2018 guidance as: “actions (not including biodiversity offsets) to compensate for residual adverse biodiversity effects arising from activities after all appropriate avoidance, remediation, mitigation and biodiversity offset measures have been applied”¹⁹.

68. For that reason, biodiversity compensation generally carries the greatest ‘risk’ for biodiversity outcomes and is the last resort in the effects management hierarchy (Figure 1).

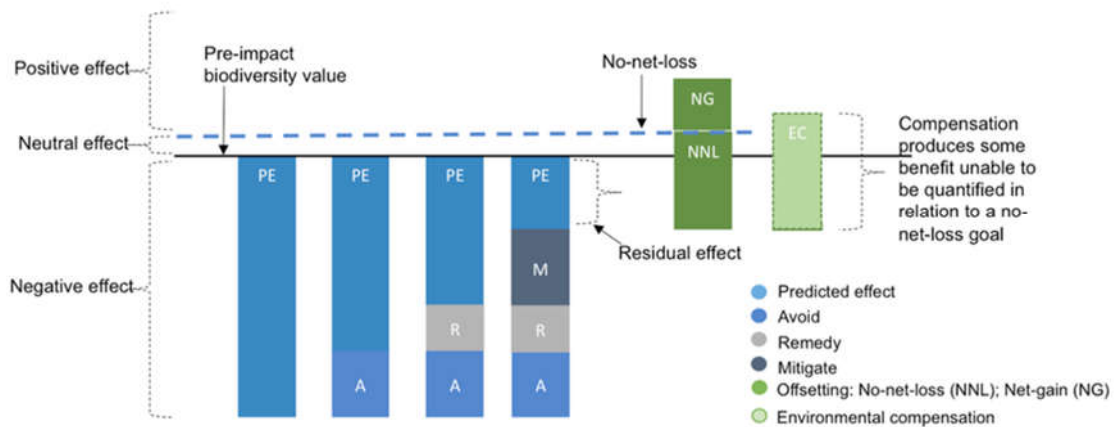


Figure 1: Conceptual illustration of the effects management hierarchy progressing from avoidance (least risk and most certainty) to environmental compensation (greatest risk and least certainty) and showing the difference between a neutral ‘no-net-loss’ and positive ‘net gain’ outcome. The no-net-loss line is above the pre-impact biodiversity

¹⁹ Page 65.

value as more gains than losses are required to achieve no-net-loss when accounting for uncertainty and time-lags.²⁰

COMPARING THE pORPS WITH OTHER POLICY EXAMPLES

69. In reviewing and commenting on the provisions of the pORPS I have had regard to the recommendations in the 2018 guidance and adapted them in light of more recent developments, including other examples of statutory provisions, in particular the NPSFM 2020, the West Coast Regional Policy Statement 2020, the 2022 NPSFM Exposure Draft, and 2022 NPSIB Exposure Draft.

70. I note that neither the 2022 NPSIB Exposure Draft and the 2022 NPSFM Exposure Draft are statutory documents that the pORPS must give effect to²¹. Nonetheless, I consider that both documents can be of assistance, at least insofar as they indicate the current policy position of the Ministry for the Environment's advice to government having taken into account a range of submissions (subject to the final documents being released following consideration of submissions on them). At the time of writing this evidence, the Ministry for the Environment's website notes that the NPSIB is expected to be gazetted in December 2022. In my evidence I compare the NPSIB Exposure Draft and the NPSFM Exposure Draft and I comment on some concerns about specific wording in the NPSIB Exposure Draft, which I recommend not be adopted in the pORPS. It may be, however, that the NPSIB when gazetted will retain the wording of the Exposure Draft, and therefore the Panel (or subsequently the ORC) will need to consider whether it is legally able to make

²⁰ Reproduced from Figure 2 for the 2018 Guidance.

²¹ Under s63(3).

changes to the pORPS other than what is specifically required by the NPSIB to give effect to it.

71. Following gazettal of the NPSFM and Freshwater Regulations²² in 2020, serious concerns were raised by councils and sector groups about the practical application of the 'Freshwater Package' which Ministry for the Environment guidance alone could not resolve. The Government agreed to consult on amendments to the regulations in August 2021, and public consultation occurred from 1 September to 27 October 2021. A total of 262 individual submissions, and approximately 5,860 form submissions from Forest and Bird, were received on the proposals. Submissions on the NPSFM Exposure Draft closed on 10 July 2022.
72. The 2019 draft NPSIB was the subject of considerable criticism from a range of submitters in 2019 and 2020. This has resulted in changes being made to the 2022 NPSIB Exposure Draft. Submissions on the revised NPSIB Exposure Draft closed on 21 July 2022.
73. I consider that NPSFM 2020 (released in August 2020) is likely to have been informed by both the 2019 draft NPSIB and the submissions on that draft made between November 2019 and January 2020. Similarities in the approach of both the NPSFM Exposure Draft and the NPDIB Exposure Draft indicate to me that they have resulted from continuing policy evaluation of both of those documents.
74. I therefore do not agree with the comment in the section 32 evaluation report²³ where it is stated "It is acknowledged that [the 2019 draft NPSIB] is currently in draft form and has no legal weight, however it does indicate the Government's most recent policy position on managing indigenous biodiversity and has been

²² Resource Management (National Environmental Standards for Freshwater) Regulations 2020.

²³ At paragraph 440.

developed over many years with input from a range of stakeholders and experts”. Nor do I agree with the statement in Ms Boyd’s supplementary evidence²⁴ that “[a]t this stage, the draft NPSIB is not in force and therefore there is no clarity about the content the Council may be required to give effect to. While I accept there is not complete certainty at this point, in my opinion, the 2020 NPSFM, the 2022 NPSFM Exposure Draft, and the 2022 NPSIB Exposure Draft are all better indicators of the Government’s most recent policy position on managing indigenous biodiversity than the 2019 draft NPSIB²⁵. Moreover, I disagree with the comment in the s32 report that the 2019 draft NPSIB was developed “with input from a range of stakeholders and experts.” My understanding of the process was that the draft was prepared with very limited input from stakeholders and experts. Indeed, I understand that is one of the reasons why there was such a high level of criticism of the 2019 draft NPSIB as shown through the submissions.

75. The NPSFM Exposure Draft proposes to insert two appendices to the NPSFM which set out principles for both aquatic offsets and aquatic compensation. The report accompanying the Exposure Draft²⁶ states:

...we agree with Forest and Bird that there is a need for offsetting principles to be included within the NPS-FM (rather than in guidance). We recommend including, in an appendix to the NPS-FM, principles for both offsets and compensation and linking these to the effects management hierarchy.

The proposed principles are set out in Appendix 1 of this report. We have consulted with DOC on developing these. They are based on those in the proposed National Policy Statement for Indigenous Biodiversity (NPSIB). This ensures alignment between the NPSIB

²⁴ Ms Boyd Supplementary Evidence 11 October, paragraph 57.

²⁵ I acknowledge that the s32 report was prepared well prior to both the NPSFM Exposure Draft and the NPSIB Exposure Draft being released, so my comment is not a criticism in that regard.

²⁶ Ministry for the Environment. 2022. Essential Freshwater Amendments: Report recommendations and summary of submissions: Managing our wetlands: Proposed changes to the wetlands regulations. Wellington: Ministry for the Environment, page 36.

and NPS-FM. The principles are a mandatory set of best practices specific to aquatic offsets and therefore include biodiversity but also hydrological functioning etc. The principles would apply to offsetting for both rivers and wetlands

76. There appears to be no similar report accompanying the NPSIB Exposure Draft.

However, this document also adds two appendices which set out principles for both biodiversity offsets and biodiversity compensation.

77. As I discuss below, I consider it significant that both Exposure Drafts propose to link the principles with the effects management hierarchy by providing that regional plans must add a provision that an application may not be granted unless “the council is satisfied that, if aquatic offsetting or aquatic compensation is applied, the applicant has had regard to the principles in Appendix 6 or 7, as appropriate”²⁷ or “the decision-maker is satisfied that the applicant has demonstrated how each step of the effects management hierarchy will be applied”.²⁸

78. This approach can be contrasted with the approach in the pORPS which attempts to define offsets and compensation by reference to the principles. As I discuss this has led to difficulties in interpretation and application. In my opinion, the approach in the Exposure Drafts (although I have a major reservation with respect to the wording of the NPSIB Exposure Draft which I discuss below) better reflect the guidance from BBOP and the 2018 guidance report.

²⁷ NPSFM Exposure Draft - Amendment to Clause 3.22(3)(b).

²⁸ NPSIB Exposure Draft – Clause 3.10(4)(a). I comment below on the reasons why I consider the NPSFM formulation to be preferable to the NPSIB formulation.

DEFINITIONS

79. The pORPS does not define biodiversity offset, biodiversity compensation and the effects management hierarchy insofar as those concepts apply to terrestrial biodiversity²⁹.

‘Effects management hierarchy’

80. The ‘effects management hierarchy’ in relation to terrestrial biodiversity is not defined in the same way as it is in relation to wetlands and riverbeds in the Regional Plan: Water for Otago. For wetlands and riverbeds, the NPSFM 2020 provided a definition of effects management hierarchy and required that a policy (or similar words) be inserted in the relevant regional plan³⁰. When the NPSIB becomes operative, a similar requirement in the NPSIB Exposure Draft will require regional councils to insert a definition of effects management hierarchy in both the regional policy statement and relevant regional plans³¹. In contrast, the s42A report recommends³² that for indigenous biodiversity the term should simply be defined by reference to Policy ECO-P6.

81. I cannot see any policy or legal justification for defining and dealing with the effects management hierarchy differently depending on whether it applies to terrestrial biodiversity or wetlands/riverbeds/aquatic biodiversity.

²⁹ The s42A report recommends (10.3.3.3 page 6) that effects management hierarchy be defined by reference to RCO-P6.

³⁰ National Policy Statement for Freshwater Management 2020 clauses 3.21 and 3.22.

³¹ NPSIB Exposure Draft – Clause 3.10(3).

³² Chapter 10 of the s42A report, paras 12 and 19,

82. The NPSIB Exposure Draft sets out the following definition for 'effects management hierarchy', which the NPSIB would require to be inserted into policy statements and plans³³.

The effects management hierarchy is an approach to managing the adverse effects of an activity. It requires that:

(a) adverse effects are avoided where practicable; and

(b) where adverse effects cannot be demonstrably avoided, they are minimised where practicable; and

(c) where adverse effects cannot be demonstrably minimised, they are remedied where practicable; and

(d) where more than minor residual adverse effects cannot be demonstrably avoided, minimised, or remedied, biodiversity offsetting is provided where possible; and

(e) where biodiversity offsetting of more than minor residual adverse effects is not demonstrably possible, biodiversity compensation is provided; and

(f) if biodiversity compensation is not appropriate, the activity itself is avoided.

83. The only difference between the definition of effects management hierarchy which the operative NPSFM requires be inserted into the pORPS for wetland and riverbeds, and the definition in the NPSIB Exposure Draft is the inclusion of the word 'demonstrably'. I have seen no comment about what that additional word adds to the formulation from the NPSFM. In my view it adds nothing, and is potentially confusing as to its meaning as I comment on further below. Given that the NPSFM definition is a statutory one which is already in place, it is my opinion that the pORPS should simply apply the definition from the NPSFM to terrestrial biodiversity as well as to riverbeds and wetlands.

³³ NPSIB Exposure Draft Clauses 1.5(4) and 3.10(4)(a).

84. The definition for 'effects management hierarchy' would then read as follows (using the existing definition in the pORPS with additions underlined):

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,
- (b) where adverse effects cannot be avoided, they are minimised where practicable,
- (c) where adverse effects cannot be minimised, they are remedied where practicable,
- (d) where more than minor residual adverse effects cannot be avoided, minimised, or remedied, aquatic offsetting or biodiversity offsetting (whichever is relevant) is provided, and
- (e) if aquatic compensation or biodiversity compensation (whichever is relevant) is not appropriate, the activity itself is avoided.

'Biodiversity offsets' and 'biodiversity compensation'

85. Similarly, I cannot see any justification for the pORPS to take a different approach to how offsets and compensation are defined depending on whether they apply to terrestrial or aquatic values. Like the definition of 'effects management hierarchy', the NPSFM provided definitions of 'aquatic offset' and 'aquatic compensation' which then apply to the wording of clause 3.22 of the NPSFM which had to be included in the regional plan³⁴. Similarly, once operative, the NPSIB will require those definitions to be inserted into the RPS and any relevant regional plan³⁵. However, in contrast, the pORPS does not provide similar definitions for terrestrial offsets and compensation, but instead attempts to define biodiversity offsets and

³⁴ NPSFM 2020 Clause 3.22.

³⁵ NPSIB Exposure Draft Clauses 3.10(3), (4) and 3.16(2).

compensation for terrestrial biodiversity only by referring to ECO-P6 and providing in APP3 and APP4 that to be considered an offset or compensation a proposed action must meet the criteria set out in those appendices³⁶.

86. In my opinion, consistency between the definitions is desirable. It may be appropriate to retain the specific definitions of aquatic offsets and compensation from clause 3.21 of the NPSFM 2020, because the NPS specifically requires those definitions to be included in the pORPS. Additional definitions should then be added which provide for terrestrial 'biodiversity offsets' and 'biodiversity compensation' the wording of which is taken from the NPSIB Exposure Draft.

87. The NPSIB Exposure Draft defines biodiversity offset and biodiversity compensation in the standard way as part of the definitions clause:³⁷

biodiversity offset means a measurable conservation outcome that complies with the principles in Appendix 3 and results from actions that:

redress any more than minor residual adverse effects on indigenous biodiversity after all appropriate avoidance, minimisation, and remediation measures have been sequentially applied; and

achieve a measurable net gain in type, amount, and condition (structure and quality) of indigenous biodiversity compared to that lost³⁸.

biodiversity compensation means a conservation outcome that complies with the principles in Appendix 4 and results 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 applied³⁹.

88. The differences between the NPSFM/Otago regional water plan definitions (for wetlands and riverbeds) and those in the NPSIB Exposure Draft are:

³⁶ This is inconsistent with the NPSFM Exposure Draft but is more consistent with the NPSFM Exposure Draft.

³⁷ NPSIB Exposure Draft Clause 1.6.

³⁸ NPSIB Exposure Draft Clause 1.6.

³⁹ NPSIB Exposure Draft Clause 1.6.

- a. The NPSIB Exposure Draft inserts the words ‘that complies with the principles in [the relevant] Appendix’.
- b. The NPSIB Exposure Draft requires an offset to achieve a ‘net gain’, rather than ‘no net loss, and preferably a net gain’ which is the requirement for aquatic offsets under the NPSFM⁴⁰.
- c. Both The NPSIB and NPSFM Exposure Drafts require an offset to achieve a “measurable” conservation outcome. In contrast, while the NPSFM Exposure Draft requires compensation to also result in a ‘measurable’ conservation outcome, the NPSIB Exposure Draft does not require compensation to be ‘measurable’.
- d. The NPSFM Exposure Draft requires no net loss, and preferably a net gain, in the ‘extent and values of the wetland or riverbed’ while the NPSIB Exposure Draft requires a net gain in ‘type, amount, and condition (structure and quality) of indigenous biodiversity’. I discuss these words further below in the context of the principle of ‘limits to offsets’.

89. As I discuss further below, my fundamental concern with the pORPS is that, in my opinion, the words in the NPSIB Exposure Draft “that complies with the principles in [the relevant] Appendix”⁴¹ are unhelpful, unnecessary, and likely to cause confusion. Moreover, they are inconsistent with the statutory NPSFM and how those definitions must be inserted into the pORPS and the Otago Regional Water Plan in relation to wetlands and riverbeds. In my opinion, those words should not

⁴⁰ I note that, baldly stated, a requirement of a Net Gain may be problematic in deciding how much 'gain' is required. In contrast, the reference to 'preferably a net gain' means that the requirement to address the biodiversity loss attributable to the project is addressed, and the gain can then be used as a consideration of rectifying the ongoing (background) loss of biodiversity.

⁴¹ NPSIB Exposure Draft Clause 1.6

be included in the definitions of biodiversity offset and biodiversity compensation in the pORPS, nor in any relevant appendices which may be added to the pORPS.

90. Rather, the matters set out in APP3 (and APP4) should be expressed as issues which must be considered (where relevant) and not as criteria which must be 'complied with'. This would allow case by case normative decision making based on the evidence before a decision maker. What is, or is not, appropriate as offsets or compensation requires such a case by case assessment, and to try to do that in advance in the abstract in the RPS provisions is, in my opinion, fraught with uncertainty, and therefore not the most effective and efficient policy outcome.
91. I consider that a requirement to achieve net gain of indigenous biodiversity, rather than 'at least no net loss' is appropriate given the state of New Zealand's biodiversity. However, such a requirement would be undermined if offsets are only 'available' if they 'meet' certain 'criteria' and those criteria are expressed in a way which means they are unlikely to be met.
92. Therefore, in my opinion the pORPS should insert the following definitions of biodiversity offset and biodiversity compensation (using as a template the definitions already applied in the pORPS/regional water plan (for wetlands and rivers) with deletions shown as strike through and additions underlined):

(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 ~~a wetland or river~~ indigenous biodiversity after all appropriate avoidance, minimisation, and remediation, measures have been sequentially applied; and

(b) achieve ~~no net loss, and preferably a measurable~~ a net gain, in the ~~extent and values of the wetland or river~~ indigenous biodiversity value where:

(ii) **net gain** means that the measurable positive effects of actions exceed the point of no net loss.

(Terrestrial) Biodiversity Compensation:

means a measurable conservation outcome resulting from actions that are intended to provide other gains in indigenous biodiversity values to compensate for any more than minor residual adverse effects on ~~a wetland or river~~ indigenous biodiversity after all appropriate avoidance, minimisation, remediation, and ~~aquatic~~ biodiversity offset measures have been sequentially applied.

93. Both these revised definitions would therefore be consistent with the operative NPSFM 2020 and the 2018 Guidance.

94. By adding these new definitions to the pORPS in a way which is consistent with the approach in the NPSFM 2020 (and with the regional water plan as they apply to wetlands and riverbeds), it is my opinion that the policy framework for terrestrial biodiversity offsets and compensation in the pORPS can be simplified.

APPLICATION OF THE EFFECTS MANAGEMENT HIERARCHY

95. This section of my evidence describes the justification for preferring the NPSFM 2020 definition of the effects management hierarchy over Policy ECO-P6 in the pORPS. At the end of this section, I suggest changes to ECO-P6 which would make that policy consistent with the NPSFM 2020 approach.

96. Methods ECO-M4(2)(a) and ECO-M5(4)(a) state that regional plans and district plans respectively must require 'resource consent applications to include information that demonstrates that the sequential steps in the effects management

hierarchy in ECO-P6 have been followed'. Methods M4(2)(b) and M5(4)(b) provide that if the effects management hierarchy has 'not been followed' consents not be granted.

97. A requirement that applicants for resource consents apply the effects management hierarchy accords with best practice. While there are differences in the specific wording in the various documents I have considered, overall there is a clear consensus on the general approach to the mitigation hierarchy/effects management hierarchy and the necessity that biodiversity offsetting and ecological compensation must be the penultimate and final considerations respectively in a stepped process of assessment. Having said that however, the West Coast RPS only requires the effects management hierarchy to be applied to activities which affect identified Significant Areas⁴², while the pORPS requires the hierarchy to be applied for all activities⁴³.

98. There are two issues here:

- a. How the 'cascade' from each stage to the next is expressed;
- b. Do all effects have to be addressed at each stage, or should there be some assessment of the significance of residual effects at each stage?

How the 'cascade' from each stage to the next is expressed

99. The West Coast RPS provides that effects are to be 'avoided where possible'⁴⁴ and if not avoided, then to be 'remedied where possible'⁴⁵. In contrast, the Auckland RPS, the NPSFM 2020, and the NPSIB Exposure Draft all use the expression

⁴² Policies 7.7 – 7.5 apply only to SNAs. Note that there is reference to some sort of hierarchy in Policy 7.7 which applies to land other than SNAs but its formulation is different to that set out in Policy 7.3.

⁴³ ECO-P3(2) for SNAs and ECO-P6 for all other activities.

⁴⁴ West Coast RPS Policy 7.3(a).

⁴⁵ West Coast RPS Policy 7.3(b).

avoided 'where practicable'. In contrast with both formulations, ECO-P6 of the Otago RPS has no qualifier at each stage of the hierarchy.

100. In my opinion, the preferable formulation is the wording set out in the NPSFM 2020 and the NPSIB Exposure Draft which provide that each step in the hierarchy needs to be implemented 'where practicable'. In my opinion, 'practicable' is a more useful word in this context than 'possible' from an assessment perspective.

Do all effects have to be addressed at each stage, or should there be some assessment of the significance of residual effects at each stage?

101. The West Coast RPS and the pORPS both require all effects to be addressed at each stage, whereas the Auckland RPS requires that only 'significant' residual effects need to be managed. In contrast, the NPSFM 2020, the Regional Plan; Water for Otago (for effects on wetlands and rivers), and the NPSIB Exposure Draft only require 'more than minor residual effects' need be addressed by offsets and compensation.
102. The final step in the NPSFM 2020, the Regional Plan: Water for Otago (for wetlands and rivers), and the NPSIB Exposure Draft is that where compensation is 'not appropriate', the activity itself is to be avoided. None of these documents tries to identify in advance what is and is not 'appropriate' for compensation.
103. This contrasts with the approach in the West Coast RPS, the pORPS, and the NPSIB Exposure Draft for effects on terrestrial biodiversity where offsets and compensation are to be 'considered' but, as I discuss in the next section of my evidence, those documents then attempt to define both offsets and compensation by reference to 'criteria' set out in appendices (APP3 and APP4 for the pORPS). Moreover, ECO-P6 has no qualifier on the effects which must be addressed at each stage of the hierarchy, ie it is all residual effects not 'more than minor' as provided for in the NPSFM.

104. In my opinion, the policy framework in the pORPS for terrestrial biodiversity, like the West Coast RPS, is unnecessarily convoluted and potentially confusing (I address the question of whether it is best practice to have ‘criteria’ for offsets and compensation below).

Conclusion - the ‘effects management hierarchy’ – Policy ECO-P6

105. In my opinion, overall, the NPSFM 2020 provides the preferable formulation of the effects management hierarchy. It is already a requirement of the NPSFM 2020 in relation to wetlands and rivers, and the definitions from the NPSFM are already in the pORPS and the Otago Regional Plan: Water. The NPSFM Exposure Draft does not propose to amend the definition. There is, in my view, no policy justification for the hierarchy to be expressed differently in the pORPS when it applies to effects on terrestrial indigenous biodiversity.

106. In addition, I consider that the way obligations are expressed at each step of the hierarchy in the NPSFM, is more appropriate than ECO-P6⁴⁶.

107. This means that with the definitions of biodiversity offsets and biodiversity compensation inserted, and the definition of effects management hierarchy in the pORPS amended as I suggest above, ECO-P6 can be amended so that it simply reads:

ECO-P6 – Maintaining indigenous biodiversity

Maintain Otago’s indigenous *biodiversity* (excluding the coastal environment and areas managed under ECO-P3) by applying the *effects management hierarchy* in decision-making on applications for *resource consent* and notices of requirement.

⁴⁶ The NPSFM 2020 approach is also consistent with the 2018 guidance which refers to each step in the hierarchy being ‘applied to the extent practicable’ (page 67).

OFFSETS AND COMPENSATION – ‘CRITERIA’ OR ‘PRINCIPLES’?

108. This section of my evidence discusses the development of the principles of offsetting and compensation by BBOP and consider how the principles have been applied in New Zealand. As I have noted, my primary concern with the pORPS (as with the NPSIB Exposure Draft) is that ECO-P6, APP3, and APP4 in the pORPS are inconsistent with the way offset principles have been developed because they refer to them as ‘criteria’ that ‘must be met’ in order to ‘qualify’ as an offset. In contrast, the NPSFM (correctly in my opinion) treats the principles as matters which must be considered, and the appropriateness of a particular proposed offset is assessed in light of the evidence on each of those considerations. That is, the pORPS attempts to provide an *a priori* ‘bright line’ test for what can be considered an offset. This sets up applicants, submitters, and the council for extended arguments about what the definitions mean and how they should be applied. In contrast, when the offset principles are used as they were intended – as assessment matters and guidance about how to assess appropriateness - the emphasis can be on the cogency of the evidence presented in support of a specific proposed offset to address a specific proposed residual effect.
109. While having a ‘bright line test’ may seem an attractive proposition to some who are tasked with applying the pORPS in deciding consent applications, in my opinion bright line tests only work effectively and efficiently when the criteria are very clear for all interested parties. Based on my experience, the criteria in the pORPS are neither agreed upon nor clear, and rather than simplifying the application of the pORPS, these ‘tests’ will instead result in continuing disagreement between ecologists as to both what the criteria mean and whether they are met.

Key principles of biodiversity offsetting - introduction

110. Biodiversity offsetting is based on a series of widely accepted principles that illustrate the level of rigour required that differentiates offsetting from environmental compensation. It is this rigorous process and the objective, quantified evaluation associated with biodiversity offsetting which make it a preferable option to environmental compensation.
111. The most frequently cited guiding principles for biodiversity offsetting are the ten principles developed by BBOP which includes principles on science, social, culture and policy matters. As noted in the 2018 Guidance document, five of the BBOP principles regarding the mitigation hierarchy, stakeholder participation, transparency, cultural values and knowledge, and equity are already embedded within the RMA. However, five of the BBOP principles are not specifically captured within the RMA. The 2018 Guidance document included an additional principle, 'Ecological equivalence', as demonstrating ecological equivalence is a fundamental step in the process of designing and evaluating an offset proposal. These six principles identified in the 2018 Guidance document are shown in **Table 1**, with the other BBOP principles set out in **Appendix 1** to this evidence.
112. These six principles provide a checklist of design considerations of a well-developed and well-applied offset. The principles should be considered in conjunction with the definition of offsetting, specifically that an offset only applies to residual adverse effects, and must only be considered after all reasonable attempts to avoid, remedy, or mitigate have been exhausted

Table 1: Six principles that underpin good biodiversity offsetting practice in New Zealand.⁴⁷

Principle	Explanation
Limits to offsetting	<p>Many biodiversity values are not able to be offset, and if they are impacted then they will be permanently lost. These situations include where:</p> <ul style="list-style-type: none"> residual impacts cannot be fully compensated for by a biodiversity offset because of the irreplaceability or vulnerability of the biodiversity affected, and there are no technically feasible or socially acceptable options by which to secure gains within acceptable timeframes. <p>In either situation, an offset would be inappropriate. This principle reflects a standard of acceptability for offsetting, and should not be seen as a pathway to allow uncompensated losses. The project should be redesigned wherever possible to avoid effects that cannot be offset. Alternatively, the consent can be declined, or the Applicant may propose some form of compensation.</p>
No-net-loss and preferably a net gain	<p>The goal of a biodiversity offset is a measurable outcome that can reasonably be expected to result in no-net-loss, and preferably a net-gain of biodiversity. A no-net-loss outcome requires that at a specified point in time biodiversity values will be returned to the point they would have been if the impact and offset had not occurred. No-net-loss is measured by type, amount, and condition and requires explicit statements describing: a) the elements of biodiversity for which a no-net-loss outcome is sought; b) the assumed background biodiversity trajectory against which no-net-loss is evaluated and c) the time horizon within which a no-net-loss outcome is to be achieved.</p>
Landscape context	<p>The design of a biodiversity offset should consider the landscape context of both the impact site and the offset site, taking into account interactions between species, habitats, and ecosystems, spatial connections, and system functionality. Consideration of landscape context is captured in the assessment of ecological equivalence across space and time.</p>
Additionality	<p>A biodiversity offset must achieve gains in biodiversity above and beyond gains that would have occurred anyway in the absence of the offset. This requires evaluating the change in biodiversity value under both a 'with offset' and a 'without offset' scenario to estimate the amount of additional gain that can be attributable to the offset action.</p>

⁴⁷ Adapted from Table 1 of the 2018 Guidance.

Principle	Explanation
Permanence	Some aspects of an offset proposal may meet additionality rules, while other proposed actions may not. In such cases, only the amount of gain that can be demonstrated to be additional should count towards the overall offset.
Ecological equivalence	Ecological equivalence describes the degree to which the biodiversity gain attributable to an offset is balanced with the biodiversity losses due to development across type, space, and time; and therefore, whether the exchange achieves no-net-loss. Assessing ecological equivalence requires the biodiversity at both the impact and the offset site to be described and measured to quantify losses and gains. Demonstrating ecological equivalence differentiates biodiversity offsetting from environmental compensation.

113. The 2018 Guidance for local government noted that, despite there being no national direction on the concepts, councils were beginning to include biodiversity offset provisions in their statutory plans and policy statements. The three examples considered in that document were Horizons Regional Council's 'One Plan' (2012), Auckland Council's Unitary Plan (2016), and Christchurch City Council's Replacement City Plan (2016).

114. The 2018 Guidance provided recommendations to councils on how to address these issues and provide for biodiversity offsetting within regional policy statements and/or regional and district resource management plans. It set out a table of recommended provisions for biodiversity offsetting policy, which I have reproduced as Appendix 1 to this evidence. The 2018 guidance also provided recommended wording for offsetting policies which I have reproduced as Appendix 2 to this evidence.

115. The NPSFM Exposure Draft and the NPSIB Exposure Draft each provide an appendix which set out proposed ‘Principles for aquatic offsetting’⁴⁸ and ‘Principles for biodiversity offsetting’⁴⁹. While both appendices have 11 principles, they fundamentally differ in how they are to be applied and two principles (‘when offsetting is not appropriate’, and ‘long-term outcomes’) are expressed differently.

116. The NPSIB Exposure Draft provides:

biodiversity offset means a measurable conservation outcome that complies with the principles in Appendix 3 and results from actions that... (my emphasis)⁵⁰

The following sets out a framework of principles for the use of biodiversity offsets. These principles represent a standard for biodiversity offsetting and must be complied with for an action to qualify as a biodiversity offset.⁵¹ (my emphasis)

117. I consider these words to also be inconsistent, and therefore create confusion, with the reference in the NPSIB Exposure Draft clause 3.10(4)(a) (“an application is not granted unless (a) the decision-maker is satisfied that the applicant has demonstrated how each step of the effects management hierarchy will be applied”), and the reference to ‘the principles for their application’ when referring to biodiversity offsets in the definition of ‘effects management hierarchy’ in clause 1.5(4).

118. The pORPS follows the approach of the NPSIB Exposure Draft. Biodiversity offsets are only ‘available’ if the ‘criteria’ in APP3(2) are ‘met’. Offsetting must be ‘in accordance with’ the criteria in APP3.⁵²

⁴⁸ NPSFM Exposure Draft 2022 Appendix 6.

⁴⁹ NPSIB Exposure Draft 2022, Appendix 3.

⁵⁰ NPSIB Exposure Draft Clause 1.6.

⁵¹ NPSIB Exposure Draft Appendix 3.

⁵² ECO-P6(4).

119. In contrast, the NPSFM 2020 takes a different approach. It provides a definition of 'aquatic offset', but that definition is framed differently from the NPSIB Exposure Draft. As enacted, the NPSFM 2020 has no appendix setting out the 'criteria for aquatic offsetting'. The NPSFM 2020 definition relates to the purpose for which the offset is being proposed⁵³, rather than combining that definition with limits about what can and cannot 'qualify' as an offset. As I have noted above, I consider it significant that the 2022 NPSFM Exposure Draft proposes to link the principles with the effects management hierarchy by providing that regional plans must add a provision that a consent may not be granted unless "the council is satisfied that, if aquatic offsetting or aquatic compensation is applied, the applicant has had regard to the principles in Appendix 6 or 7, as appropriate"⁵⁴ (my emphasis). This approach I consider to be more consistent with both the BBOP approach and the 2018 Guidance.

120. In my opinion, the NPSFM 2020 approach (both as enacted and as proposed to be amended) allows for a full consideration of the relevant wetland or river values and the specific merits of the proposed offset, rather than attempting to determine fixed limits in advance and in the abstract.

Principles relating to biodiversity compensation

121. Biodiversity compensation has received much less attention than biodiversity offsets in the various guidance documents. That is primarily because it is recognised that compensation cannot balance gains with losses in the same way as an offset and is therefore not required to adhere with the principles of biodiversity offsetting, especially equivalence, no-net-loss or net-gain objectives. Nonetheless,

⁵³ Clause 3.21(2).

⁵⁴ Clause 3.22(3)(b).

it is my opinion that best practice compensation “should be guided by principles in the same manner as an offset, to the extent practicable”, and that the planning provisions “should recognise that any environmental compensation proposed should generally follow the principles/guidance for an offset”.⁵⁵

122. The NPSFM Exposure Draft and the NPSIB Exposure Draft also provide appendices which set out proposed ‘Principles for aquatic compensation’⁵⁶ and ‘Principles for biodiversity compensation’.⁵⁷ Like the principles for offsetting, the two Exposure Drafts fundamentally differ in how the principles for compensation are to be applied, and they are in both cases almost identical to the principles for offsetting, except that two additional principles (‘Trading up’ and ‘Financial contribution’) are added (although the principle of financial contribution differs between the two documents).

123. The NPSIB Exposure Draft provides:

biodiversity compensation means a conservation outcome that complies with the principles in Appendix 4 and results from actions that... (my emphasis)⁵⁸

The following sets out a framework of principles for the use of biodiversity compensation. These principles represent a standard for biodiversity compensation and must be complied with for an action to qualify as biodiversity compensation⁵⁹. (my emphasis)

124. In the same way as it does for offsetting, the NPSFM provides for compensation by requiring regional plans to add a provision that a consent may not be granted unless “the council is satisfied that, if aquatic offsetting or aquatic compensation is applied,

⁵⁵ 2018 Guidance Table 2, page 13. This is the approach used in both the NPSFM and NPSIB Exposure Drafts.

⁵⁶ NPSFM Exposure Draft 2022 Appendix 7.

⁵⁷ NPSIB Exposure Draft 2022, Appendix 4.

⁵⁸ NPSIB Exposure Draft Clause 1.6.

⁵⁹ NPSIB Exposure Draft 2022, Appendix 4.

the applicant has had regard to the principles in Appendix 6 or 7, as appropriate.”⁶⁰

Similarly, like offsetting, I consider this approach to be more consistent with the BBOP approach as reflected in the 2018 Guidance. Again, it allows for a full consideration of the relevant indigenous biodiversity values and the specific merits of the proposed compensation, rather than attempting to determine fixed limits in advance and in the abstract.

125. Consequently, it is my opinion that the pORPS should be amended to follow the approach in the NPSFM Exposure Draft. My recommended amendments are set out in **Appendix 4**. As with all the amendments I recommend in this evidence, I have assumed that the ORC has some ability to determine how offsets and biodiversity compensation are described and applied in Otago. However it may be that the ORC has no discretion and will need to insert prescribed wording from the NPSIB.

THE PRINCIPLE OF LIMITS TO OFFSETS AND COMPENSATION

126. The principle about ‘limits to offsets’ is proposed to be given effect to in the pORPS directly through APP3(1), and indirectly by way of making offsets only ‘available’ if the ‘criteria’ in APP3(2) are ‘met’. As I have noted, offsetting must be ‘in accordance with’ the criteria in APP3.⁶¹ The approach of the pORPS contains elements which are found in both the West Coast RPS and the NPSIB (both as notified and the Exposure Draft) but is inconsistent with the approach in the NPSFM Exposure Draft.

127. In considering the appropriateness of the approach to ‘limits to offsets’ in the pORPS, I:

- a. first describe the development of this ‘limits to offsets’ principle from BBOP,

⁶⁰ Clause 3.22(3)(b).

⁶¹ ECO-P6(4).

- b. describe how this is approached in the 2018 Guidance document; and
 - c. consider how the principle is given effect to in the West Coast Regional Policy Statement 2020, the NPSFM 2020, the 2022 NPSFM Exposure Draft, and the 2022 NPSIB Exposure Draft as the most recent examples of other policy formulations in New Zealand.
128. I then compare those other examples with the approach in the pORPS, and comment on what I consider to be the most appropriate policy response. I conclude by setting out my opinion on why I consider the pORPS to be inconsistent with best practice, and provide my recommendations about amendments that would improve the wording of the provisions.

BBOP and the principle of ‘limits to offsets’

129. This principle about limits to offsets derives from the work of the Business and Biodiversity Offsets Programme (BBOP).
130. As I noted above in the Introduction, BBOP’s work is intended to be flexible and provide guidance rather than dictating specific rules. That is reflected in the following comments from BBOP documents:

***Not-offsetable thresholds:** Where the residual negative impacts of a proposed project are likely to be so great as to lead to irreplaceable loss of biodiversity (e.g. global EXTINCTION of a species), no biodiversity offset could compensate for such loss. In these circumstances, biodiversity offsets would be impossible. Similarly, biodiversity offsets may be an inappropriate approach for a species or ecological community that is currently or has already undergone a significant decline, as the risk that the offset will fail could be too high... Beyond global species extinction, the guidance in this Handbook avoids suggesting that there are clear ‘bright line’ thresholds (i.e. firm dividing lines between what can be offset and what cannot) because, as yet, there is no consensus on these. Some initial approaches based on best available knowledge are*

emerging, but this is an area that needs more discussion and consensus in society.⁶²

In general, whether a specific set of development impacts on biodiversity can and should be offset is context dependent and needs to be established on a case by case basis. This requires consideration of a wide range of ecological, legal, socio-economic and financial factors, and should be guided by the advice of suitably qualified specialists and local expertise.⁶³

Irreplaceability and vulnerability are key concepts in understanding and determining the ecological constraints on the feasibility of an offset. Irreplaceability is defined in the context of a conservation target set for biodiversity with the aim of ensuring the persistence of a full range of biodiversity, to maintain biodiversity or to halt its further decline. Appropriate targets vary with the type and status of the biodiversity concerned and its context...The irreplaceability of a site or an area is defined ... as: 1) the likelihood that the site will be needed as part of a conservation system that achieves the set of targets and the biodiversity conservation goals; and 2) the extent to which the options for achieving the set of targets are reduced if the area is not available for conservation (e.g., if the site is lost due to development impacts). Irreplaceability is therefore a contextual measure, i.e., it is understood at a specific scale (e.g., at the regional or national scale). High irreplaceability means high risk for offsetting.

Vulnerability is defined ... as ‘the likelihood or imminence of biodiversity loss (e.g., of a particular species) due to current or impending threatening processes’. These threats may be habitat loss, degradation, or fragmentation, over-harvesting or hunting, and other factors that compromise the amount, condition and functionality of this type of biodiversity and therefore its continued representation and persistence in the landscape. Vulnerability can be specified at the level of a particular site and its biodiversity (e.g., an industrial complex is proposed to be built on the site) or for biodiversity components (e.g., a species is globally or regionally threatened due to the fragmentation of its habitat). The IUCN Red List is a globally accepted system for listing vulnerable species (i.e., those that are threatened or endangered) according to agreed criteria. While the Red List is designed to detect the risk of species extinction, the concept of vulnerability can also be extended to ecosystems. Note that in practice precise definitions of vulnerability may vary, as do the criteria for determining the vulnerability of particular biodiversity components or sites.

⁶² Business and Biodiversity Offsets Programme (BBOP). 2012. Biodiversity Offset Design Handbook-Updated. BBOP, Washington, D.C. Page 7.

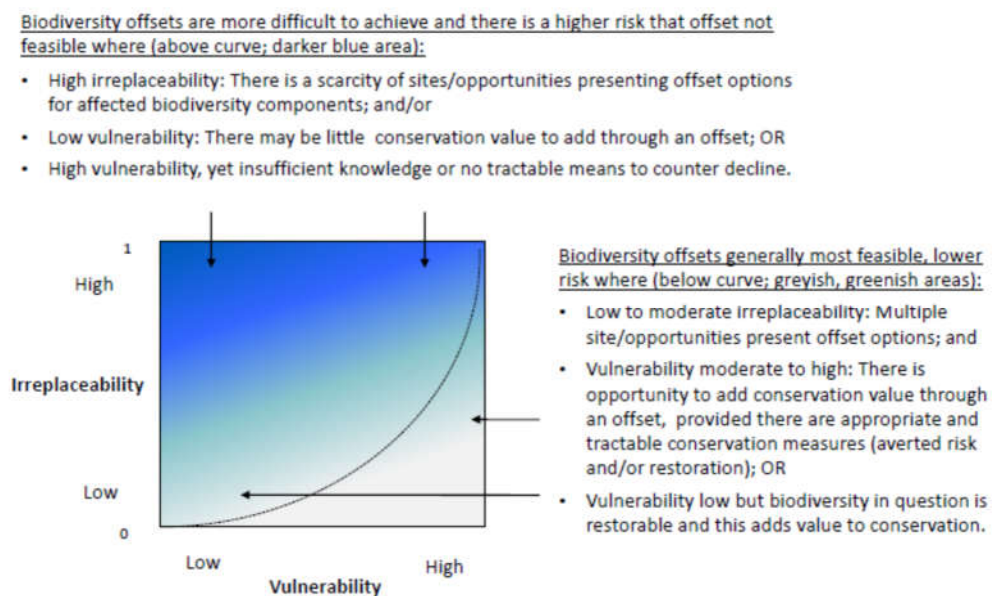
⁶³ Business and Biodiversity Offsets Programme (BBOP). 2012. Resource Paper: Limits to What Can Be Offset. BBOP, Washington, D.C. Page 3.

*Vulnerability indicates both risk and opportunity - by adding conservation value - for offsetting.*⁶⁴

131. Importantly, the BBOP guidance provides that the inability to meet the requirements for an offset does not necessarily mean that a project should not proceed:

*If there are residual impacts that cannot be offset, have you planned an appropriate response? Options include either taking further steps than were initially planned to avoid / minimise those impacts, to reconsider the project, or to proceed, acknowledging that it is impossible to offset the impacts. (In this case, other compensatory conservation measures could be very worthwhile, but it is important to be open with stakeholders about the fact that it is impossible to offset all the impacts).*⁶⁵

132. BBOP expresses this graphically as follows:⁶⁶



⁶⁴ Business and Biodiversity Offsets Programme (BBOP). 2012. Resource Paper: Limits to What Can Be Offset. BBOP, Washington, D.C. Page 5.

⁶⁵ Business and Biodiversity Offsets Programme (BBOP). 2012. Biodiversity Offset Design Handbook-Updated. BBOP, Washington, D.C. Page 23.

⁶⁶ Business and Biodiversity Offsets Programme (BBOP). 2012. Resource Paper: Limits to What Can Be Offset. BBOP, Washington, D.C. Figure 3 Relationship between Irreplaceability and Vulnerability and the Feasibility of Offsets. Page 6.

133. This Figure confirms the extracts quoted above that the principle of limits to offsets is a matter for a discretionary consideration based on a range of factors. There are no 'bright line tests'.
134. To provide objectivity on the question whether the proposal would offend against the limits to offsets principle, one common approach is to use what is known as the 'Pilgrim approach'. This derives from a 2013 paper by Pilgrim et al which is broadly based on "Combining biodiversity conservation concern with the likelihood of offset success in a burden of proof framework"⁶⁷. The process includes a sequential assessment of:
- a. The biodiversity concern, which is based on vulnerability and irreplaceability:
 - i. Vulnerability equates to "threat status" with the Pilgrim process assigning five vulnerability categories aligned with IUCN red-list categories in descending order of vulnerability, namely: Critically endangered; Endangered; Vulnerable; Near Threatened / Least Concern; and Data deficient / Not evaluated .
 - ii. Irreplaceability equates to the importance of sites to the global persistence of the ecosystem type or species, ie the percentage of the global range or population of a biodiversity feature sustained by the area of analysis.
 - b. An assessment of offset or compensation feasibility is based on the technical potential and the availability of offset opportunities. Categories range from Class I (lowest potential for offset opportunities) to Class IV (highest potential for offset opportunities).

⁶⁷ A process for assessing the offsetability of biodiversity impacts. Conservation Letters, 6(5) Pilgrim, J. D., Brownlie, S., Ekstrom, J. M., Gardner, T. A., von Hase, A., Kate, K. T., Savy, C. E., Stephens R. T. T., Temple, H. J., Treweek, J., Ussher, G. T. & Ward, G. (2013), at pg 376–384.

c. An assessment of offset or compensation certainty with respect to implementation and delivery of No Net Loss or preferably Net Gain outcomes. Categories range from Class I (lowest level of certainty) to Class IV (highest level of certainty).

135. The Pilgrim process assessment is also consistent with BBOP in that it sees the question as one of analysis rather than a 'test' and expresses it in diagrammatic form in the following way:

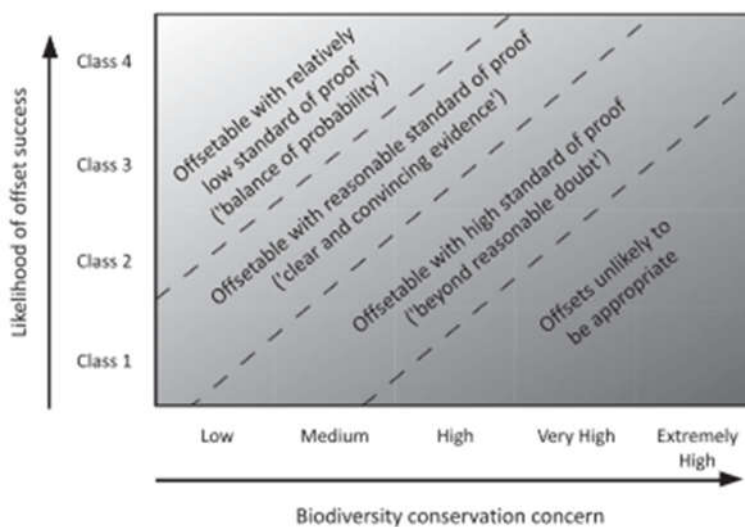


Figure 2 Burden of proof conceptualization of offsetability, combining biodiversity conservation concern and likelihood of offset success. A practical framework may thus, e.g. view offsets as unlikely to be appropriate for: Class 1 likelihood of offset success for areas of High, Very High, and Extremely High conservation concern; Class 2 for Very High and Extremely High concern; and Class 3 for Extremely High concern.

136. Uptake of the Pilgrim process has been slow and inconsistently applied for New Zealand projects. I am the co-author of an article which is, at the time of writing this evidence, in press⁶⁸. This article proposes a framework to address a recognised

⁶⁸ J Markham, M Baber, J Quinn, M Christensen, T Ryan, M Lowe, S Knowles, D Miller, G Ussher *Assessing limits to biodiversity offsetting in New Zealand: a proposed framework* (in press).

gap in national guidance on how to assess project effects against the 'limits to offsetting' principle. It draws on both the Environment Institute of Australia and New Zealand's 2018 Ecological Impact Assessment Guidelines, and the international approach developed by J Pilgrim and others in the 2013 paper noted above. The article adapts these and applies them sequentially to suggest a broad framework for evaluating the relative 'offsetability' of impacts on biodiversity in a New Zealand context.

The 2018 Guidance and 'limits to offsets'

137. The 2018 Guidance adopts the work of BBOP. As set out in Table 1 above, the 2018 Guidance states that many biodiversity values are not able to be offset, and if they are impacted then they will be permanently lost. These situations include where:

- residual impacts cannot be fully compensated for by a biodiversity offset because of the irreplaceability or vulnerability of the biodiversity affected, and
- there are no technically feasible or socially acceptable options by which to secure gains within acceptable timeframes.

138. The 2018 Guidance states that in either situation, an offset would be inappropriate. It states: "This principle reflects a standard of acceptability for offsetting, and should not be seen as a pathway to allow uncompensated losses. The project should be redesigned wherever possible to avoid effects that cannot be offset. Alternatively, the consent can be declined, or the Applicant may propose some form of compensation".

The approach to 'limits to offsets' in the West Coast Regional Policy Statement

139. The West Coast RPS is useful to consider because the pORPS uses the same approach of both providing specific limits to offsets and attempting to define offsets by reference to listed criteria.

140. Policy 7.2 of the West Coast RPS provides:

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

The prevention of an indigenous species' or a community's ability to persist in their habitats within their natural range in the Ecological District, or

b) A change of the Threatened Environment Classification to category two or below at the Ecological District Level; or

c) Further measurable reduction in the proportion of indigenous cover on those land environments in category one or two of the Threatened Environment Classification at the Ecological District Level; or

d) A reasonably measurable reduction in the local population of threatened taxa in the Department of Conservation Threat Classification Categories 1 – nationally critical, 2 – nationally endangered, and 3a – nationally vulnerable.

141. However, in addition to these 'limits', Policy 7.4 goes on to provide what is in effect another 'limit' by stating:

Provided that Policy 2 is met, and the adverse effects on a SNA cannot be avoided, remedied or mitigated, in accordance with Policy 3, then consider biodiversity offsetting if the following criteria are met:

(a) Irreplaceable or significant indigenous biological diversity is maintained; and

(b) There must be a high degree of certainty that the offset can be successfully delivered; and

(c) The offset must be shown to be in accordance with the six key principles of

i. Additionality: the offset will achieve indigenous biological diversity outcomes beyond results that would have occurred if the offset was not proposed;

ii. Permanence: the positive ecological outcomes of the offset last at least as long as the impact of the activity, preferably in perpetuity;

iii. No-net-loss: the offset achieves no net loss and preferably a net gain in indigenous biological diversity;

iv. Equivalence: the offset is applied so that the ecological values being achieved are the same or similar to those being lost;

v. Landscape context: the offset is close to the location of the development; and

vi. The delay between the loss of indigenous biological diversity through the proposal and the gain or maturation of the offset's indigenous biological diversity outcomes is minimised

(d) The offset maintains the values of the SNA.

142. In my opinion, the wording of both policies is unsatisfactory in their attempt to define limits to offsets and what is, and is not, an offset. None of the terms used are defined in the West Coast RPS. In Policy 7.2(a) it is unclear what a species or community's 'ability to persist' means. In Policy 7.2(c) it is unclear what a 'further measurable reduction' means. In Policy 7.2(d) it is unclear what a 'reasonably measurable reduction' means. Policy 7.2 is expressed as principles or assessment matters rather than criteria.

143. Clause (c) of policy 7.4 converts the principles from BBOP into 'criteria' which 'must be satisfied'. This wording has led to evidential arguments about what each of these terms mean⁶⁹, and consequently whether the actions proposed by the applicant there should be considered an 'offset'. Moreover, it is my opinion that this approach tends to result in technical disputes about definitions, rather than concentrating on the substantive merits of the proposals to address residual effects.

144. In its decision approving the mediated settlement on the West Coast RPS, the Court noted that it was difficult to assess whether the wording put before it better achieved the purpose of the Act than the council's decision version, but that the settlement "represents a policy decision reached with a range of interest groups. This Court is reluctant to involve itself in revisiting a policy decision, unless there is a contest of evidence or a disagreement".⁷⁰

⁶⁹ These arguments are to be tested by the Environment Court in the Te Kuha appeal hearing which begins on 1 August 2022.

⁷⁰ *Heritage New Zealand Pouhere Taonga v West Coast Regional Council* [2020] NZEnvC 80 at paragraphs [96] and [[97].

145. It also stated, that in considering this memorandum, the changes are seen as a package. It is clear that the parties have made concessions in some areas for gains in other areas. That is to be expected with a document as complex as a Policy Statement and the purpose for this Court is not to assess every wording or variance but to be satisfied that overall this advances the purpose of the Act and represents better provisions than those in the Plan currently.”⁷¹

146. The West Coast RPS approach has been adopted in the pORPS.

147. As I discuss below, it is my opinion that a preferable approach is to refer in the policy to the limits to offsets principle and then reword all the ‘criteria’ to become ‘matters for assessment’ of the appropriateness of the proposed offset. This would be consistent with the approach in the NPSFM Exposure Draft.

The approach to ‘limits to offsets’ in the NPSIB Exposure Draft

148. In my opinion, the NPSIB Exposure Draft includes wording around the issue of limits to offsets which is problematic. This is important because the pORPS takes a similar approach and uses similar wording. I consider that the general approach set out in the NPSFM Exposure Draft is preferable, for reasons which I explain below.

149. The NPSIB Exposure Draft provides for limits on offsets in three ways. **First**, Clause 3.10 sets out the following list of effects on an SNA which must be avoided (which means they cannot be offset or compensated for):

- a. loss of ecosystem representation and extent:
- b. disruption to sequences, mosaics or ecosystem function:
- c. fragmentation of SNAs or the loss of buffers of connections within an SNA.
- d. a reduction in the function of the SNA as a buffer or connection to other important habitats or ecosystems:

⁷¹ Paragraph [16].

- e. a reduction in the population size or occupancy of Threatened, At Risk (Declining) species that use an SNA for any part of their life cycle⁷².

150. Importantly, however, there are several exceptions to the prohibition on these effects. The prohibitions do not apply, and all adverse effects on an SNA must be managed instead in accordance with the effects management hierarchy:

- a. if a new use or development is required for the purposes of any of the following;
 - i. specific infrastructure that provides significant national or regional public benefit; or
 - ii. mineral extraction that provides significant national public benefit that could not otherwise be achieved domestically; or
 - iii. aggregate extraction that provides significant national or regional public benefit that could not otherwise be achieved domestically; and
- b. there is a functional or operational need for the new use or development to be in that particular location; and
- c. there are no practicable alternative locations for the new use, or development⁷³.

151. These exclusions from what are otherwise prohibitions are consistent with the NPSFM (including the NPSFM Exposure Draft).

152. The **second** way the NPSIB Exposure Draft provides for limits is through the application of the 'effects management hierarchy' and the definition of 'biodiversity offset'. What that means for biodiversity offsets is set out in Appendix 3 of the NPSIB Exposure Draft. Appendix 3 includes the principle of "When biodiversity

⁷² NPSIB Exposure Draft Clause 3.10(2).

⁷³ NPSIB Exposure Draft Clause 3.11(2).

offsetting is not appropriate” which “must be complied with for an action to qualify as a biodiversity offset”, It states:

2. When biodiversity offsetting is not appropriate: *Biodiversity offsets are not appropriate in situations where biodiversity values cannot be offset to achieve a net gain outcome, and if biodiversity values are adversely affected, they will be permanently lost. This principle reflects a standard of acceptability for demonstrating, and then achieving, a net gain in biodiversity values. Examples of where an offset would be inappropriate include where:*

A. residual adverse effects cannot be offset because of the irreplaceability or vulnerability of the indigenous biodiversity affected:

B. effects on indigenous biodiversity are uncertain, unknown or little understood, but potential effects are significantly adverse:

C. there are no technically feasible or socially acceptable options by which to secure gains within [an] acceptable timeframe.⁷⁴

153. In my opinion, this wording introduces significant uncertainties. I note:
- a. The text confuses the ‘chapeau’ with the examples listed. The approach in the NPSFM Exposure Draft, Appendix 6 clause 2 is clearer.
 - b. The reference is to biodiversity values in the plural rather than biodiversity value in the singular. Using the plural presupposes the offset is to address effects on several biodiversity values. It is conceivable only one value is affected. Using ‘value’ in the singular does not preclude consideration of multiple values.
 - c. The reference to ‘permanently lost’ is problematic. It is axiomatic that a project which removes biodiversity values from an impacted area (such as a road, mine, or a building) inevitably results in the permanent loss of the existing biodiversity from that affected site. Even if the site is rehabilitated, the original biodiversity is permanently lost (except perhaps where there has

⁷⁴ NPSIB Exposure Draft Appendix 3.

been relocation of plants and animals which are then returned to the site). It can be (and in my experience, has been) argued that such a situation fails this 'test'. Moreover, it is unclear if the reference to 'permanently lost' refers to total loss (extinction) of species, or perhaps habitat type. If it does not mean loss from the site, does it mean permanent loss more widely, such as from an Ecological District?

- d. In the absence of completing the implementation of an offset in advance of the impact, I do not think it is possible to 'demonstrate' a net gain prior to achieving that gain. Rather, I believe what is being discussed here is a requirement to provide an adequately robust evidential basis that a proposed offset is appropriate and will be delivered.
- e. In A, like the West Coast RPS, the NPSIB Exposure Draft does not define 'irreplaceable' or 'vulnerable'. In my experience, some ecologists are of the view that most remaining indigenous vegetation, particularly any which is threaten or at risk or is identified in the priorities for protection on private land is irreplaceable or vulnerable.
- f. In A, does the wording mean that once biodiversity has been identified as irreplaceable or vulnerable, it is automatically ineligible for offsetting, irrespective of the certainty around the achievability of the offset, or conversely the risk that an offset cannot be achieved? As I comment below, it is my view that rather than appearing to try to set a 'bright line test' of 'offsettability', this consideration should be about the risk of loss of very high

value biodiversity where the likelihood of the offset achieving its objectives includes unacceptable uncertainty⁷⁵.

- g. In B, in all instances I have been involved in where offsets are in contention, it has been argued (in both submissions and expert evidence) that the effects on indigenous biodiversity are uncertain, or are (at least) 'little understood', especially in the long term. I certainly accept that ecology by its very nature includes much which is 'uncertain' and involves opinion and judgment. It is also my experience that some ecologists are of the opinion that all identifiable residual adverse effects on indigenous biodiversity are 'significant'.
- h. In B, the meaning of 'significantly adverse' is not defined. Is it intended to relate to the assessment of effects set out in the 2018 Ecological Impact Assessment Guidelines published by the Environment Institute of Australia and New Zealand?⁷⁶ Does 'potential effects' refer to effects of the proposal, or the residual effects taking into account the likelihood of success of the proposed offset? In my opinion, a better term would be 'unacceptable effects' as the acceptability of a proposed offset should be part of the overall assessment.
- i. There is no definition of what is 'technically feasible', 'socially acceptable', or is an 'acceptable timeframe'. While these are all relevant issues which should be considered in an assessment of the acceptability of a proposed

⁷⁵ For a discussion about 'offsetability' related to irreplaceable and vulnerable biodiversity see J Markham, M Baber, J Quinn, M Christensen, T Ryan, M Lowe, S Knowles, D Miller, G Ussher *Assessing limits to biodiversity offsetting in New Zealand: a proposed framework* (in press)

⁷⁶ EIANZ guidelines for use in New Zealand: terrestrial and freshwater ecosystems, 2nd edition (2018) Roper-Lindsay, J., Fuller S.A., Hooson, S., Sanders, M.D., Ussher, G.T. Ecological impact assessment. EIANZ guidelines for use in New Zealand: terrestrial and freshwater ecosystems.

offset, without clear definitions, they are unhelpful as examples of a 'bright line test' which is what Appendix 3 of the NPSIB Exposure Draft purports to be.

154. The **third** (and perhaps most significant) way the NPSIB Exposure Draft provides for limits is through the application of references to the 'maintenance of indigenous biodiversity'.

155. 'Maintenance', as one of the 'fundamental concepts' in the NPSIB⁷⁷, is defined:

The maintenance of indigenous biodiversity requires at least no reduction, as from the commencement date, in the following:

- a) *the size of populations of indigenous species:*
- b) *indigenous species occupancy across their natural range:*
- c) *the properties and function of ecosystems and habitats:*
- d) *the full range and extent of ecosystems and habitats:*
- e) *connectivity between and buffering around, ecosystems:*
- f) *the resilience and adaptability of ecosystems.*

156. These are very wide and undefined concepts. Given the importance which is placed on 'maintenance' in the NPSIB Exposure Draft⁷⁸, I consider that it is also likely to be argued, and expert evidence given, that any effect which falls into one of more of these listed will be one for which an offset is 'inappropriate' and therefore actions taken which would otherwise be appropriately called an offset would not 'qualify' to be either an offset in Appendix 3, or compensation under Appendix 4.

157. Considering these extensive and widely expressed limits, in my view it is likely that there will be little, if any, place for the effective application of biodiversity offsets or biodiversity compensation (as defined) under the NPSIB Exposure Draft. The

⁷⁷ NPSIB Exposure Draft Clause 1.5(3).

⁷⁸ Eg Clauses 1.5(3), 3.2(b), 3.5(a), 3.5(b), 3.6(a), 3.25(2)

problem, in my opinion, is not necessarily with the concepts themselves or the importance placed on them by the NPSIB. Rather my concern arises because of the wording of the NPSIB Exposure Draft which confuses 'principles' and 'criteria' and sets these issues up as if they are criteria to be met or failed (a 'bright line test'), instead of principles or matters to be assessed in light of the evidence. Consequently, it is my opinion that there is considerable risk that significant effort is diverted into arguing and determining fine distinctions between what can and cannot be 'classified' as a biodiversity offset, rather than whether the effects management hierarchy has been appropriately applied in the circumstances and the appropriateness of the measures (offsets and compensation) proposed to address more than minor residual effects

Limits to aquatic offsetting in the NPSFM Exposure Draft

158. As I have noted above the NPSFM Exposure Draft defines an aquatic offset with reference to the purpose for which the offset is being proposed, rather than combining that definition with limits about what can and cannot 'qualify' as an offset. Appendix 6 of the NPSFM Exposure Draft sets out a principle about 'When aquatic offsetting is not appropriate' which lists three examples which are similar to those in the NPSIB Exposure Draft, but importantly, they are not expressed as criteria. Rather, they remain as one of the principles that the council must be satisfied that an applicant 'has had regard to'.⁷⁹

The proposed Otago RPS

159. I have reviewed the provisions of both the partially operative Otago RPS and the proposed Otago RPS. While there are some differences in detail between the two

⁷⁹ Clause 3.22(3)(b) NPSFM Exposure Draft.

documents, in terms of the identified limits to both offsetting and compensation the proposed RPS, notwithstanding the changes made to provisions as a result of submissions, effectively applies the same provisions as were inserted in the operative RPS following the Environment Court's decisions in 2019⁸⁰.

160. Similar to the West Coast RPS, the pORPS provides for 'limits' in two ways: (a) direct limits in APP3(1), and indirectly as part of the criteria for determining if biodiversity offsetting is 'available' in APP3(2).

Direct limits

161. In terms of its direct provision of limits, APP3(1) of the pORPS provides (as per the recommended changes in the s42A report):

APP3 – Criteria for biodiversity offsetting

- (1) Biodiversity offsetting is not available for an activity that will result in:
- (a) the loss from an ecological district 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
 - (b) 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)
 - (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
 - (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
 - (e) the loss (including cumulative loss) of irreplaceable or vulnerable indigenous biodiversity.
162. In my opinion, the reference to the loss of individuals was novel in 2019 and it remains so. This can be contrasted with the later West Coast RPS which places

⁸⁰ *Oceana Gold (New Zealand) Limited v Otago Regional Council* [2019] NZEnvC 41 and [2019] NZEnvC 122.

the limit not at the loss of an individual specimen of a Threatened species, but at the species or 'community' level.

163. In my opinion, the reference to individuals also appears inconsistent with the NPSIB⁸¹.

164. I note that in *Oceana Gold (New Zealand) Limited v Otago Regional Council*⁸² the Court refers to and quotes from a 2010 paper I authored which included comments about limits to offsets⁸³. While I continue to hold the views expressed in that extract from the paper, it is my respectful opinion that those comments do not themselves provide a justification for setting limits on offsets 'upfront' or provide a justification for the specific limits set by the Court in that decision.

165. Moreover, I believe it is instructive that Forest & Bird which was one of the appellants in the 2019 Otago RPS appeal, later agreed in mediation to the 'higher level' limits which are in the West Coast RPS. Having considered the draft evidence of Mike Thorsen, I consider APP3(1) simply to be unreasonably restrictive, to the point that it potentially undermines the whole objective of proposing a biodiversity offset. It may be that a decision-maker decides on the evidence before them that even the loss of individuals of certain species is unacceptable and cannot be appropriately offset. But, in my opinion, that is a decision which should be made on the evidence and in accordance with the other principles set out in the relevant policy, not decided *a priori* by way of the policy in its current form.

⁸¹ Which refers to populations, ecosystems, habitats and species as part of the requirements to 'maintain' indigenous biodiversity.

⁸² [2019] NZEnvC 41.

⁸³ Christensen, M. *Biodiversity offsets - a suggested way forward*. Resource Management Journal, Resource Management Law Association NZ, 2010.

166. For both these reasons, I consider the scale of assessment in the limits to offsets as set out in Policy 7.2 of the West Coast RPS policy to represent a preferable approach than both the operative and pORPS⁸⁴.

Indirect limits

167. In my opinion, the drafting of ECO-P6(4), APP3 and APP4 (and the submissions lodged on behalf of the Director-General and Forest & Bird on which the s42A report has heavily relied) demonstrate an inappropriate approach to how the application of the effects management hierarchy should be considered and the way in which the RPS should guide or direct an assessment of the appropriateness of a proposed biodiversity offset and/or biodiversity compensation proposal.

168. APP3 is focussed on trying to establish hard and fast definitions for 'mitigation', 'offsetting', and 'biodiversity compensation'. This proceeds on the assumption that there are clear distinctions between each of these terms which can be clearly determined in advance of a specific proposal, and that the classifications are critical.

169. I have a different perspective. I consider that a more nuanced and practical approach is required and that a decision maker is entitled to exercise their discretionary judgment based on the cogency of the evidence that is provided. That is not to say that the definitions of these terms and how the hierarchy is applied is unimportant. They are very important, but in my opinion the fine distinctions between 'avoid', 'mitigate', 'offset' and 'compensate' are not critical or determinative.

170. In my opinion, a better approach would be to amend APP3 so that it sets out the principles or framework for considering the adequacy and appropriateness of a

⁸⁴ Notwithstanding the problems of interpretation with Policy 7.2 I have noted above.

proposed offset, and link that to the application of the effects management hierarchy in the same manner as is proposed in the 2022 NPSFM Exposure Draft. The principle of limits to offsets could be specifically mentioned in a similar way to Appendix 6(2) of the NPSFM Exposure Draft⁸⁵, but with the ‘criteria’ recast as principles or ‘assessment matters’. This would allow full consideration of the merits of a proposal rather than disallowing such a consideration because of predetermined ‘limits’, irrespective of the ecological merits of the proposed offset or compensation. In my opinion, this would still provide applicants and decision-makers with an appropriate ‘signal’ about the importance of this particular principle, but not predetermine the outcome of a full evidential assessment.

171. I recommend that this outcome be achieved by:

- a. adding a clause to the definition of effects management hierarchy⁸⁶ ;
- b. adding a requirement that consent will not be granted unless the council is satisfied that, if aquatic offsetting or aquatic compensation is applied, the applicant has had regard to the principles in APP3 or APP4, as appropriate⁸⁷; and
- c. replacing APP3 with principles which are adapted from those set out in both the NPSFM Exposure Draft and the NPSIB Exposure Draft.

172. I have set out my recommended changes in this regard in **Appendix 4** to my evidence.

⁸⁵ I note that the 2018 guidance does not include a specific reference to limits to offsets in the policies it recommends (Appendix 1 - Recommended wording for biodiversity offsetting provisions in regional policy statements and/or regional and district resource management plans).

⁸⁶ Proposed by the s42A report to be relocated from the definitions section to LF-FW-P13A (page 169 Appendix to the s42A report). In my opinion, the revised definition should be relocated back to the definitions section.

⁸⁷ From the NPSFM Exposure Draft Clause 3.22(3)(b)

WHICH, AND HOW, BIODIVERSITY VALUES ARE TO BE CONSIDERED

173. This section of my evidence comments on two specific matters of wording in

APP3(2)(b):

- a. Which biodiversity values must be included in an assessment of NNL and/or NG; and
- b. Whether the pORPS should require the use of offset modelling, and if so, should it require a specific type or method of modelling?

174. APP3(2)(b) provides that one of the 'criteria' which must be 'met' for biodiversity offsetting to be 'available' is:

the offset achieves 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,

175. The NPSIB Exposure Draft uses similar wording by stating that the following principle 'represents a standard for biodiversity offsetting and must be complied with for an action to qualify as a biodiversity offset'⁸⁸:

Net gain is demonstrated by a like-for-like quantitative loss/gain calculation of the following, and is achieved when the ecological values at the offset site exceed those being lost at the impact site across indigenous biodiversity:

- (a) types of indigenous biodiversity, including when indigenous species depend on introduced species for their persistence; and*
- (b) amount; and*
- (c) condition⁸⁹.*

⁸⁸ NPSIB Exposure Draft Appendix 3 chapeau.

⁸⁹ NPSIB Exposure Draft Appendix 3(3).

'Type, amount, and condition'

176. While these are considerations that should be taken into account when designing an offset, my primary concern here again relates to the way the pORPS requires this 'criterion' to be 'met', rather than having this as an assessment matter which must be considered. I am advised that problems arises when extent and value are applied uncritically. Offsets frequently pursue an increase in condition of an ecological value over a smaller extent than that affected. The ability to achieve a NG in each of these three values or attributes will depend on the circumstances. That should all be part of the discretionary decision making, based on the evidence in support of a proposed offset.

"Measured' and "calculation'

177. I am concerned that this wording is intended, or will be interpreted, to mean first that biodiversity modelling is required in all situations (by using the words 'measured' and 'calculated') and secondly, that specific biodiversity offset accounting models must be used to 'qualify' as an offset, and that the use of a detailed predictive model becomes seen as a 'yardstick' of the type and amount of offsetting, rather than as something which complements the wider assessment based on expert evidence.

178. Due to the inherent complexity of ecosystems, I understand that there are often significant constraints in undertaking like-for-like quantitative loss/gain calculations for type, amount and condition".⁹⁰ There remains considerable disagreement amongst ecologists about which models can appropriately be used in particular situations. That is an issue which, ideally, needs to be the subject of discussion and

⁹⁰ Baber M, Christensen M, Quinn J, Markham J, Kessels G, Ussher G, and Signal-Ross R. 2021. *The use of modelling for terrestrial biodiversity offsets and compensation: a suggested way forward*. Resource Management Journal, RMLA April 2021 28-33.

hopefully agreement amongst ecologists and other relevant experts, outside consent application processes. In my opinion, it is not the place of either the NPSIB or the pORPS to specify which models must be used, so the language of the pORPS should not be able to be interpreted to require either the use of any model, or the use of a specific type of model to 'qualify' as an offset. In my opinion, the risk of such an interpretation is primarily because of the use of the word 'calculated'.

179. The BBOP approach to measuring no net loss/net gain is not as complex. The principle of No Net Loss is stated as:

No net loss: *A biodiversity offset should be designed and implemented to achieve in situ, measurable conservation outcomes that can reasonably be expected to result in no net loss and preferably a net gain of biodiversity.*

180. The BBOP offset design guidance document in relation to the term 'measurable', states the following:

The underlying theoretical assumption is that the offset should address all residual losses for all affected biodiversity, but it is rarely either possible or practical to document and quantify losses for every component of biodiversity or for all dimensions of structure and function. Most approaches therefore demonstrate no net loss using METRICS based on SURROGATES for the entirety of biodiversity which can realistically be measured. These metrics are used in the calculations used of 'no net loss'. The use of surrogates is a practical approach. It cannot do justice to all components of biodiversity, but has the benefit of being workable.

181. In my opinion, this clause of APP3 runs the risk of being interpreted as requiring the use of detailed quantitative loss/gain calculations for type, amount and condition to be an offset. This essentially would define an offset out of existence (that is, it will be highly unlikely that for anything, other than the simplest ecosystems, the 'criterion' can be 'met'). I see no benefit in the pORPS providing for offsets in a manner which means offsets are effectively unavailable in most cases.

182. The method of evaluating losses and gains and level of detail of a loss/gain evaluation may depend on the circumstances. For example, where the biodiversity

in question is more vulnerable or further along the 'irreplaceability continuum' there is likely to be a higher level of certainty required, and this may necessitate the use of some sort of quantitative model rather than a qualitative model, or no model at all. Rather than requiring a 'calculation' (whatever that means) in all situations in order to 'qualify' as an offset, it is my opinion that APP3(2)(b) should be amended as follows:

the offset achieves no net loss and preferably a measurable net gain in indigenous biodiversity, (having regard to ~~as measured by type, amount and condition~~) at both the impact and offset sites using an explicit loss and gain ~~calculation~~ evaluation.

BIODIVERSITY COMPENSATION - APP 4 – 'CRITERIA' OR PRINCIPLES'?

183. This section of my evidence considers biodiversity compensation rather than biodiversity offsets. I have the same concerns about how the pORPS deals with compensation as I set out above with respect to offsets. In the same way that the pORPS provides for offsets in ECO-P6 and APP3, APP4 provides 'limits' for the use of biodiversity compensation, both directly in APP4(1) and indirectly as 'criteria' in APP4(2).

184. In this context, I have again considered how biodiversity compensation is addressed in the West Coast Regional Policy Statement 2020, the NPSFM 2020, the 2022 NPSFM Exposure Draft, and the 2022 NPSIB Exposure Draft as the most recent examples of other policy formulations in New Zealand. I then compare that with the approach in the pORPS. I conclude by setting out my opinion that the pORPS is inconsistent with best practice, and provide my recommendations about amendments that would improve the wording of the provisions.

NPSFM 2020 and aquatic compensation

185. The NPSFM 2020 relating to wetlands and rivers defines and distinguishes between aquatic offsets and aquatic compensation. The latter is defined to mean:

... a conservation outcome resulting from actions that are intended to compensate for any more than minor residual adverse effects on a wetland or river after all appropriate avoidance, minimisation, remediation, and aquatic offset measures have been sequentially applied.

186. The NPSFM provides (for 'eligible' activities such as 'specified infrastructure'):

...

(e) if aquatic offsetting of more than minor residual adverse effects is not possible, aquatic compensation is provided; and

(f) if aquatic compensation is not appropriate, the activity itself is avoided.

187. The NPSFM Exposure Draft proposes to add the word 'measurable' before the words 'conservation outcome' in the definition and proposes to extend the exclusions from the prohibitions on certain effects on wetlands and riverbeds (including mineral extraction)⁹¹.

188. Beyond that, the NPSFM does not provide any 'limits to compensation', 'bottom lines', or criteria that aquatic compensation must meet, although it does state that if aquatic compensation is 'not appropriate' the activity itself should be declined consent. Importantly, the NPSFM Exposure Draft takes the same approach to compensation as it does to offsets by requiring the relevant RPS or regional plan to include a provision that consent will not be granted unless the council is satisfied that the effects management hierarchy has been properly applied and, if aquatic offsetting or aquatic compensation is applied, "the applicant has had regard to the principles in [the relevant appendices], as appropriate."⁹²

⁹¹ NPSFM Exposure Draft Clause 3.22(1)(e).

⁹² NPSFM Exposure Draft Clause 3.22(3)(b).

West Coast RPS and biodiversity compensation

189. In contrast, the West Coast RPS does not define biodiversity compensation but rather provides for listed criteria which must be met for a proposed action to be considered compensation:

5. Provided that [the effects listed in Policy 7.2 are avoided], in the absence of being able to satisfy [the avoidance, mitigation and offset policy 7.2], consider the use of biodiversity compensation provided that it meets the following:

- a) Irreplaceable or significant indigenous biological diversity is maintained; and
- b) The compensation is at least proportionate to the adverse effect; and
- c) The compensation is undertaken where it will result in the best practicable ecological outcome, and is preferably:
 - i. Close to the location of development; or
 - ii Within the same Ecological District; and
- d) The compensation will achieve positive indigenous biological diversity outcomes that would not have occurred without that compensation; and
- e) The positive ecological outcomes of the compensation last for at least as long as the adverse effects of the activity; and
- f) The delay between the loss of indigenous biological diversity through the proposal and the gain or maturation of the compensation's indigenous biological diversity outcomes is minimised .

190. In my opinion, Policy 7.5 in the West Coast RPS suffers the same deficiencies as I have discussed above in respect of Policy 7.4 for offsetting. I have two primary concerns with this policy. First, in addition to the 'limits' which apply generally⁹³, this policy provides an additional 'limit': "Irreplaceable or significant indigenous biological diversity is maintained." As I have noted earlier, those terms are not defined, and it is unclear what 'is maintained' means.

⁹³ In Policies 7.2 and 7.4.

191. Second, it is unclear what would happen if an applicant proposes 'compensation' which does not meet one or more of the criteria in the policy (assuming that it is possible to determine if the criteria are met or not). Unlike the NPSFM 2020 there is no reference to a consideration of appropriateness. All the policy says is that the proposed actions cannot be considered to be 'biodiversity compensation'.
192. Despite not being 'biodiversity compensation' as the West Coast RPS defines it, as I have noted above, it is my opinion that the proposed actions can still be considered as positive actions under section 104(1)(ab) of the Act.

NPSIB Exposure Draft – biodiversity compensation

193. The NPSIB Exposure Draft provides a similar approach to the West Coast RPS. It allows for biodiversity compensation to apply to both SNAs (though restricted to limited 'eligible' activities) and outside SNAs. In both instances, biodiversity compensation may be considered when it is "in accordance with" the effects management hierarchy. Like the West Coast RPS, Appendix 4 of the NPSIB Exposure Draft provides for "a standard for biodiversity compensation which "must be complied with for an action to qualify as biodiversity compensation". In addition, 'biodiversity compensation' is defined with reference to Appendix 4. In appendix 4, there are three additional limits listed which are exactly the same as the additional limits which are listed for biodiversity offsets in Appendix 3 of the NPSIB Exposure Draft.
194. I have the same concerns about how compensation is dealt with in the NPSIB Exposure Draft as I set out above in relation to biodiversity offsets in that Exposure Draft.

Proposed Otago RPS – biodiversity compensation

195. APP4 of the pORPS takes a similar approach to the West Coast RPS and the NPSIB Exposure Draft. For the same reasons as I set out in relation to APP3 for

offsets, I consider APP4 to potentially undermine the effective application of biodiversity compensation in many circumstances.

196. I accept that the decision to include the 'West Coast limits' (communities, populations, and habitats) as opposed to the 'proposed Otago limits' (including removal of habitat of a Threatened or At risk species) is, in the end, a matter of policy. However, in my opinion any such policy needs to be both reasonable and based on expert ecological advice. The proposed Otago RPS policy on compensation is inconsistent with approaches in other contexts. While that in itself is not determinative, I have read the draft evidence of Mike Thorsen who discusses Oceana Golds' Deepdell North application. I consider it instructive that in that application all the expert ecologists agreed that the compensation being proposed to address impacts on At Risk lizards was appropriate, even though the proposal was inconsistent with the operative offset policy. That same offset policy is now repeated in the pORPS. In my opinion, the Deepdell North example demonstrates that, at least in some circumstances, the proposed policy is problematic and ineffective, and not as good as other options.

197. As I have noted, in my opinion, a provision in a statutory planning document which directs that a decision-maker can only consider biodiversity compensation which is defined by way of specific criteria (as the pORPS purports to do) is not as useful as a provision which defines biodiversity compensation in terms of its purpose and then provides a framework of principles against which the appropriateness of any proposed compensation can be assessed.

198. Amending APP4 to take the latter approach would also make it consistent with the way in which the NPSFM 2020 and the NPSFM Exposure Draft require the Council to address offsets and compensation for effects on wetlands and riverbeds. Rather than providing criteria which determine what and what is not compensation and directing that the decision maker is restricted to that assessment, the decision in

the NPSFM 2020 (and the Regional Plan: Water for Otago for wetlands and riverbeds) as to whether a particular aquatic compensation proposal is appropriate is left to the decision maker guided by a set of principles, depending on the circumstances.

Conclusion – policies on environmental compensation – APP4

199. Consistent with my opinion on the best practice approach to policy on biodiversity offsets, it is my opinion that the preferable approach for policy on biodiversity compensation is that APP 4 (as per the revised definition in the s42A report) should be amended to be consistent with the NPSFM Exposure Draft. I have set out my recommendation in that regard in Appendix 4.

SECTION 42A REPORT

200. In my opinion, the reliance throughout the s42A report and the Wildlands report on the draft NPSIB from 2019⁹⁴ is now misplaced. The 2019 draft NPSIB cannot be taken as representing best practice or the government's latest policy position⁹⁵. That is better seen in the 2020 NPSFM, the 2022 NPSFM Exposure Draft, and the 2022 NPSIB Exposure Draft. I acknowledge the latter two documents were released after the s42A was drafted.

201. The s42A report recommends separate definitions for the effects management hierarchy for effects on rivers and wetlands and effects on terrestrial biodiversity. I can see no reason or benefit for differentiating between riverbeds and wetlands on the one hand and biodiversity on the other.

⁹⁴ For example, paragraph 48.

⁹⁵ Notwithstanding that the NPSIB explicitly states that it is not Government policy.

202. Paragraph 58 of the report refers to section 10.4.3 of the Biodiversity chapter and states that the rationale for adopting a 'more stringent approach' than national direction is set out in that section. I have read section 10.4.3 and in my opinion there is no demonstrated link between the discussion/rationale in that section and taking a 'more stringent' approach than national direction as set out in ECO-P6. The NPSFM Exposure Draft provides a consenting pathway for mineral related activities in relation to rivers and wetlands. The NPSIB Exposure Draft does the same for mineral related activities having effects on SNAs. I do not see the s42A report or Appendix 10c as providing any justification for the pORPS not following the same approach.
203. Appendix 10C to the s42A report is an April 2022 report by Wildlands. That report states "With few exceptions, offsetting models developed in recent years for resource consent scenarios in New Zealand have not been robust and have not assisted decision-making" (page 8), "Offsetting models used in resource consent applications to date have mostly not represented good practice, tending to use too much subjectivity in predicting gains, and using qualitative, aggregated metrics that conceal losses of indigenous biodiversity and are difficult to verify" (page 10), and "Poor offsetting practice has frequently been used in New Zealand, and for this reason it is important to have clearly defined limits to offsetting in regional plans" (page 13).
204. The Wildlands report does provide any further details of the basis for these statements, nor explain what the 'poor practice' is, and why the notified pORPS needs to be strengthened beyond that provided in national direction to avoid 'poor practice'.
205. In his 29 September 2022 statement of evidence, the author of Appendix 10c, Dr Kelvin Lloyd, discusses what he considers to be shortcomings of previous practice by Oceana Gold in terms of offsets and compensation. I am unable to comment on

the cogency of his evidence from an ecological perspective, although I understand his conclusions are contested by Dr Mike Thorsen. Notwithstanding that, even if Dr Lloyd is correct in his criticisms of that specific work by Oceana Gold, there is still no explicit link between 'poor practice' (in this case allegedly of one specific company) and the need for the pORPS to take a different approach to the NPSFM and NPSIB Exposure Drafts because of that 'poor practice'. I am aware that over recent decades there are many examples of poor practice relating to offsets and compensation at all levels - from applicants, consent holders and councils. Many of those examples were established before there was any real level of rigour in policy documents about what is biodiversity offsetting and biodiversity compensation and what is best practice in that regard, and prior to increased monitoring and scrutiny of outcomes. In my opinion, to the extent that they are valid, Dr Lloyd's criticisms point to the need for better and more informed and consistent policy, better planning, improved biodiversity impact assessments, more comprehensive monitoring, and greater enforcement, across the board.

206. In the absence of any justification for those comments in the s42A report, in **Appendix 5** I comment briefly on a 2020 article which comments on an Australian National Audit Office's report on the administration of biodiversity offsets under the Australian Environment Protection and Biodiversity Conservation Act 1999. The article states that the "Audit provides an opportunity to learn from Australia's mistakes and avoid some of the most serious outcomes that result from poor exchanges and poor implementation". I conclude that the concerns expressed in that article are either adequately addressed in the pORPS if it is amended as I recommend, or are not issues related to statutory policy.

207. In my opinion, the Wildlands April 2022 report's reliance on the Department of Conservation's 2014 Guidance are also misplaced. My experience, and the advice I have received from several ecologists, is that the 2014 Guidance document is

incapable of practical application. Around 2018 when I was a member of the Conservation Authority, the Authority asked Department of Conservation senior managers for advice on where and when the guidelines had been used. The Department was, at that time, unable to point to any instance where the 2014 Guidelines had been applied. I am not aware of it having been used subsequently. In contrast, while I note that I am a co-author of the 2018 Guidance for Local Government New Zealand, I believe the 2018 Guidance can be, and has been, practically applied.

CONCLUSION

208. I have several concerns about the way the pORPS purports to 'go it alone' in terms of policy on biodiversity offsets and biodiversity compensation. My fundamental concern is the way in which the pORPS places limits on the use of offsets. I consider the pORPS to be not in accordance with best practice, difficult to interpret and apply, and likely to result in the effective implementation of biodiversity offsets mostly unavailable. In my opinion, the pORPS' existing wording to be neither effective nor efficient policy.

209. I consider the approach to offsets and compensation which is currently the best is that set out in the NPSFM Exposure Draft (with some minor changes). The approach there is, in my opinion, more effective and efficient than the pORPS. I recommend that the pORPS be amended to align with the approach in the NPSFM Exposure Draft. I have provided a set of amendments to the pORPS which I believe will achieve that outcome.

Mark Christensen

22 November 2022

APPENDIX 1 – ADDITIONAL BBOP OFFSET PRINCIPLES ALREADY INCORPORATED WITHIN THE RMA⁹⁶

Principle	Explanation
Adherence to the mitigation hierarchy	A biodiversity offset is a commitment to redress significant residual adverse impacts. In an RMA context offsets should only be contemplated after steps to avoid, remedy, or mitigate adverse effects have sequentially been exhausted, and thus applies only to residual biodiversity impacts.
Stakeholder participation	The effective participation of stakeholders should be ensured in decisionmaking about biodiversity offsets, including their evaluation, selection, design, implementation, and monitoring. Stakeholders are best engaged early in the process.
Transparency	The design and implementation of a biodiversity offset, and communication of its results to the public, should be undertaken in a transparent and timely manner.
Science and Traditional Knowledge	The design and implementation of a biodiversity offset should be a documented process informed by science, including an appropriate consideration of traditional knowledge.
Equity	A biodiversity offset should be designed and implemented in an equitable manner, which means the sharing among stakeholders of the rights and responsibilities, risks and rewards associated with a project and offset in a fair and balanced way, respecting legal and customary arrangements. This includes consideration of effects on local communities in relation to both the impact and offset sites.

⁹⁶ Adapted from Table 1 'Biodiversity Offsetting under the Resource Management Act: A Guidance Document'. 2018. Local Government New Zealand.

**APPENDIX 2 – RECOMMENDED PROVISIONS FOR BIODIVERSITY OFFSETTING
POLICY WITHIN REGIONAL POLICY STATEMENTS AND/OR REGIONAL AND
DISTRICT RESOURCE MANAGEMENT PLANS⁹⁷.**

These recommendations specifically relate to biodiversity offsetting under the RMA and within an effects management context. AUP = The Auckland Unitary Plan; CP = The Christchurch Replacement City Plan; OP = Horizons' One Plan

Recommendation	Explanation	Comment
No-net-loss, or preferably net-gain, should be an objective of a biodiversity offset, but not required by a policy because no-net-loss may be achievable for only some aspects of a project	Due to the continued debate and uncertainty about how ecological equivalence is defined, and the difficulty of achieving no-net-loss exchanges across all components of biodiversity type, space, and time, making no-net-loss or net-gain a generic requirement for a project in its entirety in a policy is problematic. Including no-net-loss or net-gain at a project level as a requirement of policy makes it difficult to consider a 'package' of responses including mitigation, offsets, and compensation which is typical of effects management under the RMA. To include no-net-loss or net-gain at the project level as a requirement reduces flexibility and	Wherever a no-net-loss or net-gain objective is sought, the plan should be explicit about: which elements of biodiversity, in comparison to what, and over what time horizon no-net-loss or net-gain is desired for. The AUP decision reflects this recommendation to provide a policy recognising the need for the consideration of offsets but not to require no-net-loss at the project level as a policy because this may in fact be counter-productive as achieving no-net-loss of all elements of biodiversity is unlikely to be achievable.

⁹⁷ Reproduced from Table 2 'Biodiversity Offsetting under the Resource Management Act: A Guidance Document'. 2018. Local Government New Zealand

Recommendation	Explanation	Comment
	<p>means that any proposal that does not achieve this requirement for all elements of biodiversity would be contrary to the policies. This would restrict the ability to get overall better biodiversity outcomes from a consented activity (e.g. by pushing the proposal immediately to environmental compensation because offsetting across the board was unachievable) and potentially encourage ambiguous responses to biodiversity loss.</p>	
<p>The provisions of an offset policy should apply to any indigenous biodiversity</p>	<p>This is an appropriate approach in the context of achieving sustainable management through managing the effects of a consented activity. A hierarchical policy approach is recommended to distinguish between areas of significant indigenous vegetation and significant habitats of indigenous fauna compared to other indigenous biodiversity. In this way policy provisions can distinguish between 'protection' for matters of national importance and 'management' of all other values. In both cases, the effects</p>	<p>The importance of significant vegetation and habitats compared to other vegetation and habitats can be provided for by specifying different levels of vegetation clearance for different activity classifications (permitted, controlled, discretionary and non-complying), recognising that it is only significant effects on other values which are to be addressed, and providing that environmental compensation can be 'considered' rather than 'encouraged' for residual effects on other values when an offset is not available.</p>

Recommendation	Explanation	Comment
	management hierarchy should be captured within the policy.	The provisions within both the AUP and the CP allow for biodiversity offsets in relation to any indigenous biodiversity.
The level of residual effect subject to offset provisions should be informed by the importance of the affected biodiversity	For areas identified as significant for the purposes of section 6(c) RMA, whether or not these areas are listed in the relevant plan, any reasonably measurable residual effects should be subject to the offset provisions. For other biodiversity, the offset provisions should apply to any significant residual effects.	For any biodiversity, the offset provisions should provide only for <i>residual</i> effects after all avenues to avoid, remedy, or mitigate have been exhausted.
Environmental compensation should be provided for as a 'last resort' but should be guided by principles in the same manner as an offset, to the extent practicable	Environmental compensation is the least certain of way to address effects. Accepting environmental compensation is accepting that biodiversity losses will not be accounted for. Therefore, environmental compensation must be clearly defined as the final option in the hierarchy of effects management and only applied to residual effect where it has been demonstrated that an offset as defined by the plan cannot be achieved. While not encouraged (and 'short-cuts' directly to environmental	The offset provisions should recognise that any environmental compensation proposed should generally follow the principles/guidance for an offset.

Recommendation	Explanation	Comment
	<p>compensation should not be allowed), the provisions should nonetheless recognise that, failing all other options, environmental compensation can provide an opportunity for a ‘better than nothing’ outcome. However, ‘short-cuts’ directly to environmental compensation should not be allowed.</p>	
<p>The option to use trading-up offsets should be restricted to non-threatened biodiversity only</p>	<p>‘Trading-up’ involves an out-of-kind exchange of biodiversity, and is only considered an offset where that exchange involves trading non-threatened biodiversity for threatened biodiversity. Out-of-kind exchanges of any other type are not offsets, but environmental compensation. Trading-up offsetting sometimes provides an opportunity to achieve conservation gains considered to be adequate and appropriate to demonstrate equivalence with that lost (in terms of value, if not in terms of type), which can be a greater conservation gain than that provided by a no-net-loss exchange of like-for-like of non-threatened biodiversity in some cases.</p>	<p>The offset design would need to demonstrate how a trading-up offset provides an equivalent exchange of biodiversity.</p> <p>The CP and the OP address trading-up within the design of the offset.</p>

Recommendation	Explanation	Comment
	<p>Determining an adequate and appropriate trading-up offset exchange forms part of the offset design.</p>	
<p>Offset provisions should allow for the consideration of offsets provided in advance where possible, noting that there are no existing mechanisms to recognise or administer offsets provided in advance</p>	<p>An offset provided in advance can be a useful mechanism to secure biodiversity gains as it reduces the level of uncertainty about outcomes.</p> <p>Plans should allow for consideration of offsets provided in advance only when there is a clear link between the offset and the residual effect (that is, the offset can be shown to have been created in anticipation of the specific effect), and there is a defined baseline to demonstrate the biodiversity gains already in place when the offset is considered.</p> <p>Providing an offset in advance forms part of the offset design.</p>	
<p>The plan should provide a framework for the use of biodiversity offsets in support of the offset policies</p>	<p>This would provide the explanations and definitions needed to implement the plan provisions and a high-level generalised framework to guide the design of an offset.</p> <p>Appending the framework to the plan allows for greater clarity, although it is not legally significant whether it sits as an appendix or within the policies themselves.</p>	<p>See Appendix 1 (policy 3).</p>

Recommendation	Explanation	Comment
	<p>More detailed guidance would sit outside the plan (e.g. this document, the <i>Good Practice Guidance</i>, and BBOP).</p>	
<p>An offset policy should not reference the <i>Good Practice Guidance</i></p>	<p>A resource management plan should set out the overarching policy direction and not confuse this policy by requiring consistency with the <i>Good Practice Guidance</i> generally. This is because the <i>Good Practice Guidance</i> provides only for offsets in defined situations and does not allow for circumstances typically encountered within effects management under the RMA (e.g. where a proposal may include a combination of mitigation, offset, and environmental compensation — that is, only some components of the lost biodiversity are offset and not others). The <i>Good Practice Guidance</i> can however, be useful in the design of the offset, and should be referred to in plans in that context.</p>	<p>Both the CP and AUP refer to the <i>Good Practice Guidance</i> being read ‘in conjunction with’ the plan policies, which is unclear in terms of the strength of dependence and which parts of the <i>Good Practice Guidance</i> are or are not relevant to RMA considerations.</p>

APPENDIX 3 - RECOMMENDED WORDING FOR BIODIVERSITY OFFSETTING PROVISIONS IN REGIONAL POLICY STATEMENTS AND/OR REGIONAL AND DISTRICT RESOURCE MANAGEMENT PLANS⁹⁸

This appendix provides recommended wording for biodiversity offsetting provisions for inclusion in regional policy statements and/or regional and district resource management plans. These policies have been set out to reflect that no-net-loss, or preferably net-gain, should be an objective of a biodiversity offset, but not required by a policy because no-net-loss may be achievable for only some aspects of a project. Local authorities may wish to control different activities within their jurisdiction, and this flexibility can be reflected in a variance of rules. However, it is recommended that biodiversity offsetting provisions are consistent at the policy level across the country.

Policy 1 Protection and management of significant indigenous vegetation and significant habitats of indigenous fauna

Recognise and protect areas of significant indigenous vegetation and significant habitats of indigenous fauna by:

- a. avoiding the adverse effects of vegetation clearance and the disturbance of habitats as far as practicable; then
- b. remedying any adverse effects that cannot be avoided; then
- c. mitigating any adverse effects that cannot be remedied; and
- d. where there are any reasonably measurable residual adverse effects on the significant indigenous vegetation and significant habitats of indigenous fauna, encourage the offsetting of those effects in accordance with [the offsetting policy/appendix]; and
- e. if a biodiversity offset in accordance with the [biodiversity policy/appendix] is not able to be reasonably provided, consider environmental compensation that generally follows the principles in [the offsetting policy/appendix] as far as reasonably practicable.

Policy 2 Protection and management of other indigenous vegetation and habitats

Manage the effects of activities on other areas of indigenous vegetation and habitats of indigenous fauna by:

- a. avoiding the significant adverse effects of vegetation clearance and the disturbance of habitats as far as practicable; then
- b. remedying any significant adverse effects that cannot be avoided; then
- c. mitigating any significant adverse effects that cannot be remedied; and
- d. where there are any significant residual adverse effects on the indigenous vegetation and habitats of indigenous fauna, encourage the offsetting of those effects in accordance with [the offsetting policy/appendix]; and

⁹⁸ Reproduced from Appendix 1 'Biodiversity Offsetting under the Resource Management Act: A Guidance Document'. 2018. Local Government New Zealand

- e. if a biodiversity offset in accordance with the [biodiversity policy/appendix] is not able to be reasonably provided, consider environmental compensation that generally follows the principles in [the offsetting policy/appendix] as far as reasonably practicable.

Policy 3 Biodiversity offsetting

The following sets out the framework for the use of biodiversity offsets. While setting out a framework for the use of biodiversity offsets, many of the concepts are also applicable to environmental compensation where positive actions (not including biodiversity offsets) to compensate for residual adverse biodiversity effects arising from activities after all appropriate avoidance, remediation, mitigation and biodiversity offset measures, are proposed.

- a. Restoration, enhancement and protection actions will only be considered a biodiversity offset where they are used to offset the residual effects of activities after the adverse effects have been avoided, remedied or mitigated in accordance with [the relevant policies].
- b. The outcome should be no-net-loss, and preferably a net-gain in the indigenous biodiversity values for which the offset is sought. This may be achieved for some biodiversity values and not others within the same project. The values for which an offset (no-net-loss or net-gain) is achieved must be clearly differentiated from the biodiversity values for which an offset has not been achieved.
- c. Restoration, enhancement and protection actions undertaken as a biodiversity offset are demonstrably additional to what otherwise would occur, including that they are additional to any avoidance, remediation or mitigation undertaken in relation to the adverse effects of the activity.
- d. An offset which is provided (at least in part) in advance of an application for resource consent, does not guarantee granting of consent, but will be taken into account by the Council where:
 - i. There is a clear link between the offset and the future effect. That is, the offset can be shown to have been created or commenced in anticipation of the specific effect and would not have occurred if that effect were not anticipated;
 - ii. A clear baseline of indigenous biodiversity value has been established which can show the biodiversity gains accrued through the offset; and
 - iii. Additional offset actions where an evaluation of the biodiversity gain achieved under the offset provided in advance is shown to be inadequate to achieve at least a no-net-loss of indigenous biodiversity values.
 - iv. The application demonstrates how the requirements of the framework set out in this appendix will be addressed.
- e. Offset actions should be undertaken close to the location of development, unless another location will result in a preferred indigenous biodiversity outcome.
- f. The values to be lost through the activity to which the offset applies are counterbalanced by the proposed offsetting activity, which is at least commensurate with the adverse effects on indigenous biodiversity. A proposed biodiversity offset should contain an explicit loss and gain calculation commensurate to the scale of effects of the activity,

and should demonstrate the way no-net-loss can be achieved for each of the elements of biodiversity for which no-net-loss is desired.

- g. The offset is applied so that the biodiversity values being achieved through the offset are the same or similar to those being lost, unless a 'trading-up offset' will provide a demonstrated net-gain for indigenous biodiversity.
- h. There is a strong likelihood that the positive biodiversity outcomes of the offset last at least as long as the impact of the activity, and preferably in perpetuity. Adaptive management responses will be incorporated into the design of the offset, as required and captured in conditions of consent to ensure that the positive ecological outcomes are maintained over time.
- i. The biodiversity offset will be designed and implemented in a landscape context – i.e. with an understanding of both the impact and offset sites' roles, or potential roles, in the landscape context of the area.
- j. . Any application that intends to utilise an offset must include a biodiversity offset management plan that:
 - i. clearly states the elements of biodiversity for which an offset is being sought;
 - ii. sets out baseline information on indigenous biodiversity that is potentially impacted by the proposal at both the impact and offset sites;
 - iii. demonstrates how the requirements of the framework set out in this appendix will be addressed;
 - iv. details the offset actions that will achieve the estimated gains at the offset site(s); and
 - v. identifies the monitoring approach that will be used to demonstrate how the matters set out in this framework have been addressed, over an appropriate timeframe.

Policy note: Further information on the design of an offset should be obtained from the Local Government guidance document on biodiversity offsetting under the Resource Management Act], New Zealand Government Guidance on Good Practice Biodiversity Offsetting in New Zealand August 2014 (or any successor document), and BBOP.

For the purposes of this policy:

Biodiversity offset

Means a measurable conservation outcome resulting from actions designed to compensate for residual adverse biodiversity effects arising from activities after appropriate avoidance, remediation and mitigation measures have been applied. The goal of a biodiversity offset is to achieve no-net-loss and preferably a net-gain of indigenous biodiversity values.

No-net-loss

Refers to the conceptual objective for achieving a neutral impact on biodiversity and means no measurable loss in the value of the elements of biodiversity for which a no-net-loss

objective is sought compared with the expected biodiversity value of those same elements within a stated time horizon should the offset not have occurred including:

- a. population sizes (taking into account natural fluctuations) and long-term viability of species for which no-net-loss is sought; and
- b. the natural range and distribution inhabited by the species for which no-net-loss is sought; and
- c. the extent and condition of assemblages of species, community types or ecosystems for which no-net-loss is sought

Environmental compensation

Means actions (not including biodiversity offsets) to compensate for residual adverse biodiversity effects arising from activities after all appropriate avoidance, remediation, mitigation and biodiversity offset measures have been applied.

Trading-up offset

Involves an out-of-kind exchange of non-threatened biodiversity for a different type of threatened biodiversity which is of greater conservation value.

Offset provided in advance

Refers to offset actions that have been implemented to generate gains in anticipation of, but prior to, residual effects that will occur as a result of a specific activity planned for the future.

APPENDIX 4 – RECOMMENDED CHANGES TO THE PORPS

Add the following definitions to the Interpretation section of the pORPS.

(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.

(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.

Amend the definition of '**effects management hierarchy**' as follows:

~~has the same meaning as in clause 3.21 of the National Policy Statement for Freshwater Management 2020 (as set out in the box below) and in this RPS also applies to natural wetlands~~

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,
- (b) where adverse effects cannot be avoided, they are minimised where practicable,
- (c) where adverse effects cannot be minimised, they are remedied where practicable,
- (d) where more than minor residual adverse effects cannot be avoided, minimised, or remedied, aquatic offsetting or biodiversity offsetting (whichever is relevant) is provided, and
- (e) 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 adequate regard has been had to the principles in APP3 or APP4, as appropriate.

Replace ECO-P6 with the following:

ECO-P6 – Maintaining indigenous biodiversity

Maintain Otago's indigenous *biodiversity* (excluding the coastal environment and areas protected under ECO-P3) by applying the *effects management hierarchy* (in relation to indigenous biodiversity) in decision-making on applications for *resource consent* and notices of requirement.

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

Replace APP3 with the following:

APP3 – Principles of *biodiversity offsetting*

APP3 sets out the principles for the consideration of the appropriateness of biodiversity offsets.

- 1. Adherence to effects management hierarchy:** An offset is a commitment to redress more than minor residual adverse effects and should be contemplated only after steps to avoid, minimise, and remedy adverse effects are demonstrated to have been sequentially exhausted.
- 2. When offsetting is not appropriate:** Offsets are not appropriate in situations where, in terms of conservation outcomes, the values cannot be offset to achieve a net gain. While each application must be considered on its merits, examples of an offset not being appropriate because a net gain cannot be achieved might include where:
 - (a) residual adverse effects cannot be offset to achieve a net gain because of the irreplaceability or vulnerability of the value affected, and the risk that the proposed offset will not be successfully implemented:
 - (b) the likelihood of achieving net gain is highly uncertain, but potential effects are significantly adverse:
 - (c) there are no technically feasible options by which to secure gains within an acceptable timeframe.
- 3. Net gain:** The biodiversity values to be lost through the activity to which the offset applies are counterbalanced and exceeded by the proposed offsetting activity, so that the result is a net gain when compared to that lost. This is demonstrated where the offset achieves a measurable net gain in indigenous biodiversity, (having regard to type, amount and condition) at the offset site using an explicit loss and gain calculation evaluation.
- 4. Additionality:** An aquatic offset achieves gains in extent or values above and beyond gains that would have occurred in the absence of the offset, such as gains that are additional to any minimisation and remediation undertaken in relation to the adverse effects of the activity.
- 5. Leakage:** Aquatic offset design and implementation avoids displacing harm to other locations (including harm to existing biodiversity at the offset site).

- 6. Landscape context:** An aquatic offset action is undertaken where this will result in the best ecological outcome, preferably close to the impact site or within the same ecological district. The action considers the landscape context of both the impact site and the offset site, taking into account interactions between species, habitats and ecosystems, spatial and hydrological connections, and ecosystem function.
- 7. Long-term outcomes:** An aquatic offset is managed to secure outcomes of the activity that last at least as long as the impacts, and preferably in perpetuity. Consideration must be given to long-term issues around funding, location, management and monitoring.
- 8. Time lags:** The delay between loss of extent or values at the impact site and the gain of extent or values at the offset site is minimised so that the calculated gains are achieved within the consent period consent period or, as appropriate, a longer period (but not more than 35 years).
- 9. Science and mātauranga Māori:** The design and implementation of an aquatic offset is a documented process informed by science and mātauranga Māori, where available.
- 10. Stakeholder participation:** Opportunity for the effective and early participation of stakeholders is demonstrated when planning aquatic offsets, including their evaluation, selection, design, implementation, and monitoring. [Exposure Draft – For Consultation Purposes Only]
- 11. Transparency:** The design and implementation of an aquatic offset, and communication of its results to the public, is undertaken in a transparent and timely manner.
- ~~(1) Biodiversity offsetting is not available if for an activity that will result in Some biodiversity values are not able to be offset, and if they are impacted then they will be permanently lost. These situations include where residual impacts cannot be fully compensated for by a biodiversity offset because of the irreplaceability or vulnerability of the biodiversity affected, and there are no technically feasible or socially acceptable options by which to secure gains within acceptable timeframes. In considering whether a proposed biodiversity offset is appropriate the decision maker shall have regard to such matters as they consider necessary, but shall have regard in particular to:~~
- ~~(a) the loss from an ecological district 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~~
 - ~~(b) 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)~~
 - ~~(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~~
 - ~~(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~~
 - ~~(e) the loss (including cumulative loss) of irreplaceable or vulnerable indigenous biodiversity.~~
- ~~(2) Biodiversity offsetting may be available if the following criteria are met:~~

- ~~(a) the offset addresses more than minor residual adverse effects that remain after implementing the sequential steps required by ECO P6(1) to (3) effects management hierarchy;~~
- ~~(b) the proposal demonstrates that the offset can reasonably achieve 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 commensurate to the scale of effects of the activity. Where this can be achieved for some biodiversity values and not others within the same project the values for which an offset (no net loss or net gain) is achieved must be clearly differentiated from the biodiversity values for which an offset has not been achieved.⁹⁹~~
- ~~(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,~~
- ~~(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 that are demonstrably 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 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*,¹⁰⁰ 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~~

⁹⁹ Taken from the 2018 Guidance page 64. This ensures that there is transparency about those elements which are offsets and those elements which are compensation. It also confirms that there may be a mixed offset and compensation 'package'.

¹⁰⁰ Fully achieving the offset if that is defined as the offset having reached a stable ecological position can in some circumstances take many decades if not centuries. I don't believe that I have seen this criterion in the offset literature. It may be more appropriate to provide that the offset has to be on the right trajectory towards being achieved within the time frame of the consent and can continue on that trajectory without ongoing active management. This would enable a review of conditions and adaptive management to be required if it were shown that the offset was not proceeding as had been anticipated.

~~(3) Biodiversity offsetting proposed in any application for resource consent, plan change or notice of requirement, must address all matters in APP3(2), and Whether, and the extent to which, the proposal for the use of a biodiversity offset:~~

- ~~(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 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.~~

Replace APP4 with the following:

APP4 – Criteria Principles for biodiversity compensation

APP4 sets out the principles for the consideration of the appropriateness of biodiversity compensation. In considering whether a proposed biodiversity compensation is appropriate the decision maker shall have regard to such matters as they consider necessary, but shall have regard in particular to whether, and the extent to which:

[Here insert Appendix 7 from the NPSFM as a starting point and amend as appropriate]

- ~~(1) Biodiversity compensation is not available for an activity that will result in:~~
 - ~~(a) the loss from an ecological district of an indigenous taxon (excluding freshwater fauna and flora) or of any ecosystem type;~~
 - ~~(b) removal or loss of viability of the habitat of a Threatened indigenous species of fauna or flora under the New Zealand Threat Classification System (Townsend et al, 2008);~~
 - ~~(c) 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~~
 - ~~(d) worsening of conservation status of any Threatened or At Risk indigenous biodiversity listed under the New Zealand Threat Classification System (Townsend et al, 2008); or~~
 - ~~(e) the loss (including through cumulative loss) of irreplaceable or vulnerable indigenous biodiversity, and~~
- ~~(2) Biodiversity compensation may be available if the following criteria are met:~~
 - ~~(a) compensation addresses only more than minor residual adverse effects that remain after implementing the sequential steps required by ECO-P6(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;~~

- ~~(ii) within the same ecological district, and~~
- ~~(iii) delivers indigenous biodiversity gains on the ground,~~
- ~~(ba) — where criterion principle (2)(b)(iii) is not met any financial contributions considered must be directly linked to a specific indigenous biodiversity gain or benefit,~~
- ~~(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,~~
- ~~(d) the positive biodiversity outcomes of the compensation are endure at least as long as the impact of the activity and preferably in perpetuity enduring [to make this consistent with the similar offset principle] and are commensurate with the biodiversity values lost,~~
- ~~(e) the time delay between the loss of biodiversity at the impact site and the gain or maturation of the biodiversity outcomes from the compensation is the least necessary to achieve the best possible ecological outcome,~~
- ~~(f) the outcome of the compensation is achieved within the duration of the resource consent,¹⁰¹~~
- ~~(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, and —~~
- ~~(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~~
- ~~(3) Whether, and the extent to which 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 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.~~

¹⁰¹ As per my comment on the same provision for offsetting in APP3.

APPENDIX 5 - POSSUM IN THE HEADLIGHTS: AN AUDIT OF AUSTRALIA'S BIODIVERSITY OFFSETTING CONDITIONS AND SOME LESSONS FOR NEW ZEALAND

1. In 2020, the Australian National Audit Office released a report¹⁰² concluding that the Federal Department of Agriculture, Water and the Environment was under-performing in relation to administration and assessment of approvals of controlled actions (which may require biodiversity offsetting) under the Environment Protection and Biodiversity Conservation Act 1999. Although Australia and New Zealand's policy and legislative settings for biodiversity offsetting and compensation are very different, Gepp et al. (2020)¹⁰³ commented on what they perceived to be lessons from the Australian audit that have relevance to New Zealand. The following comments are in response to the issues raise in this article and how, in my opinion, the pORPS is addressing them.
 1. *Lack of linkage between desired environmental outcomes and determining the acceptability of environmental impact, and consequently no method of determining appropriateness of approval*
 2. I accept that at the local/district/regional level there are (mostly) no targets/desired outcomes. Nor are there targets nationally. However, the pORPS, amended in the manner I suggest, does set out the objectives required by the NPSFM 2020 for effects on wetlands and rivers, and includes effects on terrestrial biodiversity. Principles of offset and compensation application which have been developed by the Environment Court are included.
 2. *Inadequate internal guidance established for the purposes of reviewing offsets and no quality assurance process in place*
 3. In my view, the pORPS in its amended form would provide adequate guidance for the assessment of the adequacy and appropriateness of biodiversity offsets and biodiversity compensation.
 3. *No agreed method for estimating risk of future loss averted by the offset proposal*
 4. APP3 and APP4 do not specifically provide for 'averted loss' offsets. In my view, using averted loss offsets (e.g., legally protecting sites) in itself as a method to achieve gains is not recommended both because of the inherent difficulties in accurately estimating the likelihood of future loss and as sites that would likely be a target for averted offsets would themselves be subject to an offset (thus removal the risk of future loss and the ability to generate gains by its protection).

¹⁰² Referrals, Assessments and Approvals of Controlled Actions under the Environment Protection and Biodiversity Conservation Act 1999. The Auditor-General Auditor-General Report No.47 2019–20. Performance Audit. 25 June 2020.

¹⁰³ Gepp S, Wright M, Maseyk F, Doole M 2020. Possum in the headlights: An audit of Australia's biodiversity offsetting conditions and some lessons for New Zealand. Resource Management Journal August 2020:16–20

4. *Lack of system for mapping offset locations, risking the same area being claimed as an offset site more than once*
5. This is indeed the case in New Zealand, but it is more a question of resourcing rather than policy, and it applies nationwide. Comprehensive spatial information of an appropriate resolution would no doubt be useful to ensure consented offset and compensation actions are only claimed once.
5. *Increased flexibility in application of offset principles and exchange rules to overcome lack of availability of suitable offset sites*
6. The pORPS, like all other regional and district planning instruments with provisions on offsets and compensation, apply a project-by-project approach. The availability and security of areas potential offset and compensation actions is a matter that will need to be assessed by the decision maker on a case-by-case basis.
6. *Lack of integrity in record keeping, monitoring, and enforcing of approvals*
7. This is an issue that is fundamental to the success of offset and compensation efforts across the board. In my opinion, there is no doubt that poor conditions, poor monitoring, and poor enforcement, generally lead to poor outcomes. But this is not a problem which is unique to biodiversity offsetting. In general terms, I accept that the ongoing lack of adequate capability and capacity across councils for compliance monitoring and enforcement is a considerable hinderance to achieving greater ecological outcomes from offsetting and compensation.
7. *Lack of process for verifying satisfactory completion of the condition requirements relating to offsets*
8. As above.