

**BEFORE THE OTAGO REGIONAL COUNCIL**

**AT DUNEDIN  
KI ŌTEPOTI**

**IN THE MATTER** of the Resource Management Act 1991  
**AND**  
**IN THE MATTER** of the proposed Otago Regional Policy Statement  
2021 (excluding those parts determined to be a  
Freshwater Planning Instrument)

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**Evidence of Cassandra Elyse Mealey (Biodiversity Offsetting and Compensation)  
for the Director-General of Conservation Tumuaki Ahurei  
dated 23<sup>rd</sup> November 2022**

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## PART 1 – INTRODUCTION AND GENERAL PROVISIONS

### Summary of key points

1. Overall, I support the inclusion of detailed provisions for the application, design and implementation of biodiversity offsets and compensation and the intent of these provisions to improve the quality of biodiversity offset and compensation proposals that will ultimately assist the protection of the region's biodiversity.
2. My evidence discusses biodiversity offsets and compensation, established offsetting principles, and national and international guidance. I also outline the differences between biodiversity offsets and biodiversity compensation.
3. I have concerns with APP3(1)(a) and (b) (Biodiversity Offsetting criteria) that could result in developers avoiding offsetting and progressing to the more risky and uncertain compensation management measure, which could result in poorer outcomes for biodiversity. In addition, I consider these clauses and APP4(1)(b) (Biodiversity Compensation criteria) would inhibit the use of biodiversity offsets and compensation where it might otherwise be acceptable within certain ecological contexts where there are known ways to create a net gain or gain with confidence.
4. There are several criteria within APP3(1) and APP4(1) that would in my opinion, be more appropriate in a separate bottom line policy as the criteria refer to the activity directly as opposed to the action and outcome of offsets and compensation.
5. I recommend that the order of the effects management hierarchy is switched so that mitigate (or minimise) precedes remedy, as reducing the impact better protects the environment than remediation.
6. I recommend that key terms are defined including biodiversity offsetting, no net loss, net gain, and biodiversity compensation to improve clarity and understanding.
7. I have recommended several amendments and additions to APP3 and APP4 to bring the criteria more in line with current national and international guidance and expand on the intent of ORC to provide reasonable guidance to improve biodiversity offsetting and compensation proposals (Appendices A and B attached to this evidence). I consider these recommendations aid to ensure that biodiversity offsetting and compensation are effective, reflect current knowledge and best practice, and provide for better biodiversity outcomes.

## Introduction

1. My full name is Cassandra Elyse Mealey.
2. I have been asked by the Director-General of Conservation Tumuaki Ahurei (D-G) to provide ecology evidence on the proposed Otago Regional Policy Statement 2021 (pORPS 2021).

## Qualifications and experience

3. I hold the position of Technical Advisor, Ecology with a focus on biodiversity offsets and compensation with the Department of Conservation (hereafter termed the Department) in Hokitika. I have been in this position since November 2019.
4. I hold a Bachelor of Environmental Science with first-class honours from Monash University, Australia (2012) and a Post-graduate Diploma in Endangered Species Recovery from the University of Kent, United Kingdom obtained through the Durrell Wildlife Conservation Trust in Mauritius (2017).
5. My current position is a national role, with a focus on the South Island. I am responsible for providing advice to the Department's decision makers on the use, development, and assessment of biodiversity offsets and compensation for resource consents, council plans, and other statutory processes. In addition, I am responsible for reviewing assessments, conservation strategies, and management and mitigation techniques for fauna species with regard to statutory and permitting processes and conservation programs.
6. Between 2014 and 2017 I was employed as an Environmental Consultant in Melbourne, Australia. In this position, I was responsible for undertaking environmental impact assessments for due diligence purposes, planning permits, and statutory purposes. This involved providing tailored advice regarding the mitigation and management of environmental effects. As part of the role, I would review and prepare environmental management plans for organisations such as developers, construction companies, corporate organisations, and government agencies with a focus on avoiding, remediating, or mitigating impacts to the environment and people.
7. I have been an expert witness to Council hearings on biodiversity offsetting and compensation in relation to the Oceana Gold (New Zealand) Limited resource consents for the Deepdell North Stage III Mine Project. I was an expert witness in an Environment Court hearing for the Te Kuha mine proposal (West Coast). I have provided advice to the Department on biodiversity offsetting and compensation for

the Marlborough Environment Plan (Council), Selwyn proposed District Plan, West Coast Te Tai o Poutini Plan (combined district plan), Waka Kotahi Homer Tunnel improvement works, Waka Kotahi Otaki to North Levin Highway project, and Hamilton Structure Plan Change.

8. I am presenting this evidence for the D-G in relation to the biodiversity offsetting and compensation aspects of the proposed Otago Regional Policy Statement 2021 (pORPS).

### **Code of Conduct**

9. Although it is not strictly required at a Council hearing, I confirm that I have read the code of conduct for expert witnesses as contained in the Environment Court Practice Note 2014. I have complied with the practice and procedures note when preparing my written statement of evidence and will do so when I give oral evidence before the hearing.
10. The data, information, facts, and assumptions I have considered in forming my opinions are set out in my evidence to follow. The reasons for the opinions expressed are also set out in the evidence to follow.
11. Unless I state otherwise, this evidence is within my sphere of expertise and I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

### **Scope of evidence**

12. I have been asked to provide evidence in relation to the pORPS for biodiversity offsetting and biodiversity compensation. Specifically, I address the biodiversity offsetting and compensation criteria outlined in APP3 and APP4, respectively of the pORPS. Throughout this evidence when I refer to biodiversity offsets or biodiversity compensation, I am referring to indigenous biodiversity.
13. My evidence will cover the following:
  - (a) Biodiversity Offsetting
  - (b) Biodiversity Compensation
  - (c) Difference between Biodiversity Offsets and Biodiversity Compensation
  - (d) Principles of Offsetting and Compensation
  - (e) National Policy Statement on Indigenous Biodiversity (exposure Draft – 2022) in relation to the Proposed Otago Regional Policy Statement

- (f) Proposed Otago Regional Policy Statement (2021)
- (g) Conclusion

### **Material Considered**

14. In preparing my evidence I have read the following documents:
- (a) Proposed Otago Regional Policy Statement 2021 (pORPS);
  - (b) Section 42A Hearing Report for the proposed Otago Regional Policy Statement (2021), specifically Chapter 10: ECO-Ecosystems and indigenous biodiversity by Melanie Hardiman dated 4 May 2022 (hereafter s42A report). I note that there has also been supplementary evidence and further technical evidence provided on Chapter 10, but these did not address offsetting or compensation;
  - (c) The Director-General of Conservation's submission on the pORPS, dated 3 September 2021;
  - (d) Other submissions where they are referred to in my evidence.

### **Biodiversity Offsetting**

15. Biodiversity Offsetting is intended to be applied following the implementation of the effects management hierarchy (also known as the 'mitigation hierarchy') which is an international approach to protecting biodiversity from the impacts of development and outlines a specific order of cascading management steps (avoid, minimise, remedy, offset, compensate). Biodiversity offsetting is applied to the residual adverse effects that are unable to be avoided, remedied, or mitigated. Biodiversity offsetting is a process that seeks to neutralise the unavoidable effects of activities on biodiversity at one site by improving the state of biodiversity at another site.
16. The aim of a biodiversity offset is to achieve no net loss (NNL) and preferably a net gain (NG) of biodiversity. This must be reasonably demonstrated at the planning phase through a specific, measurable loss and gain calculation and then be achieved on the ground. Techniques to measure the target biodiversity before and after management must be available to enable an assessment of whether the desired offset outcome (NNL or a NG) has been achieved. There must also be a commitment by the applicant to use them in an offset design.

17. NNL is a term specific to offsetting. NNL occurs when the balance of the measurable biodiversity losses and biodiversity gains (made through targeted management actions) is at least zero. A net gain occurs when the balance of the losses and gains in biodiversity is greater than zero.
18. Several international and national guidance documents have been developed for offsetting and include the Business and Biodiversity Offsets Program (BBOP; BBOP 2012) and Good Practice Biodiversity Offsetting in New Zealand (hereafter NZ Guidance (2014)) and local government guidance (Maseyk et al, 2018). While not statutory documents, they are a useful tool for designing and assessing ecologically sound biodiversity offset policies.
19. The BBOP is an international collaboration that ran for 15 years until 2018 and comprised more than 80 organizations and individuals including companies, government and non-government organizations and financial institutions. Members of the BBOP produced a principle-based standard on biodiversity offsetting to achieve no net loss or a net gain in biodiversity (see paragraph 29, below). The BBOP guidance can be found here: <http://bbop.forest-trends.org/guidelines/Standard.pdf>.
20. The NZ Guidance (2014) was derived from the BBOP standard. Its development was led by the Department in collaboration with several other government agencies. It provides the New Zealand context on biodiversity offsetting and aims to ensure offsetting proposals are ecologically sound and can demonstrate at least a no net loss result. The NZ Guidance can be found here: <https://www.doc.govt.nz/globalassets/documents/our-work/biodiversity-offsets/the-guidance.pdf>
21. The local government guidance (Maseyk et al. 2018), was developed to assist regional councils with their role in biodiversity management under the Act. The document provides a clear direction to councils and resource consent applicants on the appropriate use of biodiversity offsetting under the Act. The local government guidance can be found here: <https://www.lgnz.co.nz/assets/Uploads/7215efb76d/Biodiversity-offsetting-under-the-resource-management-act-full-document-....pdf>
22. It is important to note that offsets are limited in their use where affected biodiversity is vulnerable or irreplaceable or proven methods are not available to replace losses in a like for like manner (BBOP 2012; NZ Guidance; Maseyk et al, 2018).

## Biodiversity Compensation

23. Biodiversity Compensation seeks to provide a positive outcome (gain) for biodiversity that is commensurate to the biodiversity lost. Compensation is the final action in the effects management hierarchy (the last resort), as it carries the most risk with regard to biodiversity outcomes. It is typically undertaken away from the impact site.
24. Compensation can be considered when offsetting has been demonstrated not to be possible or appropriate. Compensation is typically considered when biodiversity values cannot be measured (to enable a loss and gain calculation demonstrating no net loss/net gain), or technical or other constraints provide a limit whereby the affected biodiversity cannot be exchanged on a 'like for like' basis. Where compensation involves 'out of kind' exchanges it is important to transparently recognize that the values, or their amount, not captured in the exchange will result in a permanent loss of biodiversity caused by the project. As there is no accepted method to objectively compare exchanges between different types of biodiversity, compensation methods and gains are typically developed through expert judgement and best estimates. Therefore, there is a level of subjectivity and uncertainty around the ability of the benefits to sufficiently compensate for the losses.
25. Biodiversity outcomes can be improved by applying offset principles as far as possible to compensation proposals. By exchanging similar biodiversity values, quantifying gains where possible, and implementing measurable goals the outcome of the compensation is more likely to be achieved and yield a better result for biodiversity. See paragraphs 27-29 below for more information on offset principles.

## The Difference between Biodiversity Offsetting and Compensation

26. Biodiversity compensation differs from offsetting based on three core principles:
  - (a) Biodiversity Type - Offsets require biodiversity gains to be the same as the biodiversity lost, a 'like for like' exchange. Compensation allows for biodiversity of one type to be exchanged for another type, an 'out of kind' (incomparable) exchange.
  - (b) Quantification - Offsets require the biodiversity being lost and gained to be able to be measured (quantified) and then balanced through a loss and gain calculation to demonstrate a NNL or a net gain outcome. Compensation is used where either gains, losses, and/or management outcomes are not measurable and where a loss and gain calculation cannot be undertaken or other factors limit achieving NNL, e.g. unavailability of offset sites.



- (c) **Biodiversity Outcome – Offsets** aim to achieve NNL or a net gain in biodiversity. They provide greater assurance of an outcome as the design process assesses whether the achievement of NNL is limited by a factor(s) and the output of the quantifiable loss and gain calculation is able to be verified (measured) on the ground in future. Compensation cannot demonstrate NNL or a net gain as its components cannot be measured or compared (out of kind exchange) and balanced in a loss and gain calculation. It carries greater uncertainty around a proposed outcome as it may rely on expert judgement and best estimates to assess whether the gains are commensurate to what will be lost and are able to be delivered within a certain timeframe.

## Principles of Offsetting and Compensation

27. There are ten guiding principles for designing, implementing, and verifying biodiversity offsets described in the NZ Guidance, as derived from the international BBOP standard. The local government guidance also lists offset principles which I consider are in accordance with the BBOP and NZ Guidance.
28. Ratified principles to guide the design of a compensation package are not currently available, however, it is generally accepted that the application of offsetting principles to compensation proposals creates a robust compensation package able to deliver biodiversity gains with greater confidence (Maseyk et al. 2018). I support the use of offsetting principles to guide compensation proposals, where there are no specific principles of compensation available.
29. The ten guiding principles for designing, implementing, and verifying biodiversity offsets as per the BBOP Standard (BBOP 2012), which may also be applied to biodiversity compensation, are described below.
- (a) Adherence to the mitigation hierarchy: A biodiversity offset is a commitment to compensate for significant residual adverse impacts on biodiversity identified after appropriate avoidance, minimisation and on-site rehabilitation measures have been taken according to the mitigation hierarchy.
  - (b) Limits to what can be offset: There are situations where residual impacts cannot be fully compensated for by a biodiversity offset because of the irreplaceability or vulnerability of the biodiversity affected.
  - (c) Landscape context: A biodiversity offset should be designed and implemented in a landscape context to achieve the expected measurable conservation

outcomes taking into account available information on the full range of biological, social and cultural values of biodiversity and supporting an ecosystem approach.

- (d) 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.
- (e) Additional conservation outcomes: A biodiversity offset should achieve conservation outcomes above and beyond results that would have occurred if the offset had not taken place. Offset design and implementation should avoid displacing activities harmful to biodiversity to other locations.
- (f) Stakeholder participation: In areas affected by the project and by the biodiversity offset, the effective participation of stakeholders should be ensured in decision-making about biodiversity offsets, including their evaluation, selection, design, implementation and monitoring.
- (g) 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. Special consideration should be given to respecting both internationally and nationally recognised rights of indigenous peoples and local communities.
- (h) Long-term outcomes: The design and implementation of a biodiversity offset should be based on an adaptive management approach, incorporating monitoring and evaluation, with the objective of securing outcomes that last at least as long as the project's impacts and preferably in perpetuity.
- (i) 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.
- (j) Science and traditional knowledge: The design and implementation of a biodiversity offset should be a documented process informed by sound science, including an appropriate consideration of traditional knowledge.

## **National Policy Statement on Indigenous Biodiversity**

30. An exposure draft of the National Policy Statement on Indigenous Biodiversity (E draft NPSIB), was released in June 2022, seeking submissions which closed on 21

July 2022. The E draft NPSIB sets out a framework of principles for the use of biodiversity offsetting (Appendix 3) and compensation (Appendix 4). I understand the E draft NPSIB has been developed based on previous extensive public consultation, and input from leading ecological practitioners. I also understand that the overall approach has largely been accepted and the Ministry for the Environment has sought feedback from practitioners, iwi/ Māori, stakeholders and those highly familiar with the previous draft NPSIB, to ensure its provisions are workable<sup>1</sup>.

31. I have reviewed the E draft NPSIB Appendices 3 and 4 for biodiversity offsetting and compensation. In my view, these frameworks within the exposure draft reflect good practice and are consistent with international and national guidance (BBOP 2012; NZ Guidance; Maseyk et al 2018). I acknowledge that a working group of the country's leading biodiversity offsetting and compensation experts developed the offsetting and compensation frameworks in the exposure draft. These, in my opinion, build on the existing accepted international principles and improve clarity within the New Zealand context. While it is yet to be gazetted (expected in late 2022) and currently has no statutory effect, I consider the E draft NPSIB biodiversity offsetting and compensation frameworks relevant to consider for the pORPS given they represent the most current and New Zealand tailored frameworks.
32. Given the process through which the E draft NPSIB has been developed and based on my review of Appendices 3 and 4 within my area of expertise, I consider that the Hearing Panel should consider the criteria relevant to the pORPS 2021, and that pORPS 2021 APP3 and APP4 should be consistent with the E draft NPSIB.

## **Proposed Otago Regional Policy Statement**

33. I support the inclusion of specific direction on the use, design and implementation of biodiversity offsetting and compensation in the pORPS. In general, I support the approach taken by the Otago Regional Council (ORC) with the criteria for offsetting and compensation and acknowledge they largely follow good practice.
34. To evaluate the pORPS, I considered several sources including the recommended amended offsetting and compensation criteria in the s42A report (sections 10.29.3 and 10.30.3, respectively), the suggested offsetting and compensation criteria provided in the Department's submission (dated 3 September 2021) and recognised

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<sup>1</sup> Ministry for the Environment Manatū Mō Te Taiao website:  
<https://consult.environment.govt.nz/biodiversity/npsib-exposure-draft/>

international and national guidance (see BBOP 2012; NZ Guidance; Maseyk et al. 2018; E draft NPSIB 2022).

35. Using the recommended amended offsetting and compensation criteria in the s42A report (sections 10.29.3 and 10.30.3, respectively) as a framework, I provide recommended amendments to this in Appendices A and B of this evidence. I attempted to maintain the flow and intent of the policy presented by ORC. In my opinion, the wording and criteria in my appendices are practical, effective and will contribute to a reduction in biodiversity loss through the management of residual adverse effects.

### **Review of APP3 and APP4**

36. I support the use of ‘criteria’ in the title of APP3 and APP4 as it is important that offsetting and compensation proposals adhere to certain standards to ensure they are used appropriately and this has been done successfully in the West Coast RPS.

#### APP3(1) and APP4(1) - Criteria 1 – Availability of Biodiversity Offsets or Compensation (Limits)

37. I support the intent of the offsetting (APP3) and compensation (APP4) limits under criteria (1) to provide Otago specific guidance which builds on the recognised principle that offsets and compensation are not appropriate where indigenous biodiversity is ‘*irreplaceable or vulnerable*’ (BBOP 2012; NZ Guidance; Maseyk et al, 2018; paragraph 29(b)). I agree with ORC that clear, sensible limits are required to ensure offsets and compensation are used appropriately and their integrity is retained<sup>2</sup>.
38. While intended to improve biodiversity offsetting proposals, several criteria under APP3(1), in my opinion, limit the application of an offset beyond best practice and may create a ‘fast track’ pathway to compensation. Compensation carries the highest risk of all effects management methods as the biodiversity outcomes are the least certain (Maseyk et al. 2018; Paragraphs 23 and 26, above). Criteria that overly limit the application of offsets and facilitate skipping ahead to compensation can lead to poorer outcomes for biodiversity. I consider that clauses APP3(1)(a) and (b) facilitate the skipping of offsetting in favour of compensation and could lead to less certain and potentially perverse outcomes for biodiversity. I have therefore recommended their

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<sup>2</sup> S42A Report (October 2022), paragraph 572.

removal. For further discussion on these clauses, see paragraphs 42(a) and (b), below).

39. Criteria (1) in APP3 and APP4 and several subsequent subclauses place absolute limits or bottom lines on the outcome of an activity before an offset or compensation action is undertaken. I agree with ORC that the bottom lines presented in clause (1) are similar to the bottom lines presented in the West Coast RPS.<sup>3</sup> I note that a key difference is that the West Coast RPS provides bottom line clauses in a standalone policy that is applied before effects management measures are considered, as in Policy 7.2, below:

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

- a) 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.*

Given that several clauses under criteria (1) in APP3 and APP4 are imposing a bottom line that does not apply directly to offsets and compensation but rather, the activity itself, I recommend these be relocated to a separate policy, rather than providing for them under specific offsetting and compensation policies. Specifically, I refer to the following clauses:

- (a) APP4(1)(a) and APP3(1)(c) (new (c) as added into my Appendix A) – Limit on the loss of an indigenous taxon or ecosystem type from the ecological district. This refers to the outcome of the activity, rather than the management method. I consider this clause would be more appropriate in a separate bottom lines policy.
- (b) APP3(1)(c) (original (c) as per s42A report) and APP4(1)(d) – Limit for not worsening the conservation status of indigenous biodiversity. I consider this to be a sensible limit and consistent with the pORPS' anticipated environmental

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<sup>3</sup> S42A report (October 2022), paragraph 600

results (particularly ECO-AER1) and conservation goals generally. However, this would be better placed in a separate bottom lines policy, in my opinion.

- (c) APP3(1)(d) and APP4(1)(c) - Limit on the removal or loss of viability of a naturally uncommon ecosystem type. This refers to the outcome of the activity rather than that of biodiversity offsetting or compensation and would therefore, in my opinion, be better suited to a separate bottom lines policy.
40. The generally accepted limits to what can be offset or compensated refer to '*irreplaceable and vulnerable*' biodiversity (BBOP 2012; NZ Guidance; Maseyk et al, 2018), uncertain but potentially significant effects on biodiversity, and technical feasibility of management options (E draft NPSIB). These are relatively broad terms and allow for analysis on a case-by-case basis as determining which impacts on biodiversity are able to be offset is often not simple. While absolute thresholds such as those presented in the s42A report (e.g. APP3(1)(a)(b) and APP4(1)(b)) clearly define a boundary, they can overlook the range of variation associated with ecological systems at differing scales<sup>4</sup>.
41. The limit in the s42A report regarding '*the loss (including cumulative loss) of irreplaceable or vulnerable indigenous biodiversity*' (APP3(1)(e) and APP4(1)(e)) utilises the former principle ('*irreplaceable or vulnerable*') which is described in the BBOP, NZ guidance and E draft NPSIB (BBOP 2012; NZ Guidance; Maseyk et al. 2018; E draft NPSIB). In my opinion, this criterion enables an assessment of the value of biodiversity on a case-by-case basis and within the cultural, ecological, local, and national contexts. It also provides flexibility to incorporate local nuances and allows for a more tailored offset design. I support the incorporation of this limit. I have also recommended additional limits be placed within criteria (1) that relate to the above generally accepted limits for biodiversity offsets and compensation (see paragraph 43, below).
42. The considerations above are reflected in the recommendations for Criteria (1) (APP3 and APP4) in Appendix A and B attached to this evidence. My recommended changes to the clauses are discussed below:
- (a) APP3(1)(a) and APP4(1)(b) - I recommend removing these criteria as I consider that the loss of Threatened individuals (APP3) or habitat of a Threatened species (APP4) could be acceptable if the ecological context is acceptable and there are known ways to create a net gain with confidence.

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<sup>4</sup> Business and Biodiversity Offsets Programme (BBOP). 2012. Resource Paper: Limits to What Can Be Offset. BBOP, Washington, D.C. Available from: <http://bbop.forest-trends.org/guidelines/Standard.pdf>

- I. For example, a proposal to develop an urban, degraded wetland may impact two individuals of a Threatened sedge. The sedge is known to propagate easily and thrive once transplanted with the addition of weeding for 2 years post planting. The removal of the two individuals from the degraded wetland could be feasibly balanced with the propagation and planting (and weeding) of more than two individuals at a protected offset site.
  - II. An example in relation to APP4(1)(b) (compensation) might include a proposal to widen a road that will remove a 1m<sup>2</sup> area of rocky habitat for a Threatened lizard species along the roadside. This species is known to colonise man-made rock stacks at other sites. The removal of this 1m<sup>2</sup> area of habitat could be considered acceptable where compensation proposes to construct a larger rock stack adjacent to an existing population within a protected area.
  - III. As APP3(1)(a) and APP4(1)(b) currently read in the s42A report, exchanges such as those in the above examples are prohibited. Further, APP3(1)(a) would require developers encountering individuals of a threatened taxa to skip offsetting for the more uncertain management method of compensation, resulting in poorer outcomes.
- (b) APP3 (1)(b) refers to avoiding ‘measurable loss’ of an At Risk-Declining taxon.
- I. It is unclear how ‘measurable loss’ would be defined and without a definition, this could result in inconsistent outcomes. I have observed ambiguity around the similar West Coast RPS policy that refers to a ‘*reasonably measurable reduction*’ of Threatened taxa (WCRPS Policy 7.2). I agree with the submission from Dunedin City Council that requests a definition for this term<sup>5</sup>.
  - II. Nevertheless, I consider this clause is unnecessarily restrictive as it indicates offsetting is not available to At-Risk – Declining taxa. There may be situations where it would be acceptable to lose some individuals of a locally widespread At-Risk species. If an At-Risk species is to be offset, a like-for-like gain is required which would result in additional individuals being created or protected elsewhere within the ecological district. I would consider this an appropriate exchange should the ecological context

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<sup>5</sup> S42A Report (October 2022), paragraph 562.

suggest it is appropriate. Further, APP3(1)(b) appears to require development proposals which will create a measurable loss to an At-Risk – Declining taxa to avoid offsetting and progress to the more uncertain, easier to implement management method of compensation, leading to poorer biodiversity outcomes.

III. Due to the complex interactions between species and their environment, providing a blanket clause specific to one conservation category which is assessed at a national level, is in my opinion, overly limiting and does not account for differences in local environmental contexts. Instead, I recommend that managing effects on At-Risk taxa be assessed on a case-by-case basis that considers the local context and focuses on the ability to create gains. I consider that clause APP3(1)(e), which refers to no loss of *'irreplaceable or vulnerable indigenous biodiversity'*, along with other limits which I have added in my Appendix A (see paragraph 43, below) is sufficient to capture At-Risk – Declining species which may be particularly vulnerable, or cannot be feasibly replaced, within the ecological district and local context.

IV. I note that offsets only apply to biodiversity that can be measured. Perhaps the intent of this clause is to point out that offsets need to be measurable. I would support this intent, however, in my opinion, this is not clear. Further, in my opinion, this intent is captured in clause APP3(3)(a), which is another reason why I have recommended that clause APP3 (1)(b) be removed.

43. Additional limits to offsetting and compensation (see (g) to (h), below) were proposed in the D-G's submission (3 September 2021) and were not adopted by the s42A report recommendation. I did not locate commentary on the reasons for their omission. I support these additions, with minor modifications to improve clarity, for the reasons outlined below. These recommended additions are presented in Criteria (1) in Appendix A and B attached to this evidence and below for ease of reference. (Where the criterion applies to both an offset and compensation below, I use 'offset/compensation').

*(d) there are no technically feasible or socially acceptable options by which to secure gains within acceptable timeframes; or*

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



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

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

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

- (a) With regard to (d), considering the technical feasibility or social acceptability of the offset or compensation actions is crucial to understand the practicality of managing residual adverse effects and evaluating the likely success of the proposed outcome.
- (b) For point (e), being aware of what is known and unknown about an effect on biodiversity is key to reduce the risk of effects being missed, resulting in permanent losses or unmanaged adverse effects on biodiversity.
- (c) Point (f) refers to offsets that may contradict the anticipated environmental results of the ECO chapter within the pORPS. I support the anticipated environmental results (presented below for ease of reference) and consider that including reference to these in the limits to offsetting/compensation will assist to ensure these results are achieved.

*ECO–AER1 There is no further decline in the quality, quantity or diversity of Otago’s indigenous biodiversity.*

*ECO–AER2 The quality, quantity and diversity of indigenous biodiversity within Otago improves over the life of this Regional Policy Statement.*

*ECO–AER3 Kāi Tahu are involved in the management of indigenous biodiversity and able to effectively exercise their kaitiakitaka.*

*ECO–AER4 Within significant natural areas, the area of land vegetated by wilding conifers is reduced.*

- (d) Point (g) seeks that it is demonstrated that the intended management action is likely to produce the predicted offset or compensation outcome. I acknowledge that a loss and gain calculation is used to demonstrate no net loss or a net gain outcome in an offset (APP3(2)(b)). However, this is reliant on the proposed management methods being able to deliver the predicted biodiversity gain/s. In order to have confidence in the proposal, there must be a reasonable degree of confidence that the biodiversity value will respond

positively to the proposed management method. This may be demonstrated through scientific testing, literature, research, understanding of the species biology or ecology etc. In my opinion, this criteria works to reduce biodiversity loss through unsuccessful offset or compensation programmes by setting the programmes up to succeed.

- (e) Point (h) refers to 'leakage' where the design of the offset should not lead to (leak) unintended harmful effects on biodiversity in other locations. For example, it is important to evaluate whether fencing to remove ungulate browse on an area, whilst providing benefit to the fenced site, increases browse pressure on indigenous biodiversity adjacent the site. This displaces harm from one site to another and does not result in a net biodiversity gain as the overall amount of damage remains the same.
- (f) I note that points (d), (e), and (h) are consistent with the international and national guidance, including the E draft NPSIB. If including points (f) and (h) as a limit to offsetting or compensation under criteria 1 does not align with the approach taken by the pORPS, I suggest the intent of this point could be added as a subclause to APP3(2)(c) and APP4(2)(b).

44. Overall, I consider there are enough safeguards within APP3 and APP4 as recommended in Appendices A and B attached to this evidence, to ensure these methods are employed appropriately and in accordance with best practice. I suggest that several limits proposed by ORC that do not directly relate to offsetting and compensation proposals or outcomes could be removed and placed in separate bottom-line policy which relates to the activity. Further, I recommend that limits that may prohibit the use of a biodiversity offset where methods exist to produce a net gain be removed to prevent applicants skipping ahead to the more uncertain management method of compensation.

#### APP3(2) and APP4(2) - Criteria 2 – Design and Implementation Criteria

45. I support several changes made to this criterion in APP3 and APP4 within the s42A report. I have also made several recommendations to improve alignment with best practice. I discuss these below:
- (a) APP3(2)(a) and APP4(2)(a) – Addressing residual adverse effects - I agree with ORC that there are no practical reasons why offsets and compensation cannot be applied to all residual adverse effects and therefore, support the use of the phrase 'residual adverse effects', rather than 'significant residual

adverse effects' in the clauses within of APP3 and APP4. This phrasing is also consistent with the West Coast RPS.

- (b) APP3(2)(b) – No net loss criterion – the addition of the phrase *'demonstrates that the offset can reasonably achieve no net loss and preferably a net gain'* serves to acknowledge that an offset is typically used as a predictive tool at the consenting stage, and therefore it must be demonstrated that the outcomes are reasonably likely to be achieved. I support the inclusion of this new wording as demonstrating a 'no net loss or net gain outcome is reasonably likely' through a loss and gain calculation consistent with national and international guidance (BBOP, NZ Guidance, Maseyk et al 2018; E draft NPSIB). Further, I recommend in Appendix A below, that this is altered slightly so that an offset demonstrates a net gain, rather than no net loss and the word 'quantitative' is inserted prior to 'loss and gain calculation'. A net gain outcome provides a better outcome for biodiversity and accounts for unpredicted environmental variation and for potential minor uncertainty or error within the design and implementation phases. Adding 'quantitative' in reference to the loss and gain calculation adds further guidance to ensure robust offset proposals. Demonstrating a net gain outcome with a quantitative loss and gain calculation is also consistent with the E draft NPSIB.
- (c) APP4 (2)(ba) – Financial contributions criterion – I support the inclusion of this criterion as it is important to ensure any financial compensation is directly linked to a gain/s in biodiversity in order to appropriately compensate for losses to biodiversity. This criterion also accords with the E draft NPSIB.
- (d) APP4(2)(d) – Long term outcomes and scale of compensation criterion - I support this clause and recommend altering the wording slightly to reflect the updated wording in the E draft NPSIB. This would include changing the phrase that regards compensation outcomes are *'commensurate with the biodiversity values lost'* to *'are enough to outweigh the adverse effects on indigenous biodiversity'*. I consider this more appropriate as it is more explicit than 'commensurate' in terms of the intended outcome, and broad enough to consider the type, extent and significance of the biodiversity values lost and gained.
- (e) APP3 (2)(f) and APP4 (2)(c) – Additionality criterion – The replacement of *'beyond results'* with *'that are clearly additional to those'* (APP3 only) and insertion of *'and are additional to any remediation or mitigation or offset (APP4 only) undertaken in relation to the adverse effects of the activity'* in my

opinion, more clearly indicate that biodiversity outcomes from offsetting or compensation are to be over and above outcomes offered through other effects management process such as mitigation and remediation. This phrasing is also in line with the E draft NPSIB.

- (f) APP4(2)(fa) – Trading-up criterion – I consider this relevant as it is acknowledged in national guidance documents (NZ Guidance, Maseyk et al. 2018) and the E draft NPSIB in relation to compensation. The s42A report suggests that restricting trading-up to species that are not Threatened, At Risk or Data Deficient may not be workable. They provide the example that, it may be acceptable to lose some individuals of a locally widespread At-Risk species (e.g. matagouri) for a gain in a more Threatened species<sup>6</sup> (trade-up). I acknowledge this point and in my opinion, the trading of biodiversity should be assessed on a case-by-case basis and considering the ecological context. However, on a cautionary note, I consider that Threatened species should not be lost in a trade-up approach and one Threatened species should not be traded for another Threatened species. Threatened species are at a critical decline trajectory on a national scale and adverse effects on them should either be offset (exchanged like-for-like where demonstrably possible with high confidence) or avoided.
- I. I note that the wording in the s42A report appears to misrepresent the intent around the phrase ‘irreplaceable or vulnerable’. I suggest that the criterion is amended to read:
- “(fa) when trading up forms part of biodiversity compensation, the proposal must demonstrate the indigenous biodiversity values gained are demonstrably of higher indigenous biodiversity value than those lost, and the values lost are not considered vulnerable or irreplaceable,”*  
(suggestion underlined)
- (g) APP3(2)(g) – Time delay criterion – The replacement of the phrase ‘realisation of the offset’ with ‘gain or maturation of the biodiversity outcomes of the offset’, in my opinion, better expresses that the time delay relates to biodiversity outcomes. This phrasing also aligns the E draft NPSIB.

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<sup>6</sup> S42A Report (October 2022), paragraph 598.

APP3(3) and APP4(3) - Criteria 3 – Additional guidance

46. I acknowledge that the additional criteria accepted by ORC following submissions, particularly those under criteria (3) in both APP3 and APP4, aid to improve biodiversity offset and compensation proposals. I discuss these additions and make several recommendations to aid clarity and strengthen the intension, below:
- (a) APP3(3)(a) - I support the intent to quantify losses and gains in an offset. This is consistent with the national and international guidance (BBOP, NZ Guidance, Maseyk et al 2018, E draft NPSIB). I recommend slightly different wording to provide greater clarity while maintaining the intent, as illustrated below and in Appendix A:
- 'Describe and measure biodiversity at the impact and offset sites using metrics that allow for biodiversity losses and gains to be quantified and balanced'*
- (b) APP3(3)(b) – This specifies that all high value species and vegetation types are included in an offset. I consider the intent is to ensure transparency when balancing an offset's losses and gains. In my opinion, this is captured in the following criteria (APP3(3)(c)) and I therefore recommend APP3(3)(b) be removed for clarity.
- (c) APP3(3)(c) - I recommend altering the wording slightly as the word 'components' has a specific meaning in reference to a biodiversity offset accounting model and this might be read as too prescriptive. I support the intent of this criterion to ensure high value or important biodiversity (in the context of the proposal) is not aggregated (lumped together) with other biodiversity and consequently overlooked in an exchange (concealed loss). I support the inclusion of a definition of high value species and vegetation types<sup>7</sup>. I suggest alternate wording for this criterion to ensure trades are transparent and biodiversity that does not meet the definition of 'high value' as per the s42A report, yet is still important in the context of the development, is clearly included in the offset. The suggested wording is illustrated below and in Appendix A:
- 'Use a disaggregated accounting system for important and high value species and vegetation types to ensure they are transparently accounted for'*

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<sup>7</sup> S42A Report (October 2022), paragraph 571.

- (d) APP3(3)(d), (e), (f) and APP4 (3)(a), (b), and (c) - this seeks that the wider ecological context and mātauranga Māori are considered and a separate offsetting or compensation management plan is produced.
- I. I support these additions as they are consistent with the landscape context, traditional knowledge, and transparency principles described in the international and national guidance (BBOP 2012; NZ guidance; E draft NPSIB; paragraph 29, above).
  - II. In my opinion, the ecological context in which a biodiversity offset or compensation proposal is evaluated should be consistent with criteria listed in Appendix 1 of the E draft NPSIB.
  - III. I have recommended the inclusion of a phrase seeking that '*detail regarding the transparent communication of the results to the public which is proportionate to the activity and its effects*' is included in the separate biodiversity offset/compensation management plan criterion (APP3(3)(f); APP4(3)(e)). I consider this aids to meet the 'transparency' principle in the international and national guidance and is scalable to the project and its effects. I note that for small activities such as an on-farm development, proportionate communication of results may consist of reporting back to Council when the offset or compensation outcome has been achieved.
- (e) I recommend the inclusion of several additional criteria to better capture the intent of Criteria 3 and incorporate principles from the international and national guidance (BBOP 2012; NZ guidance; E draft NPSIB; paragraph 29, above), in my appendices A and B. Specifically, these criterion attend to the principles of stakeholder participation (Appendix A: APP3(3)(e); Appendix B: APP4(d)) and use of science (Appendix B: APP4(c)). I consider that APP3(3)(a) constitutes the use of science and so have not included a separate criterion, however, I would support the inclusion of it should it be considered necessary. In my opinion, these additional criteria provide greater guidance which may result in more appropriate offset and compensation proposals.

## Definitions

47. I support the inclusion of a definition for the 'effects management hierarchy' in ECO-P6, however, I would recommend altering the order so that it better protects biodiversity, in my opinion. I suggest that the order of the effects management

hierarchy should be first avoid, then minimise (or mitigate), then remedy. In my view, reducing the impact on biodiversity (minimise or mitigate) provides better protection for the environment than attempting to remediate (remedy) what has been lost. This is because, it is not always possible or straightforward to return the environment to the same condition following a disturbance. Therefore, I seek that the order of remedy and mitigate be switched so that mitigate is applied before remedy.

48. While comprehensive criteria have been put forward for offsetting and compensation, neither method has been provided with a definition. I recommend the plan provide definitions for a biodiversity offset, no net loss, net gain, and biodiversity compensation to improve clarity and understanding around these residual effects management measures. I support Queenstown Lakes District Council's (QLDC) amendment to define biodiversity offsetting to align with the draft NPSIB<sup>8</sup>, however, suggest that this definition now follow the more recent E draft NPSIB (see proposed definition below).
49. Based on current international and national guidance, and the general policy direction of ORC, I propose the following definitions:

Biodiversity Offset means a measurable conservation outcome that complies with the criteria in APP3 and results from actions that:

- (a) redress any residual adverse effects on indigenous biodiversity after all appropriate avoidance, minimisation, and remediation measures have been sequentially applied; and
- (b) achieve a measurable net gain in type, amount, and condition (structure and quality) of indigenous biodiversity compared to that lost

No-net-loss (NNL) and net gain (NG): The biodiversity values to be lost through the activity to which the offset applies are counterbalanced by the proposed offsetting activity, so that the result is no overall reduction in biodiversity compared to that lost. No net loss is demonstrated by a like-for-like quantitative loss and gain calculation of the type, amount, and condition of the biodiversity value. No net loss is achieved when the ecological values at the offset site are equal to those being lost at the impact site.

Net gain (NG): 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.

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<sup>8</sup> s42A Report (October 2022), Section 10.3.1.1

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

Biodiversity compensation means a conservation outcome that complies with the criteria in APP4 and results from actions that are intended to compensate for any residual adverse effects on indigenous biodiversity after all appropriate avoidance, minimisation, remediation, and biodiversity offset measures have been sequentially applied.

## Conclusions

50. I support the inclusion of biodiversity offset and compensation provisions in the pORPS. The majority of the provisions are in accordance with best practice, however, I recommend minor wording changes, the removal of some clauses, re-location of several clauses into a separate bottom lines policy, and additional clauses to improve the application of these tools (see Appendices A and B attached to this evidence). I recommend switching the order of the effects management hierarchy so that mitigate (or minimise) precedes remedy. I also recommend defining key biodiversity offset, no net loss, get gain, and biodiversity compensation. In my opinion, these changes and additions improve clarity around the application, design, and implementation of these tools and ultimately, should result in higher quality biodiversity offset and biodiversity compensation proposals.



Cassie Mealey

DATED this 23<sup>rd</sup> day of November 2022.



## References

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## **Appendix A**

See separate document attached.

## **Appendix B**

See separate document attached.