

## JOINT WITNESS STATEMENT – ECOLOGISTS

31 March 2023

1. This joint witness statement (**JWS**) is the outcome of conferencing between the ecological experts involved in the proposed Otago Regional Policy Statement 2021 on Appendix 2.
2. The Ecologists in attendance are [TBC]:
  - (a) Kelvin Lloyd for ORC;
  - (b) Vaughan Keesing for Contact Energy and Manawa Energy;
  - (c) Bruce McKinlay for Department of Conservation;
  - (d) Hendrik Schultz for Department of Conservation;
  - (e) Marine Richarson for Department of Conservation;
  - (f) Mike Thorsen for Oceana Gold Ltd; and
  - (g) Scott Hooson for Oceana Gold Ltd;
  - (h) Graham Parker for City Forests; and
  - (i) Zoe Lunniss for Dunedin City Council.
3. Hilke Giles for Sanford was available via video link to provide input on whether the criteria were suitable for use in the coastal environment.
4. The JWS has been prepared in accordance with Minute 9, “*Directions for expert caucusing regarding Appendix 2*” and Section 9.5 of the Environment Court Practice Note 2023. In addition, the ecologists have read, and agree to abide with, the code of conduct for expert witnesses in Section 9 of the practice note.

5. The agenda for the caucusing is as follows:

(a) Review Appendix 2 and in Table 1 below record:

- Areas of agreement, including any agreed changes; and
- Where there are areas of disagreement, record succinct individual reasons for their position with reference to the relevant parts of their evidence.

(b) Review Appendix 2 against the equivalent Draft NPSIB criteria in Table 2 below and record:

- Differences in the criteria, including whether each criterion is more or less stringent.

[Note that (b) was not directed by the Panel, however, as a number of parties sought to align with the draft NPSIB, ORC considers that this would be useful for the Panel if there is sufficient time to complete it during the time available.]

### General matters

1. Policy and Objective Framework: some of the experts identify challenges in discussing the criteria without the context of the overarching policy framework.
  - a. Agree: MT, BM, HS, HG, GP,
  - b. Disagree: ZL, MR, KL, VK, SH
2. Some of the criteria do not have a strong empirical science basis.
  - a. Agree: VK, MT, SH, GP, HG
  - b. Disagree: KL, MR, BM
  - c. No View: HS, ZL
3. The first four criteria – representativeness; rarity and distinctiveness; diversity and pattern; ecological context, have been around for a long time and are well tested, and are generally considered good practice (with respect to terrestrial as opposed to marine and freshwater).

- a. Agree: BM, KL, MT, MR, ZL, VK, HS, GP, SH,
  - b. No view: HG,
4. The implications of implementing the criteria have not been analysed as part of the section 32 or section 42A reports.
- a. Agree: MT, GP, VK, HG, SH
  - b. Disagree:
  - c. Not considered relevant: KL, BM, ZL,
  - d. No view: HS, MR
5. A guidance document for interpretation would be essential, including, but not limited to:
- a. developing an appropriate version of Appendix 1 covering the matters in section 1-3 of the exposure draft of the NPSIB. – all agree.
  - b. Promoting integrated application across terrestrial, freshwater, intertidal, and marine domains – all agree
  - c. Needs to deal with highly mobile threatened species. all agree.
  - d. There may be some local exceptions to At Risk species triggering rarity such as matagouri. - all agree.
  - e. What the term 'important' means where it is used in the criteria. - all agree.
  - f. In terms of Rarity (d)(ii) – guidance needs to be provided on the appropriate scale at which the assessment should be undertaken and the appropriate tools to be used for the relevant scale. - all agree.
6. For some of the criteria there is limited information or data on which to base evaluations. When this appendix is being implemented, expert judgment is required. – all agree.
7. Some consideration was given to the NPSIB and NZCPS. We note in particular the representativeness (a) criterion in the exposure draft NPSIB does not have a pre-human baseline and that is problematic. We note that some Appendix 2 criteria of the RPS are broader than NZCPS Policy 11 (a) and (b).

Note: for the table below, no initials means that expert has no view on that matter



**TABLE 1**

<b>pORPS text</b>	<b>Areas of agreement, including any changes</b>	<b>Alternative versions, and why</b>
An area is considered to be a <i>significant natural area</i> if it meets any one or more of the criteria below:	Retain because this wording is consistent with the NPSIB and other criteria in plans around New Zealand.  BM, ZL, HS, KL, MR	An area is considered to be a <i>significant natural area</i> if it meets <del>any one</del> <b>the threshold for the rarity criterion or two</b> or more of the <b>other</b> criteria below: - VK, MT  The following would like to acknowledge that meeting only one of the criteria is a low threshold for significance – SH, HG, GP, MR

<p><b>Representativeness</b></p> <p>(a) An area that is an example of an indigenous vegetation type or habitat that is typical or characteristic of the original natural diversity of the relevant ecological district<sup>1</sup> or coastal marine biogeographic region. This may include <del>degraded</del> <del>degraded</del><sup>2</sup> examples of their type or represent all that remains of indigenous vegetation and habitats of indigenous fauna in some areas.</p> <p>(b) An indigenous marine ecosystem (including both intertidal and sub-tidal habitats, and including both faunal and floral assemblages) that makes up part of at least 10% of the natural extent of each of Otago's original marine ecosystem types and reflecting the environmental gradients of the region.<sup>3</sup></p> <p>(c) An indigenous marine ecosystem, or habitat of indigenous marine fauna (including both intertidal and sub-tidal habitats, and including both faunal and floral components), that is characteristic or typical of the natural marine ecosystem diversity of Otago.</p>	<p>(a) An area that is an example of an indigenous vegetation type or habitat that is typical or characteristic of the original pre-human natural diversity of the relevant ecological district or coastal marine biogeographic region. <del>This may include degraded degraded examples of their type or represent all that remains of indigenous vegetation and habitats of indigenous fauna in some areas.</del> <b>This can include degraded examples where they are some of the best remaining examples of their type.</b> All agree</p> <p><del>(b) An indigenous marine ecosystem (including both intertidal and sub-tidal habitats, and including both faunal and floral assemblages) that makes up part of at least 10% of the natural extent of each of Otago's original marine ecosystem types and reflecting the environmental gradients of the region.</del></p> <p>(c) An indigenous marine ecosystem, or habitat of indigenous marine fauna (including both intertidal and sub-tidal habitats, and including both faunal and floral components), that is characteristic or typical of the natural marine ecosystem diversity of Otago.</p> <p>All Agree</p>	<p>Reasoning:</p> <p>(a) "Pre-human" is more specific than "original" which could apply to many historic timeframes, this sets a clear baseline for the assessment. As worded referring generally to degraded examples would have captured too much. The wording "all that remains" is a consideration under the rarity criterion.</p> <p>(b) Deleted because impractical and immeasurable – not formulated in a way that could be evaluated sensibly.</p> <p>All Agree</p>
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pORPS text	Areas of agreement, including any changes	Alternative versions, and why
<p><b>Rarity</b></p> <p>(d) An area that supports:</p> <p>(i) An indigenous species that is threatened, <u>or uncommon, or an important population of species that is</u><sup>4</sup> <del>at risk risk,</del><sup>5</sup> <del>or uncommon,</del> nationally or within an ecological district<sup>6</sup> or coastal marine biogeographic region, or</p> <p>(ii) Indigenous vegetation or habitat of indigenous fauna that has been reduced to less than 20% of its former extent nationally, regionally or within a relevant <i>land environment</i>, ecological district,<sup>7</sup> coastal marine biogeographic region or <i>freshwater environment</i> including <i>wetlands</i>, or</p> <p>(iii) Indigenous vegetation and habitats within originally rare ecosystems,<sup>7</sup> <del>or</del></p> <p>(iv) <del>The site contains indigenous</del></p>	<p>(d) An area that supports:</p> <p>(i) An indigenous species that is <u>Threatened*</u>, <u>or uncommon,</u> or an important population of species that is <u>At risk Risk,</u> or <u>uncommon,</u> nationally or within an ecological district or coastal marine biogeographic region, or</p> <p>– all agree</p> <p>(ii) Indigenous vegetation or habitat of indigenous fauna that has been reduced to less than 20% of its <u>former pre-human</u> extent nationally, regionally or within a relevant <i>land environment</i>, ecological district, coastal marine biogeographic region or <i>freshwater environment</i> including <i>wetlands</i>, or</p> <p>(iii) Indigenous vegetation and habitats within originally rare ecosystems** - all agree,<sup>7</sup> <del>or</del></p> <p>(iv) <del>The site contains indigenous vegetation or an indigenous species that is endemic to Otago</del></p>	<p>(ii) –satisfied with the wording as drafted, except agree to change from ‘former’ to ‘pre-human’ as per wording in middle column. KL, HS, GP, SH</p> <p>(ii) - Indigenous vegetation <u>type</u> or habitat of indigenous fauna that has been reduced to less than 20% of its <u>pre-human extent nationally,</u> regionally or <u>within a relevant land environment,</u> ecological district, coastal marine biogeographic region or <i>freshwater environment</i> including <i>wetlands</i> – VK, BM, MT</p> <p>Reason: there should be a regional focus not a national one.</p> <p>(ii) - Indigenous vegetation or habitat of indigenous fauna that has been reduced to less than 20% of its <u>pre-human extent within biogeographic regions nationally,</u> regionally or <u>within a relevant land environment,</u> ecological district, coastal marine biogeographic region or <u>freshwater environment including wetlands</u>—MR</p> <p>Reason: there should be a national or ecologically relevant focus.</p> <p>Clause d (iii) no opinion – MR, GP</p>

<sup>1</sup> McEwen, W Medium (ed), 1987. Ecological regions and districts of New Zealand. Wellington: Department of Conservation (new footnote attributed to 00138.027 QLDC)

<sup>2</sup> 00137.008 DOC

<sup>3</sup> 00306.081 Meridian

<sup>4</sup> 00318.020 Contact, 00122.032 Sanford, 00221.018 Silver Fern Farms, 00313.033 Queenstown Airport, 00019.005 Straterra, 00320.020 Network Waitaki, 00511.023 PowerNet

<sup>5</sup> Clause 16(2), Schedule 1, RMA

<sup>6</sup> McEwen, W Medium (ed), 1987. Ecological regions and districts of New Zealand. Wellington: Department of Conservation (new footnote attributed to 00138.027 QLDC)

<sup>7</sup> McEwen, W Medium (ed), 1987. Ecological regions and districts of New Zealand. Wellington: Department of Conservation (new footnote attributed to 00138.027 QLDC)

pORPS text	Areas of agreement, including any changes	Alternative versions, and why
<p>vegetation or an indigenous species that is endemic to Otago or that are at distributional limits within Otago.<sup>8</sup></p>	<p>or that are at distributional limits within Otago.<sup>9</sup>—all agree</p> <p>*add footnote – as defined in the NZTCS</p> <p>**as defined in Williams et al 2007.</p>	
<p><b>Diversity</b></p> <p>(e) An area that supports a high diversity of indigenous ecosystem types, indigenous <i>taxa</i> or has changes in species composition reflecting the existence of diverse natural features or gradients.</p>	<p>(d) An area that supports a high diversity of indigenous ecosystem types, <u>or indigenous <i>taxa</i> in the context of similar areas and similar ecosystem types</u> or has changes in species composition reflecting the existence of diverse natural features <u>or gradients</u>. KL, HS, MR, MT, BM</p> <p>Reason: “gradients” was redundant.</p>	<p>An area that supports a high diversity of indigenous ecosystem types, <u>or indigenous <i>taxa</i> in the context of similar areas and similar ecosystem types</u> or has changes in species composition reflecting the existence of diverse natural features or gradients. – SH, ZL</p> <p>Reason: important to keep reference to “gradients”.</p> <p>An area that supports a high diversity of indigenous ecosystem types, <u>or indigenous <i>taxa</i> in the context of similar areas and similar ecosystem types including ecosystems that have</u> changes in species composition reflecting the existence of diverse natural features or gradients. – HG</p> <p>Reason: the last part of the criterion should also reflect high diversity.</p> <p>Delete (e) – VK</p> <p>Reason: redundant criterion.</p>

<sup>8</sup> 00230.147 Royal Forest and Bird Protection Society of New Zealand Incorporated

<sup>9</sup> 00230.147 Royal Forest and Bird Protection Society of New Zealand Incorporated

pORPS text	Areas of agreement, including any changes	Alternative versions, and why
<p><b>Distinctiveness</b></p> <p>(f) An area that supports or provides habitat for:</p> <p>(i) Indigenous species at their distributional limit within Otago or nationally, or</p> <p>(ii) Indigenous species that are endemic to the Otago region, or</p> <p>(iii) Indigenous vegetation or an association of indigenous species that is distinctive, of restricted occurrence, or has developed as a result of an unusual environmental factor or combinations of factors.</p>	<p>(f) An area that supports or provides habitat for:</p> <p>(i) Indigenous species at their distributional limit <del>within Otago or</del> nationally, or – BM, SH, GP, HS, KL, ZL, MR, HG</p> <p>(ii) <del>A population of</del> Indigenous species that are endemic to the Otago region, or VK, BM, MT, KL, MR, SH, ZL, HR, GP,</p> <p>(iii) Indigenous vegetation or an association of indigenous species that is <del>distinctive</del>, of restricted occurrence, or has developed as a result of an unusual environmental factor or combinations of factors. – all agree.</p> <p>Reasons: “distinctive” is a tautology</p>	<p>(f) An area that supports or provides habitat for:</p> <p>(i) <del>Indigenous species at their distributional limit within Otago or nationally, or</del> – VK, MT</p> <p>Reason: distribution limits not a reasonable ecological consideration.</p> <p>(ii) <del>A population of Indigenous species that are endemic to the Otago region, or</del></p> <p>delete because endemic alone is not sufficient to render a population significant in the coastal marine area. - HG</p>
<p><b>Ecological context</b></p> <p>(g) The relationship of the area with its surroundings (both within Otago and between Otago and the adjoining regions), including:</p> <p>(i) An area that has important connectivity value allowing dispersal of indigenous flora and fauna between different</p>	<p>(g) The relationship of the area with its surroundings <del>(both within Otago and between Otago and the adjoining regions)</del>, including:</p> <p>- all agree because already requires consideration of an areas surroundings.</p> <p>(i) An area that has important connectivity value allowing dispersal of indigenous flora and fauna between different areas_ or – all agree – with notes</p>	<p>(i) the context for coastal environment should be interpreted consistently with NZCPS policy 11(b)(vi) - HG, HS, BM</p> <p>(i) agree with (i) in context of terrestrial situations but not freshwater or marine – MT</p> <p>(iv) – delete as it is redundant as is captured by multiple criteria, - MR, VK, MT</p>

pORPS text	Areas of agreement, including any changes	Alternative versions, and why
<p>areas, or</p> <p>(ii) An area that has an important buffering function that helps to protect the values of an adjacent area or feature, or</p> <p>(iii) An area that is important for indigenous fauna during some part of their life cycle, either regularly or on an irregular basis, e.g. for feeding, resting, nesting, breeding, spawning or refuges from predation, or</p> <p>(iv) A wetland which plays an important hydrological, biological or ecological role in the natural functioning of a river or coastal ecosystem.</p>	<p>(ii) An area that has an important buffering function that helps to protect the values of an adjacent area or feature <u>of significant indigenous vegetation or significant habitat of indigenous fauna</u>, or</p> <p>– all agree</p> <p>(iii) An area that is important for <u>a population of</u> indigenous fauna during <u>some a critical</u> part of their life cycle, either <u>seasonally or permanently</u> regularly or on an <u>irregular basis</u>, e.g. for feeding, resting, nesting, breeding, spawning or refuges from predation, or</p> <p>– all agree</p> <p>(iv) A wetland which plays an important hydrological, biological or ecological role in the natural functioning of a river or coastal ecosystem. – BM, GP, KL, HG, ZL, HS, SH</p>	
<p><b><u>Vulnerable and sensitive species</u></b></p> <p><u>(h) An area that contains sensitive habitats or species that are fragile to anthropogenic effects or have slow recovery from anthropogenic effects.</u></p>	<p><b><u>Vulnerable and sensitive species</u></b></p> <p><u>(h) An area that contains sensitive habitats or species that are fragile to anthropogenic effects or have slow recovery from anthropogenic effects.</u></p>	<p>Delete because the clause (in particular references to ‘fragile and slow recovery to anthropogenic effects’) relates to managing effects instead of identification of significance; effects should be managed by the policy framework. – VK, SH, MT, HG, BM, GP, ZL, MR, KL</p>



**Signed:**



Kelvin Lloyd

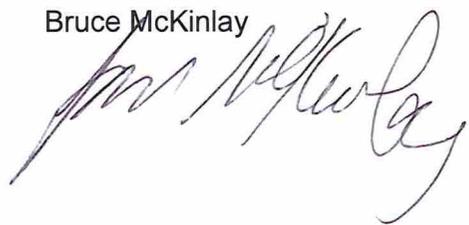
**Signed:**



Vaughan Keesing

**Signed:**

Bruce McKinlay



**Signed:**

Hendrik Schultz

**Signed:**



Mike Thorsen

**Signed:**



Scott Hooson



**Signed:**



Graham Parker

**Signed:**



Hilke Giles

**Signed:**

Zoe Lunniss

**Dated:** 31 March 2023

**Signed:**



Marine Richardson

