

BEFORE THE FAST-TRACK EXPERT PANEL

IN THE MATTER of the Fast-track Approvals Act 2024 ("FTAA")

AND

IN THE MATTER of Bendigo-Ophir Gold Project (FTAA-2507-1089)

JOINT STATEMENT OF EXPERT WITNESSES:

ECOLOGY – EFFECTS MANAGEMENT

10 & 11 June 2026

INTRODUCTION

1. Expert conferencing on the ecology topic of effects management took place in a hybrid format, with participants attending in person in Wellington and online via Microsoft Teams from 1.00pm-6.00pm on 10 June 2026 and 8.00am-6.15pm on 11 June 2026.
2. The conference was attended by the following experts:
 - (a) Dr Matt Baber ("MB") (Applicant);
 - (b) Dr Graham Ussher ("GU") (Applicant);
 - (c) Keith Barber ("KB") (Applicant);
 - (d) Emeritus Professor David Norton ("DN") (Applicant);
 - (e) Zac Milner ("ZM") (Applicant);
 - (f) Jeroen Lurling ("JL") (Applicant);
 - (g) Dr Robyn Simcock ("RS") (Applicant);
 - (h) Trudy Anderson ("TA") (Otago Regional Council);
 - (i) Rebecca Teele ("RT") (Otago Regional Council);
 - (j) Max Crowe ("MC") (Department of Conservation);
 - (k) Dr Mandy Tocher ("MT") (Department of Conservation). Mandy only attended conferencing on 10 June 2026;
 - (l) Rogan Colbourne ("RC") (Department of Conservation);
 - (m) Warren Chinn ("WC") (Department of Conservation);
 - (n) Dr Justyna Giejsztowt ("JG") (Department of Conservation);
 - (o) Nicholas Head ("NH") (Environmental Defence Society);
 - (p) Michael Harding ("MH") (Central Otago District Council); and
 - (q) Matthew Dale ("MD") (Kā Rūnaka). MD did not attend conferencing from 3:45pm-5:30pm on 11 June.
3. Steve Mutch (ChanceryGreen) acted as independent facilitator.
4. Caitlin Todd (ChanceryGreen) assisted the experts to draft the Joint Witness Statement ("JWS").
5. Given that MT was only available on 10 June, she only contributed to the following agenda items:
 - (a) Part of B(i) (where specified);
 - (b) D;
 - (c) W;
 - (d) X;

- (e) Y; and
- (f) Y.1.

6. All experts undertook an interim review of the responses to the above agenda items at the end of Day 1 of conferencing.

CODE OF CONDUCT

7. The experts confirm that they have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023 and referred to in the Fast-track Approvals Act 2024: Panel Conveners' Practice and Procedure Guidance 22 July 2025, and agree to comply with it. The experts confirm that the issues addressed in this JWS are within their area of expertise, unless stated otherwise.

SCOPE OF JWS

8. In Expert Panel Minute 8 (4 May 2026), the Panel directed the experts in the ecology topic of effects management to conference on the identified focus areas. The Panel also issued a supporting paper, Expert conferencing questions – ecology, which provides additional topic-specific detail. Annexure 1 of Minute 8, together with the Expert Panel's supporting paper, have formed the basis of the conferencing agenda.
9. In this JWS, we report the outcome of our discussions in relation to each item (below), including by reference to points of agreement, disagreement, and unresolved matters or uncertainties. Where we are not agreed in relation to any issue, we have set out the nature and basis of that disagreement.

AGENDA ITEMS

Offset and compensation

- A. **Offset restoration and habitat enhancement measures: What certainty is there that the proposed offset restoration and habitat enhancement measures will succeed? Respond specifically to each habitat type referred to in the Assessment of Ecological Effects Report:**

- (i) **cushionfield in dry, exposed sites;**
- (ii) **native dominated scrubland in south-facing shaded sites,**

(iii) native taramea herbfield and shrubland

(iv) native dominated tussockland in all other areas.

10. This agenda item was addressed in the Terrestrial Vegetation JWS dated 2 & 3 June 2026.
11. JG and NH contend that calling this an offset might be inappropriate and this is discussed further at agenda item G below.

B. Likelihood of successful rehabilitation and restoration:

(i) What basis is there for the level of certainty of a positive outcome?

MT was present for the following paragraphs.

12. JG, ZM, NH, MC and MH contend that supporting the adequacy of the actions for tussock grassland and Taramea communities with biodiversity offset accounting models (BOAMs) that include only percentage cover as an attribute does not provide sufficient confidence in the positive outcomes (noting it is asserted by the application that these outcomes are positive).
13. JG considers that BOAMs for lizards are also underparameterised and should be considered indicative at best.
14. MT, MH, MC, JG and MD have concerns that rehabilitation outcomes over 35 years will be adversely affected (less optimistic) due to projected climate change (hotter and drier). Furthermore, the reliance on nursery raised plants could be more palatable to rabbits than naturally occurring plants of the same species.

MT was not present for the following paragraphs.

15. GU notes that the parameter used for lizards in the BOAM model is the same parameter used to assess lizard increases and uplift in a recently published paper for the Mokomoko Dryland Sanctuary that was peer reviewed and published in a NZ scientific journal.
16. JG considers that the BOAM models aggregate the influence of actions in a way that is not transparent. JG notes that she has yet to be provided with spreadsheets relating to the actual BOAM models. Together, because of the small number of parameters and aggregation, offset actions are poorly evidenced.

17. Nevertheless, JG and WC consider that where effects management has been proposed, for the vast majority of species and communities, this has been through compensation (not offsetting) which further exacerbates the lack of certainty around outcomes.
18. In addition to the above concerns, JG, TA, MH, MC, GU and NH consider there are additional effects which have not been addressed which also exacerbates the lack of certainty around outcomes.
19. All experts*¹ acknowledge there are areas outside the DDF that will be adversely affected and that have not been taken into account in the AEE.
20. RT, MC, WC, NH, TA, JG, MH and MD consider that areas outside the DDF that will be directly and/or indirectly affected include, but are not necessarily limited to, the list in paragraph 9 of the Ecology – Lizards JWS and the exploratory drilling in the covenant revocation area. This indicates the degree of adverse ecological impact is higher than currently stated.
21. In relation to paragraph 20 (sentence two) above, MB, GU, DN and ZM note that, relative to direct and indirect impacts associated with the 610ha DDF, the additional and unassessed adverse effects are likely to be relatively minor but uncertainties remain. KB agrees and notes that for invertebrates, the assessed area of impact was assumed to be significantly larger than 610ha.
22. All experts* agree that many of the proposed effects management measures are experimental in this dryland environment. Successful implementation would require a very high level of expertise, monetary support, and management in perpetuity (particularly pest plant and animal control).
23. All experts* consider there are some performance measures (including targets and contingencies) across multiple Management Plans, but there is a lack of one repeated coherent, set list of clear performance measures which should be itemised as consent conditions.
24. All experts* agree that measurable outcomes for management should be detailed in the consent conditions. The way those outcomes are achieved should generally be detailed in the management plans.

¹ Where * is used next to “all experts”, this does not include MT who was not present at Day 2 of conferencing.

25. MH, RT, MD, GU, MC, NH, JG, ZM and DN consider there is a high risk that full implementation will not be achieved. That risk arises from the complexity of management, uncertainty over who will be implementing the ecological management, and the effectiveness of monitoring and enforcement.
26. All experts* agree that conditions that clearly identify triggers and contingency actions in the event of failure to achieve stated ecological outcomes (e.g. success criteria) are important to reduce risk of non-achievement of ecological outcomes. In this regard, further work is required.
27. All experts* note these triggers and contingency actions need to be refined/determined for the management plans so long as they are compatible with consent conditions.
28. RT considers that given paragraphs 22, 23 and 25 above, along with some expected targets and contingencies are missing or too low, and the difficulties to implement the effects management package (e.g. management plans) as it stands, it currently cannot be understood what the overall ecological outcome will be, and the level of ecological loss is potentially higher.

(ii) Is there past experience of successful restoration each habitat type in an environment as harsh as the Project site?

29. This part of the agenda item was addressed in the Terrestrial Vegetation JWS dated 25 May 2026.

C. Performance measures set for the restoration areas and restored habitat types: Are the performance measures set for the restoration areas and restored habitat types appropriate? What other performance measures should be set, if any?

30. This agenda item was addressed in the Terrestrial Vegetation JWS dated 2 & 3 June 2026.

D. Offsetting principles; principles (and limits) of biodiversity offsetting and compensation

31. NH, JG, MC and MH consider that the principles to offsetting are not met for the significant ecological values that comprise the DDF – for example additionality, equivalence, long term outcomes, and uncertainty, and that the AEE materially understates the full extent of irreversible residual effects that cannot be offset.

32. MH, WC, JG, TA, NH, ZM and MC consider that because some of the ecological values are irreplaceable and/or vulnerable, therefore it is not appropriate to use offsetting or compensation for managing residual adverse effects on those values. MT and TA consider Kowarau gecko is an example of a vulnerable species under the NPS-IB.
33. In response to the above paragraphs, MB retains his view, as set out in the conclusion of his AEE, that he considers the *“unavoided loss of irreplaceable and vulnerable species or communities will be permanent and cannot be replaced, outweighed, or balanced by different, alternative, or larger actions elsewhere, and remain an effect of the Project irrespective of the considerable scope, scale, robustness, and beneficial nature of the other ecology actions combined, that the Project will deliver”*. GU, JL, KB and DN agree with this paragraph.
34. All experts agree that the residual adverse effects on ecology after the full effects management hierarchy is applied remain significant (noting that RS does not have a view on this as it is not her expertise).
35. Further, JG, TA, MH, RC, MC, GU, DN, RT, WC, MD, MT and NH agree that a significant loss of ecological values generally is expected to occur after all effects management actions (if they are implemented effectively), as described by the AEE.
36. TA and MT contend that, for at least one lizard species (Kowarau gecko), the NPS-IB criteria relating to the circumstances in which offsetting and compensation are not appropriate are triggered for clauses (a), (b) and (c) of Principle 2 in Appendices 3 and 4 of the NPS-IB for the application as it is currently described.
37. MT, JG, RC, TA, MD, NH, MH and MC consider that relying heavily on adaptive management delays the management of effects until the future, creating an inappropriate level of uncertainty in the package and any assessment of overall ecological loss.
38. JG, MH, WC, NH, MC and MT consider the trajectory of the ecosystems at the site are in contention and if not in decline that would violate the principle of additionality. They consider this has substantial implications for the overall level of ecological effects.

39. DN, RS, GU and MB do not consider this extends to native shrubland where the proposed management in the Ardgour Restoration Area (ARA) and MRZ will lead to additional biodiversity gains.
40. MT, MD, JG, MC, RC, WC, MH and NH consider that failing to account for the removal of covenant protection eliminates the ecological gains the covenant would have delivered over time. This also breaches the principle of additionality.
41. All experts note that exploratory drilling is proposed by the application within the covenant revocation area (outside the DDF) and the effects of that activity have not been considered in the AEE.
42. MT considers this seems inconsistent with i) the proposal to mine and/or disturb only the DDF; and ii) covenant objectives. MD, MH, TA, DN, MC and JG agree with this.

Pest exclusion fenced areas

E. Eradication of all mammalian browsers except rabbits is proposed for the pest fenced areas: Is retention of rabbits appropriate and will it be feasible to manage rabbit densities to achieve the proposed outcomes in the absence of any rabbit predators?

43. KB considers that rabbits can be effectively controlled within predator-proof fenced areas in the absence of mammalian predators. This will require an active and sustained control programme using conventional tools. New technologies should be adopted where appropriate, noting that success of such a programme would not be contingent on their inclusion. MB has not commented on this because he is not a mammalian pest management expert.
44. TA is concerned that managing rabbits within a predator proof fence to a higher population level other than eradication may be problematic in the context that the use of toxins can be detrimental to lizards.
45. MH, MC, NH, ZM, TA and RT consider that managing rabbits to achieve the proposed outcomes is highly experimental and may not be feasible. ZM adds that spring annuals have been recorded within the proposed sanctuaries and may be affected by changes in the grazing regime.
46. KB acknowledges an experimental aspect to this situation i.e. managing rabbits at a specific level to achieve ecological outcomes. KB notes there are alternative animals that could be used i.e. sheep. KB considers that while the outcome

should be fixed, the methodology for achieving this should be addressed in the management plan.

F. Management of mammalian pests beyond the life of the mine / Long term management of the pest exclusion fenced areas: What happens to the exclusion fenced areas after 35 years? Will the fenced areas continue to be managed after that time?

(i) Within the ARA, DDF and MRZ and sanctuaries

- 47. Long term management has been addressed elsewhere in this JWS.
- 48. All experts* agree it is essential that plant and animal pest control (which includes management of sanctuaries) continue in perpetuity, to ensure associated gains are maintained.
- 49. KB advises that the Applicant confirmed their intention is that the ecological programme (including fenced areas) will continue to be managed longer than 35 years with funding.
- 50. All experts* agree that to ensure long term ecological outcomes are achieved, there needs to be greater certainty around how that management will continue in the long term (beyond 35 years), who will be responsible for undertaking that management, and who will be responsible for paying for it.

G. *[Moved to I.1]*

H. Threshold triggers for delay or commencement of Come-In-Time open pit: The threshold trigger for delay or commencement of Come-In-Time open pit mining is poorly defined and could be contested. Can you define more precisely what this trigger will be?

- 51. This agenda item was addressed in the Terrestrial Vegetation JWS dated 25 May 2026.

Site rehabilitation

- I. **Pit wall and reconstructed surface revegetation: Pit wall revegetation: What confidence is there that the pit walls will be sufficiently stable and uniform to enable the placement and retention (without erosion) of lenses of rock and soil and replanting as proposed?**

52. RS notes that rock and soil are proposed to be placed on pit benches (not walls) per LERMP Appendix E (Figure on p77). The pit benches proposed to be covered are adjacent to where the benches meet natural ground (to ~20m). RS notes that MGL confirmed pit benches are strongest where they meet natural ground, inferring these benches are expected to be stable and not erode. Rock and soil placed on benches is expected to stabilise over time through natural armouring and vegetation establishment, with a variety of methods available to manage erosion.

- I.1 **Tailings Storage Facility wetland – reliability of water supply and sustainability of the wetland. Where will water come from to sustain the proposed 6ha TSF wetland through 12 months of the year (2ha of which is meant to be permanent wetland)?**

53. RS refers to the Geochemistry / Water, etc. JWS paragraphs [80]-[83]. Paragraph [82] states *“whilst surface water flows exist above the final surface of the TSF, no evidence has been presented to confirm a constant water supply, year-round, will be available. Further, no mitigation for low or zero flow situations has been proposed.”* In paragraph [83], several experts *“recommend that, to address this absence of data, detailed modelling of flows above the TSF surface and an associated water balance calculation, reflecting seepage and evapotranspiration from the wetland area, be undertaken.”* All experts* consider that appropriate hydrological information is needed for confidence in the sustainability of wetlands on the TSF. A suitable hydrological regime is critical to establish and sustain the TSF wetlands described in the LERMP.

- I.2 **Reliability of water supply and sustainability of other wetlands within the DDF**

54. All experts* consider that appropriate hydrological information is needed for confidence in the sustainability of other wetlands within the DDF. A suitable hydrological regime is critical to establish and sustain the wetlands described in the LERMP.

J. Rehabilitation trials for cushionfields and spring annual herbs: What additional mitigation measures should be/will be undertaken in the event that rehabilitation trials for cushionfields and spring annual herbs are unsuccessful?

55. This agenda item was addressed in the Terrestrial Vegetation JWS dated 2 & 3 June 2026.

K. Contingencies/additional measures in the event of partial or complete failure of site rehabilitation and restoration plantings: The finished mine surfaces to be rehabilitated will not be favourable to plant growth. What confidence is there that these areas can be successfully planted and what contingencies are in place if replanting fails?

56. This agenda item was addressed in the Terrestrial Vegetation JWSs dated 25 May 2026 and 2 & 3 June 2026.

L. Propagation of threatened plant species for planting – species experience, skills and commercial production capacity: What propagation experience is there to successfully germinate and grow the native plants required to create 220 ha of tussockland and 230 of scrubland?

57. This agenda item was addressed in the Terrestrial Vegetation JWS dated 2 & 3 June 2026.

M. *[Merged with I.1 above]*

Vegetation

N. Comprehensiveness of baseline flora and fauna assessments

58. This agenda item in relation to flora was addressed in the Terrestrial Vegetation JWS dated 25 May 2026.

59. All experts* note that this agenda item in relation to fauna was addressed in the Lizards, Avifauna and Invertebrates JWSs.

- O. Response to Geoff Rogers suggestion that “Myosotis glauca Threatened – Nationally Vulnerable, has been misidentified as the much less threatened M. antarctica subsp. antarctica or missed entirely in survey.”**

60. This agenda item was addressed in the Terrestrial Vegetation JWS dated 25 May 2026.

P. Taonga / taoka plants

61. This agenda item was addressed in the Terrestrial Vegetation JWS dated 25 May 2026.

Invertebrates

- Q. Offset and compensation measures for invertebrates: Are the offset and compensation measures appropriate to address likely and potential adverse effects on invertebrates?**

62. The experts did not have sufficient time to address this agenda item.

- R. Paragraph [30] of the Ecology: Invertebrates JWS requested that the following questions/topics be addressed at the Effects Management conference:**

How has the “Uncertain” expected outcome classification for all invertebrate species in Table 26 of the AEE been considered in the overall level of ecological effect of the Project, i.e. how much weight has “uncertainty” been given in the overall Net Loss?

63. The experts did not have sufficient time to address this agenda item.

- S. Paragraph [30] of the Ecology: Invertebrates JWS requested that the following questions/topics be addressed at the Effects Management conference:**

It is understood that the management plans have been used to decrease the level of Net Loss the project is projected to have. However, given the concerns around the management plans, the decrease in Net Loss has likely been overstated.

64. The experts did not have sufficient time to address this agenda item.

Avifauna

- T. Paragraphs [22]-[29] and [43]-[44] of the Ecology: Avifauna JWS requested that the following topics be addressed at the Effects Management conference:**

Uncertainty of achieving management plan / rehabilitation outcomes

65. The experts did not have sufficient time to address this agenda item.

- U. Paragraphs [22]-[29] and [43]-[44] of the Ecology: Avifauna JWS requested that the following topics be addressed at the Effects Management conference:**

Assessment of effects in relation to mine toxicity in the pit lakes and the tailings storage facility (TSF) during its operation – toxicity levels and assessing against the guidelines for potential impacts on avifauna.

66. RT considers the potential effect of ecotoxicity on indigenous wildlife (particularly avifauna) has not been addressed or taken into account, from the permanent Pit Lakes, the TSF Decant Pond (~10 year life), and other mine related water bodies (see Appendix A of the reconvened Geochemistry / Water Quality / etc. JWS dated 10 June 2026). The contaminants are understood to include nitrogenous compounds, sulfate, metals and metalloids, cyanide, pH, and NTU (as per paragraph [55] of the Geochemistry / Water Quality / etc. JWS dated 8 & 9 June 2026). There is potential for negative ecological effects for a range of indigenous wildlife from the contaminant levels in the on-site water bodies, based on a brief and partial review of information in light of the very recent JWS noted above. For example, from RT's understanding, the arsenic level of the RAS Pit Lake is projected to reach 0.1 mg/L (in document B.06C in the Fast Track application), and in the TSF Decant Pond (~10 year life) 8.6 mg/L (in Appendix A reconvened Geochemistry / Water Quality / etc. JWS dated 10 June 2026). These values are above the draft guideline value for livestock drinking water (which includes poultry) for arsenic, which is <0.025 mg/L (these Guidelines are footnoted in the 10th June Geochemistry / Water Quality etc JWS dated 10 June 2026). RT notes that the Guidelines assume primary water source and that this is an area that requires interdisciplinary expertise and input from terrestrial ecology (at least invertebrates, avifauna, lizards), geochemistry, water quality, hydrology, water management, freshwater ecology and importantly ecotoxicity, before definitive statements can be made on the ecological effect. RS and JL agree with this.

67. MB confirms that adverse effects on avifauna associated with water toxicity were not factored into his AEE on the assumption that notable water quality issues would be managed via appropriate plans. If this assumption does not hold, then the potential magnitude of effects on birds could be higher than assessed. JL agrees with this paragraph.
68. RT, MB, JG, RC, RS, MD and JL consider that, as the potential effect of contaminants in proposed water bodies in the project area has not been able to be addressed in the AEE, this remains as an area of concern. They note that it requires review of information that has emerged in the last 24 hours and requires review from various experts (including ecotoxicologists, terrestrial ecology (at least invertebrates, avifauna, lizards), and geochemistry, water quality, hydrology, water management, and freshwater ecology) to confirm the level of ecological effect.

V. Adequacy and detail of biodiversity outcome monitoring

69. The experts did not have sufficient time to address this agenda item.

Lizards

Correspondence from the parties in relation to the Ecology: Lizard conferencing, requesting that the following focus areas (directed by the Panel to be addressed at Lizards conferencing) instead be addressed at Effects Management conferencing:

W. Site rehabilitation and offset/compensation measures for lizards

70. This item has been addressed in the Ecology – Lizards JWS to an extent.
71. MT, MB, MD and TA consider that further workshopping is required to clearly identify points of difference between the parties on this topic. MT considers that reiterating responses already in front of the Panel seems of little value.
72. TA considers that the rock stack configuration needs additional discussion and will be detailed in Appendix C of the LERMP to be updated and provided on 22 June. TA and MT consider that the rehabilitation and mitigation measures as they relate to lizard management need to be clearly outlined in the LMP, and they currently are not.

73. KB and RS consider rock stack configuration is already detailed in Appendix C of the LERMP although they could benefit from refinement and invite input into refinement.
74. KB, RS and MB consider that while the rationales and requirements for rock stacks should be included in the LMP, the most suitable plan for detailing construction is in the LERMP. This reduces referring to the same information across multiple management plans.
75. MB acknowledges that in other relevant management plans, further detail should be provided and cross reference to the LERMP.
76. All experts agree that measurable outcomes for lizard management should be detailed in the consent conditions. The way those outcomes are achieved may be detailed in the management plans.
77. TA considers the LERMP is inconsistent in whether the rubble pits are intended to provide habitat for lizards or only invertebrates.
78. RS clarifies that Appendix C of the LERMP details rehabilitation measures for lizard habitat that focus on rock refugia and rubble stacks, with available references and expertise from the Applicant's design team.
79. MD, TA, KB, MT, GU and MB are of the view that the proposed sanctuaries are of insufficient scale to address the effects of the proposed activity, both with regards to the size of the impacted area and the uncertainty around the effectiveness of planned actions such as lizard salvage and relocations.
80. MT, MD and TA consider the area affected is as defined in paragraph 9 of the Ecology – Lizards JWS.
81. TA and MT consider there is no certainty that Kowarau gecko and southern grass skink will occupy rock stack habitat. They consider that, over time, rock stacks placed within natural habitats may be occupied by lizards residing nearby, but the life traits of southern grass skink and Kowarau gecko add additional uncertainty.
82. TA and MT consider that there is no published research documenting the successful colonisation of rock stacks by southern grass skink or Kowarau gecko. TA and MT consider that, for some rock stacks proposed within the DDF, their colonisation by southern grass skink and Kowarau gecko is further challenged by their placement on an unnatural landform.

83. RS, MD, GU, MB, JL, ZM and KB identify that rock stacks and rubble pits are designed to deliver multiple rehabilitation outcomes, primarily lizards but also for plant establishment, invertebrates, birds, and for landscape outcomes. MB, RS and GU note that a lot of these expectations are based on known, reported species/habitat associations in the landscape.
84. RT notes that no commentary/evidence is provided for benefits of recreated rock stacks and rubble pits for invertebrates, birds and plants.
85. GU and MB reiterate their position in the lizard report, their statements of evidence, and the Ecology – Lizards JWS that these species are found throughout a range of habitat types in the DDF and there is no reason to believe why they will not recolonise a rehabilitated surface with these design features as set out in the LERMP. If necessary, natural recolonisation can be augmented with releases within the rehabilitated surfaces as a form of adaptive management. MB intends to update the LMP to that effect. For clarity, MB notes that this is not currently part of the application and is not relied on to manage effects but proposes to update the management plans accordingly.
86. MT and TA note that adaptive management that may include augmentation of naturally colonised lizards with new animals, into the DDF, is not part of the Application. The addition of this action will affect effects assessments and potentially, the magnitude of residual effects in ways that are difficult to predict.
87. MT and TA are concerned that the claimed benefits to lizards from rehabilitation of the DDF are not supported by sufficient evidence. Similarly, as noted in the Ecology – Lizards JWS, they consider that the expected rehabilitation gains for lizards across the ARA appear to be overstated, e.g., 50% gain in habitat quality over 35-years.
88. MT, MC and MH, based on observations at Macraes Flat, have concerns whether enough topsoil will be available over the post-mine landform, to effectively support rehabilitation goals.
89. RS notes that the rehabilitation plan is based on salvaging and storing adequate volumes of topsoils and root zones to deliver the requirements specified in Appendix D of the LERMP which includes minimum areas of deep root zones (2.2m depth) for the ELF. RS considers that tracking the volumes of topsoils and root zones is a critical component of mine operations. RS acknowledges that soils will degrade in stockpiles, but considers they will recover through the rehabilitation process and support the plants.

90. ZM, MT, MC and MH note that rock stacks and rubble pits that are proposed in the LMP may create harm (i.e. leakage) on vegetation values that exist within the sanctuaries, and these affected areas have not been assessed as a direct impact in the same manner that the sanctuary fences have been. MT considers the same can be said for fauna values, for example, lizards.
91. MB and KB note that this is a potential issue and leakage outcomes are not the intent of the management plan, and the management plans will be updated to minimise this type of outcome.

X. Long-term management and legal protection of sanctuaries

92. All experts agree that any sanctuary must have legal protection and appropriate management in perpetuity or for as long as mammalian pests pose a threat.
93. All experts consider that fenced sanctuaries require long-term (intergenerational) management and funding, and appropriate entities need to be established to facilitate this.

Y. Appropriateness of performance measures for the lizard effects management programme

94. This was addressed in the Ecology – Lizards JWS.

Y.1 Species introduction:

- i. **consider whether the introduction of grand and Otago skinks & jewelled geckos into fenced enclosures forms part of the mitigation/compensation offerings, noting this has been mentioned in the application but not formally proposed as a compensation measure.**
 - ii. **Introduction of grand and Otago skinks to the fenced enclosures has been loosely referred to in the application but is not formally offered as a project compensation measure. Is there support for this to occur?**
95. MD, GU, MB, TA, and MT are of the view that the re-introduction of threatened species (such as grand skinks, Otago skinks and jewelled geckos) into fenced and predator-controlled enclosures has potential to contribute significantly to reducing the effects of the proposed activity on lizards. However, these actions are not part of the application.

96. MB, GU and KB note that the conservation actions referred to above are not considered part of the proposed residual effects management because they cannot be guaranteed or conditioned.
97. MT and MB consider that all reference to relocations of grand, Otago skinks and jewelled geckos into fenced sanctuaries should be removed from management plans.
98. MD, KB, MB and GU consider that should the Applicant wish to include the re-introduction of these species (and potentially others) into their effects mitigation framework, that it must commit to developing and implement translocation plans for these species in partnership with mana whenua and Te Papa Atawhai and have this included in consent conditions.
99. MD and GU consider that residual effects management should be considered in an integrated manner across the various disciplines (lizards, vegetation, freshwater etc) and should not be limited to “like for like’ offsetting activities.
100. JG and MD consider that like-for-like offsetting activities should be prioritised.
101. TA considers the translocation proposal has many uncertainties including the additional application and approval process, availability of source populations and required reliable and in-perpetuity management. These matters aside, TA agrees that habitat suitable for grand and Otago skink, and jewelled gecko, is present (subject to the sanctuary size and location comments in the Ecology – Lizards JWS) and an additional predator-proof sanctuary option for the management of these species would be beneficial.

Compensation generally

Z. Two compensation type measures are referred to in the Application but with the suggestion that these are not offered as biodiversity offset or compensation:

(i) Grand and/or Otago skinks translocation to pest fenced areas: Introduction of grand and/or Otago skinks to the pest exclusion fenced areas

(ii) A Biodiversity and Heritage Enhancement Fund (BHEF)

Are these / should these be included as part of the effects management measures?

102. All experts* agree these are not, and should not be, included as part of the effects management measures.

BHEF more generally

103. JG considers that the proposed BHEF requires substantial additional detail to ensure that funds are used effectively. JG considers that funding should be used to address regional or national conservation priorities for similar biodiversity types. This 'like-for-like' approach aligns with best practice for effects management and allows for the most grounded assessment of the sufficiency of the fund. MC agrees with this paragraph.

104. JG considers that while the fund size does not appear to have been designed to scale with expected residual effects of the project (following offsetting and other compensation actions). Nevertheless, after consideration of nearby Bioinvest records (Bioinvest is an outcome-based planning and prioritisation tool developed by DOC) pertaining to similar ecological species and communities nearby, it is apparent to me that the sum proposed is not commensurate with residual effects following offsetting and other compensation.

AA. [Moved to Z(ii) above]

BB. Consistency with the National Policy Statement for Indigenous Biodiversity: To what degree is the proposal consistent with the National Policy Statement for Indigenous Biodiversity, particularly in terms of offsetting and compensation?

105. Offsetting and compensation in the context of the NPS-IB was addressed elsewhere in this JWS.
106. JG, MB, WC, MD, MH, TA, RC, ZM, RT, DN, NH and MC agree that the objective of the NPS-IB is to protect, maintain, and restore New Zealand's indigenous biodiversity, ensuring there is at least no overall loss of indigenous biodiversity, and that the proposal is not consistent with this objective.

Other agenda items

CC. Magnitude and overall level of ecological effect

107. RT understands that: (1) there is a net loss for lizards and invertebrates' values; and (2) for vegetation (including communities) and avifauna values there are some proposed net loss and some potential net positive outcomes. RT considers there is greater net loss and lesser net positives than is stated for the ecological values due to, but not limited to: (1) the experimental nature of the effects management package, (2) the Management Plans as they stand at present, and (3) that the impact of indirect effects such as lighting and ecotoxicity, have not, or not sufficiently, been addressed in the AEE. Overall, the effects management package does not balance or closely balance the ecological impacts, there appears to be a greater ecological net loss than currently stated. JG agrees with this paragraph. MD and TA agree with respect to lizards.
108. JL considers that predator control, together with proposed terrestrial and wetland habitat enhancement measures, is likely to result in a net gain for most avifauna species utilising the site. However, this conclusion is subject to reassessment of potential ecotoxicological effects in light of recent information, as discussed in agenda item U (ecotoxicology). MB and GU agree with this paragraph.
109. In light of the recent Lighting/Dark Sky Joint Witness Statement and additional literature reviewed, JL considers that the overall effect of lighting on resident avifauna and avifauna within Bendigo Wetland are low at both the Ecological District and National scales. However, the level of effects on migratory braided river bird species remains uncertain and is best characterised as low-moderate under current conditions. Provided the recommendations contained within the Lighting/Dark Sky Joint Witness Statement, and the measures proposed in the Outdoor Lighting Report, are fully incorporated into consent conditions and effectively implemented, lighting is likely to result in a low level of effect on migratory avifauna.

110. JG and WC are concerned that many species, but particularly invertebrate species, are assessed as having “Uncertain” outcomes, which could be interpreted as equally likely to be a net loss and net gain. However, they consider some detrimental impacts on invertebrates are guaranteed, whereas the benefits of management interventions (many of which are experimental) are unknown. They consider that a precautionary approach should therefore be prioritised.
111. KB considers there are a number of negative impacts as well as some positives outlined in the AEE and used for the assessment of effects. The use of “Uncertain” was specific because many of the outcomes are unknown meaning there is insufficient information to make conclusions about net loss or net gain outcomes. MB agrees.
112. MH, MC and NH have concerns that the method used for assessing magnitude of effect is inconsistent with that outlined EIANZ Guidelines. The way effects have been assessed in the AEE makes it difficult to determine with clarity the actual effects of the proposed activity prior to the potential management of those effects.
113. MH, WC, NH and JG are concerned that the magnitude of effects assessment does not assess effects on all ecological values; it confines its assessment to components of the site i.e. species and vegetation types.
114. MC, MH and NH consider that the AEE has included the rehabilitation of the DDF as “mitigation” prior to assessment of the magnitude of residual effects. It is not transparent to what extent rehabilitation contributes to reducing the magnitude of residual effect. Claiming credit for the potential benefits of rehabilitation that will not be realised for years or decades and which are highly experimental, prior to determining the level of residual effect, appears to underestimate the magnitude of residual effect.
115. ZM, GU and MB consider that in light of recent analysis of the 2025 spring annual survey data (the GPS coordinates distributed by the Applicant), the magnitude of effect on spring annual species should be as follows:
- (a) Retain at Very High for *Myosotis brevis*;
 - (b) Elevate from High to Very High for *Ceratocephala pungens*;
 - (c) Elevate from Moderate to Very High for *Myosotis antarctica* subsp. *antarctica*; and

- (d) Elevate from Moderate to Very High for *Myosurus minimus* subsp. *novae-zelandiae*.

- 116. MH, MC and TA note that while the data were made available, the report that outlines the method and data analysis was not made available despite repeated requests to the Applicant.
- 117. MB, ZM and GU note that spring annual 2025 data elevate the level of residual effects for all four spring annual species to very high. Correspondingly, effects on all four spring annuals are unlikely to meet the limits to offsetting and compensation principles.

DD. Application of effects management hierarchy

- 118. The key concerns regarding the application of the effects management hierarchy have been traversed elsewhere in the JWS.

DD.1 Magnitude of residual effects:

(i) How lighting and noise have been addressed

- 119. The experts did not have sufficient time to address this agenda item.

(ii) Expected/stated outcomes based on residual effects

- 120. The experts did not have sufficient time to address this agenda item.

EE. Consistency with conservation covenant objectives, partial revocation of Bendigo Conservation Covenant and potential impacts

- 121. This agenda item was addressed from a terrestrial vegetation perspective in the Terrestrial Vegetation JWS dated 25 May 2026.
- 122. The experts did not have sufficient time to further address this agenda item.

FF. Ecological monitoring programme

- 123. MB, MC, NH, ZM, MH and DN refer to their respective paragraphs in agenda item O(i) in the Terrestrial Vegetation JWS dated 2 & 3 June. TA also refers to paragraph [109] of the Ecology – Lizards JWS.
- 124. MB clarifies that this is where the abundance or life history of the target species is not conducive to data capture during the proposed monitoring.

125. WC is unclear about the invertebrate relocation monitoring regime. WC considers that the shifted populations of invertebrates need very robust tracking and what is currently proposed is insufficient for tracking persistence of the populations.
126. KB acknowledges there are risks with most monitoring techniques. The outcomes from salvage and relocation have not been relied on to reduce the severity of effects invertebrates. Therefore, while monitoring may be useful, verified and accurate results are not essential. If the impacts of this monitoring are deemed unacceptable then the monitoring can be removed from the programme without major consequence. This is a management plan matter and should be left to further workshopping.
127. WC considers that the interpretation of the indigenous invertebrate community is insufficient to create and monitor an invertebrate sanctuary in response to the ecological effect of mining and habitat loss. In particular, WC is concerned about the characterisation and effects on the composition of the remaining invertebrate community.

GG. Drafting, finalisation and certification of management plans

128. DN acknowledges that expert conferencing can only consider the material that was included in the substantive application. DN notes that the Panel has requested that management plans are updated considering the feedback through workshops and conferences by June 22. In revising the ARA management plan, DN will attempt to address the issues raised in conferencing.
129. All experts* consider that it is impractical to adequately update management plans in consultation with all relevant parties prior to June 22.
130. MH, RT, MC, ZM, NH, JL, GU, MB, MD and DN consider that it is inappropriate to certify the management plans until consent conditions are finalised.
131. All experts* consider that specific workshops on management plans will be beneficial to further refine management plans.

HH. Biodiversity Advisory Group (BAG)

132. All experts* recommend the establishment of a BAG to provide independent advice to consent authorities.
133. MH, RT, DN, MD, MC, GU, NH, MB, ZM, JG, JL and TA consider the BAG should comprise no fewer than five ecologists, nominated by, but not representing, mana

whenua and consent parties, with specialist expertise in dryland ecosystems, to review biodiversity outcome reporting and compliance with relevant consent conditions.

134. All experts* agree that the BAG ecologists should include those with expertise required to review and advise on implementation of the ecological actions. They expect further detail will be provided in the consent conditions.

II. Long-term protection and management

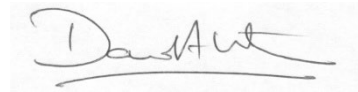
135. All experts* (except KB and ZM) note that without in-perpetuity protection and non-wasting and enduring funding for ecological management, many of the biodiversity gains achieved in 35 years' time from the restorative management would be lost. KB and ZM agree in principle, though consider there is not enough information to state gains *would* be lost with absolute certainty.
136. All experts* agree that there should be a form of secure legal protection for the ecological values of the consent area beyond 35 years, which could be achieved in a number of ways.
137. All experts* consider that protective covenants on their own are unlikely to be adequate to protect the site and achieve long-term rehabilitation outcomes and protection beyond 35 years.
138. MC, TA, NH, RS, DN, RT and MH consider that covenants that place obligations on landowners require compliance monitoring, and no clarity has been provided as to the responsible organisation, underlying legislation and durability of the mechanism detailing how obligations can be ensured in perpetuity.
139. RT, RC, MD, MH, MC, DN, NH, ZM, JL, TA, GU and WC note that a potential change of land status (e.g. protection under the Reserves Act) could provide greater protection than a covenant, noting the importance of continued funding to sustain the ecological outcomes.
140. MB, RS, KB and JG agree with the above in principle but consider mechanisms in relation to legal status and covenanting to be outside their direct area of expertise.

141. JG, MH, MD, MC, RC and ZM consider that even if long term legal protection and funding is secured, some effects management interventions (such as fenced sanctuaries) result in biodiversity outcomes that are more vulnerable in the long term because they require uninterrupted long-term management.

SIGNATURES OF EXPERTS



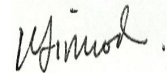
Dr Matt Baber



Emeritus Professor David
Norton



Zac Milner



Dr Robyn Simcock



Dr Graham Ussher



Keith Barber



Jeroen Lurling



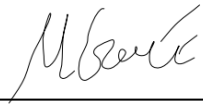
Trudy Anderson



Rebecca Teele



Nicholas Head



Max Crowe



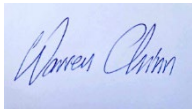
Dr Mandy Tocher



Michael Harding



Dr Justyna Giejsztowt



Warren Chinn



Matthew Dale



Rogan Colbourne