BEFORE AN EXPERT PANEL **FTAA-2507-1089**
BENDIGO-OPHIR GOLD PROJECT

Under the	FAST-TRACK APPROVALS ACT 2024
In the matter of	an application for approvals to establish, operate, rehabilitate and ultimately close an open pit and underground gold mining operation known as the Bendigo-Ophir Gold Project
By	**MATAKANUI GOLD LIMITED** Applicant

STATEMENT OF EVIDENCE OF MICHAEL HARDING

TERRESTRIAL ECOLOGY

for

CENTRAL OTAGO DISTRICT COUNCIL

10 April 2026

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List of Abbreviations

AEE	Assessment of Ecological Effects (Document B.08)
ARA	Ardgour Restoration Area
BOAM	Biodiversity Offset Accounting Model
BOGP	Bendigo-Ophir Gold Project
CIT	Come In Time (mine pit)
CODC	Central Otago District Council
Consent Area	The BOGP Consent Area (as mapped in Document C.03)
DDF	Direct Disturbance Footprint
DOC	Department of Conservation
EcIAG	Ecological Impact Assessment Guidelines (EIANZ)
ED	Ecological District
EIANZ	Environmental Institute of Australia and New Zealand Inc.
ESA	Ecological Study Area
FTAA	Fast-Track Approvals Act 2024
LCDB	Land Cover Database
LERMP	Landscape and Ecological Rehabilitation Management Plan
NPS-IB	National Policy Statement for Indigenous Biodiversity 2023
MGL	Matakanui Gold Limited
MRZ	Mine Regeneration Zone
MWLR	Manaaki Whenua-Landcare Research
ORC	Otago Regional Council
RFI	Request for Information
SNA	Significant Natural Area (s.6(c) Resource Management Act 1991)
TAR	Threatened and At Risk (species)

Introduction

1. My full name is Michael Arthur Coupland Harding.

2. I have been asked by the Central Otago District Council (CODC) to provide expert evidence on terrestrial ecology values of the site of Matakanui Gold Limited's proposed Bendigo-Ophir Gold Project (BOGP).

Qualifications and Experience

3. I am an independent Environmental Consultant working from offices in Nelson and Dunedin. I have papers in Botany and Geology from Otago University (1980) and a Diploma in Parks and Recreation Management (with Distinction) from Lincoln University (1986). I have seven years' experience in national park management and conservation advocacy, and a subsequent thirty years' experience as an independent ecologist.

4. My work as an independent ecologist has included field surveys of indigenous vegetation and habitat, assessments of ecological significance, assessments of priorities for protection of indigenous ecosystems, and advice on management of indigenous ecosystems, throughout New Zealand though principally in the eastern South Island.

5. I am intimately familiar with the vegetation, flora and natural processes of dryland (open) ecosystems of the eastern South Island. Much of my consultancy work in recent years has been field survey and assessment of dryland ecosystems in the Waitaki Basin and Central Otago. Experience that is especially relevant to this consent application includes:

    a) Survey of and contribution to scientific research into the distribution and health of threatened dryland cress (*Lepidium*) species in Central Otago, Mackenzie Basin and Waimakariri Basin (2021 to 2023).[1]

    b) Survey of Significant Natural Areas (SNAs) of inland dryland ecosystems in the Mackenzie and Waitaki districts, comprising approximately 580 hours field survey work (2012 to 2020).

[1] Walker, S.; Harding, M.A.C.; Loh, G. 2023. The pattern of declines and local extinctions of endemic inland Lepidium species in the eastern South Island. NZ Journal of Ecology 47(1): 3547.

c) Survey of vegetation at proposed clearance sites in the Waitaki Basin (Mackenzie and Waitaki districts), assessment of that vegetation/habitat against district plan rules, and assessment of the ecological significance of those sites, comprising approximately 220 hours field survey work (2014 to 2023).

d) Survey of vegetation and/or collation of specialists' survey reports on high country pastoral leases, including four Central Otago properties, for the Department of Conservation's (DOC) input into the Pastoral Lease Tenure Review Programme.

e) Terrestrial ecology assessments of applications under the Crown Pastoral Land Act 1998 and the Crown Pastoral Land Reform Act 2022 for activities on eastern South Island high country (including Central Otago) pastoral leases.

f) Preparation of weed control strategies for the upper catchments of major eastern South Island rivers, including the Rangitata, Rakaia, Waimakariri and Clarence/Waiau-toa.

g) Review of ecological assessments and presentation of terrestrial ecology evidence at the Commissioner Hearing 2024 for an application for subdivision of land in Dunstan Ecological District that supports populations of spring annual species (2024 to 2025).

h) Provision of ecological advice to the Biodiversity Collaborative Group for preparation of the National Policy Statement for Indigenous Biodiversity 2023 (NPS-IB) (2017 to 2019).

i) Analysis of recent changes to terrestrial ecosystems in Otago Region, and provision of advice to Otago Regional Council (ORC) (2022).[2]

j) Preparation of maps of land converted to pasture or crops throughout Central Otago (including Dunstan Ecological District) for ORC (2023 to 2025).

k) Review of compliance with consent conditions for ecological restoration and compensation activities at Oceana Gold Limited's Macraes Gold Mine, as advice to Waitaki District Council and Dunedin City Council (2023 to 2026).

[2] Harding, M.A. 2022. Otago Region: analysis of recent changes to terrestrial indigenous ecosystems. Unpublished Contract Report. Otago Regional Council. 30p.

6. I inspected the Direct Disturbance Footprint (DDF) and adjacent parts of the Consent Area on 27th August 2025, and 18th & 20th February 2026. I inspected the Ardgour Restoration Area on 13th March 2026. I inspected cushionfield habitat on a nearby property (the proposed Rocky Point subdivision) on 12th March 2026.

Code of Conduct

7. I have read the code of conduct for expert witnesses contained in the Environment Court's Practice Note 2023 (the Code). I have complied with the Code when preparing this written statement of evidence. The data, information, facts, and assumptions I have considered in forming my opinions are set out in my evidence. 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

8. The scope of this Evidence is terrestrial ecology. My principal areas of expertise are vegetation, flora, and ecosystem processes. This Evidence includes advice on effects management (notably compensation actions). That advice benefits from my experience reviewing compliance with consent conditions of other major projects.

Material Considered

9. In preparing this evidence I have reviewed the following documents. Other documents and papers are referenced in footnotes throughout this Evidence.

    a) Assessment of Ecological Effects: Terrestrial Ecology. Bendigo-Ophir Gold Project. Alliance Ecology, October 2025 (Document B.08).

    b) Bendigo-Ophir Gold Project Mammalian Pest Survey. Habitat NZ Ltd, September 2025 (Document B.09).

    c) Bendigo-Ophir Gold Project Terrestrial Invertebrate Survey. Habitat NZ Ltd, September 2025 (Document B.11).

    d) Bendigo-Ophir Gold Project Wetland Values Assessment. RMA Ecology, October 2025 (Document B.12).

e) Bendigo-Ophir Gold Project Vegetation Values Assessment. RMA Ecology, October 2025 (Document B.13).

f) Bendigo-Ophir Gold Project Avifauna Values Assessment. RMA Ecology, August 2025 (Document B.14).

g) Bendigo-Ophir Gold Project Lizard Values Assessment. RMA Ecology, October 2025 (Document B.15).

h) Applied Research Plan for conservation, management, rehabilitation and expansion of cushionfield. Manaaki Whenua-Landcare Research, July 2025 (Document B16).

i) Bendigo-Ophir Gold Project Landscape and Ecological Rehabilitation Plan. Manaaki Whenua-Landcare Research & Habitat NZ Ltd, October 2025 (Document G.07A).

j) Ardgour Restoration Area Management Plan. Biodiversity Solutions Ltd, September 2025 (Document G.08).

Summary

10. The Bendigo-Ophir Gold Project (BOGP) (the **Consent Area**)[3] lies at a location within which indigenous vegetation is depleted to less than 10% (lower slopes) or 20-30% (upper slopes) of its original extent nationally. Lower-altitude parts of the Consent Area are a 'naturally uncommon' Land Environment (moraine) which has a threat status of 'nationally vulnerable'. All experts engaged by Matakanui Gold Limited (MGL) and other parties agree that all upper (hilly) parts of the Consent Area, including all mine and tailings storage locations, are ecologically significant (s.6(c) Resource Management Act 1991).

11. Vegetation and habitat in the Consent Area are degraded. The principal historic causes of vegetation loss have been human induced: mining, pastoralism, plant and animal pests, and fire. The most important cause of recent vegetation loss in Central Otago has been land development, notably conversion to vineyard, orchard, pasture, settlement or mine/dump.

12. The MGL assessment states that indigenous biodiversity (except woody species) within the Consent Area is generally in decline and that (without intervention) most native

[3] As mapped in Document C.03. It includes the proposed Ardgour Restoration Area.

species will continue to decline. No compelling evidence is presented to support those assumptions. I have been surveying sites in dryland ecosystems for more than 20 years. In my experience, indigenous vegetation at these sites – despite its degraded appearance – is generally stable and at many sites gradually recovering.

13. The extant naturally occurring vegetation/habitat at this location is adapted to climate extremes (high annual water deficits and extreme seasonal temperatures). It is vulnerable to the anticipated effects of climate warming (drier conditions and more frequent storm events). This vegetation/habitat has a very localised distribution. It is distinctive nationally and is characteristic of the Dunstan Ecological District.

14. MGL have engaged many experts, undertaken extensive survey work, and provided many reports to describe and assess the ecological values of the Consent Area. This impressive body of information is important for assessment of the effects of the activity. However, the sheer bulk of material has been a challenge for me as a reviewer, especially considering the constrained time frames of the Fast-Track Approvals Act 2024 (FTAA).

15. MGL's terrestrial ecological data are incomplete, notably with respect to 'threatened' and 'at risk' (TAR) 'spring annual' plant species and non-vascular (moss and lichen) species. Surveys of these species are difficult, time-consuming and require specialist skills. Substantial parts of the DDF and wider Consent Area have not been adequately surveyed.

16. Additional spring annual survey work commissioned by MGL in spring 2025 did not cover substantial parts of the DDF and the wider Consent Area (due to lambing). Details of the geographic extent of that survey, or analysis of the survey data, have not been provided to me by MGL, despite repeated requests. It is not possible to adequately assess the effects of the activity on spring annual species without that information.

17. MGL also commissioned a survey of non-vascular flora. MGL advise that the survey is complete but have not released any data or report arising from the survey. The absence of those data further constrains the assessment of ecological values or effects.

18. Despite these data limitations, populations of at least 48 TAR species are present within the DDF. MGL acknowledge that this is "an exceptionally high number" of TAR species. One of those species (the spring annual, *Ceratocephala pungens*) has the highest possible threat status (nationally critical). The survey data show that the DDF is the

national stronghold for this species. MGL's vegetation survey indicates that 87% of the 610ha DDF supports 'very high' or 'high' value vegetation communities.

19. The MGL assessment uses the Environment Institute of Australia and New Zealand (EIANZ) ecological assessment guidelines (EcIAG) to determine ecological value and magnitude of effects. These guidelines have fundamental limitations for the assessment of effects on areas of vegetation and habitat, notably the division (fragmentation) of areas into smaller units (plant communities or species) for assessment, the averaging of values and effects across those fragments, and the assessment of values against an 1840 baseline. MGL's assessments of the magnitude of effects – and consequent compensation – are constrained by reliance on the EcIAG.

20. The proposed mining activity will result in the net loss of approximately 600ha of ecologically significant vegetation/habitat, including the stronghold of a threatened (nationally critical) plant species. MGL acknowledges that loss. MGL's experts advise that, due to the vulnerability and irreplaceability of the affected indigenous vegetation and species, it is not possible to compensate for that loss. I concur with that view.

21. The Application does not consider all options to avoid or minimise adverse effects, notably underground mining as an alternative to open pit mining. The expert advice does not assess the effects of underground mining. The magnitude of the effects of both mining methods should be assessed, to enable a robust weighing of the ecological effects against the economic benefits.

22. The effects management proposed by MGL is extensive. It includes rehabilitation of the DDF and the Mine Regeneration Zone (MRZ), establishment of two fenced pest-exclusion sanctuaries, protection and management of the Ardgour Restoration Area (ARA), cushionfield research, and biodiversity outcome monitoring.

23. Rehabilitation proposals, set out in the Landscape and Ecological Rehabilitation Management Plan (LERMP), appear well reasoned and are based on experience at other mine sites. However, the dryland ecosystem of the BOGP poses challenges not encountered at other mine sites. In that respect, the LERMP will be experimental, and the outcomes of the proposed rehabilitation are uncertain, as acknowledged by MGL.

24. The two proposed pest-exclusion sanctuaries include rockland and shrubland habitat favoured by lizards. Only relatively small areas of cushionfield (spring annual habitat) are

incidentally included. The sanctuaries will principally benefit lizards. Fenced sanctuaries are costly to maintain, so long-term funding will be required for long-term protection of those values.

25. The proposed management of Ardgour Restoration Area includes removal of cattle, managed grazing of sheep, plant and animal pest control, restoration planting, and cessation of vegetation clearance, oversowing and fertilising. Evidence presented by MGL (notably aerial images) show that the recovery of woody vegetation is occurring naturally on Ardgour Station. The proposed management actions will help secure and enhance that natural recovery.

26. The Ardgour Restoration Area includes areas of cushionfield and populations of spring annual species. However, the management actions – as presently proposed – do little to enhance or increase the extent of those spring annual habitats. Those cushionfields have not been adequately surveyed or mapped.

27. The compensation actions – while extensive – will not adequately address the loss of cushionfield/spring annual habitat in the DDF. The restoration of cushionfield will be difficult; its success is highly uncertain. Other options, such as the protection and management of good quality cushionfield habitat elsewhere in Dunstan ED, will be necessary to address that loss.

28. The proposed Consent Conditions include objectives for the management of effects (compensation actions). Methods by which those objectives will be achieved are set out in numerous management plans. Those plans are detailed, technically complex, and (in some cases) inconsistent with other plans or potentially the Consent Conditions. If consent is granted, the Consent Conditions should provide for review and certification of those management plans.

29. The effects management actions required by the proposed Consent Conditions are extensive, detailed and complex. Monitoring the outcomes of those actions will require specialist advice. If the Panel is of a mind to grant consent for the BOGP, I recommend that a Biodiversity Advisory Group be established to assist the consent authorities with review of MGL annual reports and monitoring of compliance.

30. MGL propose a covenant to provide protection for the environmental outcomes of the compensation actions. Such a covenant should provide protection (in perpetuity) for all

parts of the Consent Area and for all indigenous biodiversity values present, including those inherent values that may be present regardless of the compensation actions. The covenant should be registered on the property title within 12 months of exercise of consent, as is typical for projects of this scale.

31. A covenant alone will not necessarily protect terrestrial ecology values in the long term. Protection and maintenance of indigenous biodiversity, especially that enhanced by restoration actions (such as fenced pest-exclusion areas), will require ongoing management and funding. A consent should include provision of adequate inflation adjusted funding to provide for long-term management and protection of indigenous biodiversity in the Consent Area.

Ecological Assessment Context

32. The Consent Area is on the northwest-facing slopes of the Dunstan Mountains in the upper Clutha River valley, Central Otago. It lies in the upper catchments of Bendigo, Dry and Shepherds creeks. Most parts of the Consent Area comprise schist (undifferentiated Rakaia Terrane Permian to Triassic TZIII schist). Glacial deposits (till) overlie schist on the lower slopes.[4]

33. The Consent Area lies within Dunstan Ecological District (ED).[5] Upper parts lie within the N4.1e Level IV Land Environment,[6] within which indigenous vegetation is depleted to less than 10% of its former extent nationally ('acutely threatened'); lower slopes lie within the N8.1b Land Environment within which indigenous vegetation is depleted to 20-30% ('at risk').[7] Therefore, any indigenous vegetation at lower-altitude parts of the Consent Area is critically important for maintaining indigenous biodiversity nationally.

34. Lower-altitude parts of the Consent Area comprise moraine, which is listed as an 'historically rare' (aka 'naturally uncommon') ecosystem[8] with a threat status of nationally

[4] https://data.gns.cri.nz/geology/
[5] McEwen, W.M. (editor) 1987. Ecological regions and districts of New Zealand, third revised edition (Sheet 4). New Zealand Biological Resources Centre Publication No.5. Department of Conservation, Wellington, 1987.
[6] Leathwick, J.; Wilson, G.; Rutledge, D.; Wardle, P.; Morgan, F.; Johnston, K.; McLeod, M.; Kirkpatrick, R. 2003. Land Environments of New Zealand. David Bateman, Auckland. 184p.
7 Cieraad, E.; Walker, S.; Price, R.; Barringer, J. 2015. An updated assessment of indigenous cover remaining and legal protection in New Zealand's land environments. NZ Journal of Ecology 39: 309-315.
[8] Williams, P.A.; Wiser, S.; Clarkson, B.; Stanley, M.C. 2007. New Zealand's historically rare terrestrial ecosystems set in a physical and physiognomic framework. NZ Journal of Ecology 31: 119-128.

'vulnerable'.[9] Indigenous vegetation or habitat of indigenous fauna occurring on naturally uncommon ecosystems (and on depleted land environments; above) is a national priority for protection[10] and meets the assessment criteria for an SNA.[11]

35. The intermontane basin within which the Consent Area lies experiences low precipitation (300-500mm/annum), cold winter temperatures, hot summer temperatures, and desiccating north-west winds, the effects of which are high annual water deficits and temperature extremes. The naturally occurring vegetation/habitat at this location is adapted to these climate extremes and is distinctive nationally. This vegetation/habitat has a very localised distribution; it is characteristic of the Dunstan ED.

36. This intermontane basin climate means that the vegetation/habitat is vulnerable to disturbances such as drought, wildfire, and pests. The anticipated effects of climate warming (drier conditions and more frequent storm events)[12] will likely exacerbate the magnitude of those effects.

37. The most important recent adverse effect on vegetation/habitat in Otago Region has been land development. Analysis of the Land Cover Database (LCDB) indicates increases in the extent of 'built-up area' (settlement) by 2101ha (21%); 'high producing grassland' by 6429ha (0.7%); 'orchard, vineyard or other perennial crop' by 1699ha (46%); and 'surface mine or dump' by 935ha (59%) between 1996 (LCDB1) and 2018 (LCDB5).[13] The land cover classes depleted by this land-use change are principally 'depleted grassland', 'low producing grassland', 'manuka and/or kanuka', and 'matagouri or grey scrub'. Most of the Consent Area is presently mapped as the 'depleted grassland' or 'low producing grassland' LCDB cover classes.[14]

38. Much of the recent conversion of land to 'built-up area' and 'orchard, vineyard or other perennial crop' in Otago Region has occurred in Central Otago. Substantial additional

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[9] Holdaway, R.J.; Wiser, S.K.; Williams, P.A. 2012. Status assessment of New Zealand's naturally uncommon ecosystems. Conservation Biology 26: 619-629.
[10] MfE and DOC, 2007. Protecting Our Places. Ministry for the Environment and Department of Conservation, Wellington.
[11] National Policy Statement for Indigenous Biodiversity 2023.
[12] Keegan, L.J.; White, R.S.A.; Macinnis-Ng, C. 2022. Current knowledge and potential impacts of climate change on New Zealand's biological heritage. NZ Journal of Ecology 46(1): 3467.
[13] Harding, M.A. 2022. Otago Region: analysis of recent changes to terrestrial indigenous ecosystems. Unpublished Contract Report. Otago Regional Council. 30p.
[14] https://lris.scinfo.org.nz/layer/123148-lcdb-v60-land-cover-database-version-60-mainland-new-zealand/

land-use change has occurred in Central Otago (including Dunstan ED) since the date of that analysis (2018).

Terrestrial Vegetation

39. Vegetation of the Consent Area is mapped and described as seven 'vegetation communities' in Matakanui Gold Limited (MGL) Vegetation Values Assessment[15]. I concur with the report's authors that the alternative of dividing vegetation into many communities can result in inaccurate mapping.[16] However, broad-scale vegetation mapping has limitations and should not be relied upon for analysis of biodiversity loss. For example, 'mixed depleted herbfield (cushionfield) and grassland' combines vegetation dominated by mat daisies (*Raoulia* species) and bare ground ('cushionfield') with that dominated by exotic grasses and herbs. The biodiversity value of 'cushionfield' is much greater than that of exotic 'grassland' or 'herbfield'.

40. I also concur that the Atkinson method[17] is appropriate for naming vegetation communities.[18] However, broad-scale vegetation mapping combines more than one vegetation class (grassland, herbfield, cushionfield etc.) in each 'vegetation community'. This limitation constrains the assessment of adverse effects (discussed below under 'Assessment of Ecological Effects') and the analysis of compensation action outcomes (discussed below under 'Biodiversity Offsetting and Compensation').

41. During my inspection of the Ardgour Restoration Area on 13th March 2026, I observed inaccuracies in the vegetation mapping, notably the inclusion of areas of 'native dominant scrubland' within areas mapped as 'mixed scrubland'. These inaccuracies appear to have arisen from a decision to simplify the mapped vegetation polygons.[19] Such inaccuracies constrain the analysis of compensation action outcomes.

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[15] Bendigo-Ophir Gold Project Vegetation Values Assessment. RMA Ecology, October 2025 (Document B.13).
[16] ibid, p18.
[17] Atkinson, I.E.A. 1985. Derivation of mapping units for an ecological survey of Tongariro National Park, North Island, New Zealand. NZ Journal of Botany 23: 361-378.
[18] Bendigo-Ophir Gold Project Vegetation Values Assessment. RMA Ecology, October 2025 (Document B.13), p18.
[19] Zac Milner, RMA Ecology, pers. comm.

42. Regardless of these limitations, MGL's analysis nevertheless indicates that 531ha (87%) of the 610ha DDF support 'very high' or 'high' value vegetation communities, and only 79ha of 'low' value vegetation communities.[20]

Indigenous Flora

43. Indigenous flora within the Consent Area is described in the MGL's Vegetation Values Assessment, which lists the 176 indigenous vascular plant species recorded within the Ecological Study Area (ESA). The ESA is more extensive than the Consent Area. These data are from the survey of 148 10m x 10m vegetation plots, though herbaceous flora was closely surveyed only at smaller 2m x 2m plots, comprising a total area of 768m^2. [21] That survey coverage may be insufficient for an area as extensive as the ESA, especially with respect to spring annual flora (see below).[22]

Non-Vascular Species

44. MGL's vegetation survey was of vascular plant species; it did not deliberately sample non-vascular species (mosses and lichens), though did record "non-vascular plant categories" (including rock , bare earth, standing water, leaf litter, woody debris, lichen, and moss).[23] In my experience, non-vascular species are an component of vegetation in dryland ecosystems, especially at modified or depleted sites.

45. In response to my first request for further data on non-vascular species, RMA Ecology concurred that non-vascular species are an important component of dryland vegetation and that those species were present in "almost all vegetation plots". RMA Ecology noted that locations supporting the highest incidence of non-vascular species also supported a high diversity of indigenous vascular species, including 'threatened' and 'at risk' (TAR) species. Therefore, RMA Ecology reasoned, locations at which non-vascular species are dominant are already recognised as ecologically important.[24]

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[20] Bendigo-Ophir Gold Project Vegetation Values Assessment. RMA Ecology, October 2025 (Document B.13), p94.
[21] ibid, p22.
[22] Walker, S.; Comrie, J.; Head, N; Ladley, K.J.; Clarke, D.; Monks, A. 2016. Sampling method and sample size affect diversity and indigenous dominance estimates in a mixed grassland community. *NZ Journal of Ecology 40*: 150-159.
[23] Bendigo-Ophir Gold Project Vegetation Values Assessment. RMA Ecology, October 2025 (Document B.13), p23.
[24] Letter from MGL to CODC, 19 September 2025.

46. I acknowledge that MGL's analyses conclude that vegetation across most parts of the DDF (the Hilly Landscape Unit; see below) has 'very high' ecological value. However, data on individual non-vascular species/taxa remain insufficient for a robust assessment of effects on species, and for the determination of appropriate effects management/compensation. In response to further requests for data on non-vascular species,[25] MGL advised that a survey of non-vascular species would be undertaken.[26] Those data were not available for the preparation of this Evidence.[27]

Threatened and At Risk Species (TAR)

47. MGL's vegetation survey recorded "at least 48" TAR species within the DDF.[28] The report notes that this is "an exceptionally high number" of TAR species.[29] In my experience, dryland ecosystems typically support high numbers of TAR species, partly because of the extreme conditions and partly because of the extent to which dryland ecosystems (especially depositional landforms) have been lost through land development.

48. An important finding of the vegetation survey is the presence of two 'threatened' species: *Ceratocephala pungens* (nationally critical) and *Myosotis brevis* (nationally vulnerable) within the DDF. Plants of these 'spring annual' species are very small, cryptic (difficult to see), and ephemeral (appearing for only a brief period annually). Therefore, effective surveys for these species are highly dependent on survey timing, survey effort (person hours), and the skill of the surveyors. These limitations are noted in the vegetation survey report, which acknowledges that the survey data are incomplete and likely to underestimate the population sizes and extents of these species.[30]

49. Further limitations of the survey data are that *Myosotis brevis* is not easily differentiated in the field from another indigenous species (*Myosotis antarctica* subsp. *antarctica*), which is listed as 'at risk' (naturally uncommon), and that a portion of the suitable habitat for

[25] Requests for Further Information, 3 October 2025 & 23 January 2026.
[26] Memo from MGL to CODC, 13 February 2026.
[27] Notes from the 18 February 2026 Workshop (received 17 March 2026) state "The Non-Vascular Report is currently in its final peer review stage and will be distributed to ORC, CODC, and DOC once complete".
[28] Bendigo-Ophir Gold Project Vegetation Values Assessment. RMA Ecology, October 2025 (Document B.13), p4.
[29] ibid, p59.
[30] ibid, p67.

these species had already been destroyed by access tracks and drill platforms at the time of the survey.[31]

50. To address these limitations, further targeted 'spring annual' survey work was undertaken by RMA Ecology in November 2024. Data from those surveys are presented in figures 22-25 (pages 71 & 75) in the vegetation survey report. Those data reveal that almost all locations of *Ceratocephala pungens* and most locations of *Myosotis brevis* recorded in this survey were within the DDF.

51. To provide further data on the distribution of spring annual species, MGL engaged Manaaki Whenua-Landcare Research (MWLR) to undertake targeted surveys of the Consent Area and other suitable habitats nearby during September and October 2025. Those surveys recorded *Ceratocephala pungens* in the DDF and on the lower north-west slopes of Ardgour Station, and *Myosotis brevis* and another spring annual species, *Myosurus minimus* subsp. *noave-zelandiae* ('at risk, declining') in the DDF, on Ardgour Station, and to the west of and adjacent to the Consent Area.

52. Data from the MWLR survey were provided (as a spreadsheet) by MGL on 9th March 2026. Further information about the timing and effort (person hours) of the survey, and shapefiles of the species' locations, were provided by MGL on 18th March 2026.

53. An important limitation of these data is that substantial parts of the DDF and adjacent areas of spring annual habitat were not covered by the MWLR survey, as access to lambing paddocks was not permitted. The geographic extent of the survey is still unclear, as MGL have not provided the MWLR report which describes and analyses the data, nor a map of the survey extent, despite repeated requests for that information.[32]

54. The distributions of populations of spring annual species within and outside the DDF are critical for an assessment of the effects of the activity. I assume that the MWLR report contains an analysis which would assist with that assessment. The unavailability of such an analysis severely constrains an assessment of the effects of the activity. Interpretation of existing data is further hampered by our limited understanding of the biology and national distributions of these spring annual species.

[31] Bendigo-Ophir Gold Project Vegetation Values Assessment. RMA Ecology, October 2025 (Document B.13), p67.
[32] Verbal requests at workshops, 18 & 19 February 2026; requests by emails 18 March 2026.

55. Even if the MWLR report or analyses were available, any effects assessment remains constrained by the absence of spring annual species' data from large parts of the DDF and the wider Consent Area. In that respect the Application must be regarded as incomplete. The DDF supports nationally important populations of 'threatened' spring annual species, notably *Ceratocephala pungens* and *Myosotis brevis*, but the data are insufficient to determine the magnitude of the effects of the activity on those species.

56. The Vegetation Values Assessment provides a comprehensive review of the national distribution and status of *Ceratocephala pungens* and concludes that the "population within the ESA is likely one of the most – if not the most – important strongholds, and is of critical importance to the long-term persistence of the species".[33] The MWLR survey results are consistent with the conclusion that the largest recorded population of this species nationally lies within the DDF. Data held by the Department of Conservation are consistent with those analyses.[34]

57. The available data indicate that areas of favourable habitat within the DDF, which were not covered by the MWLR survey, will also support high numbers of TAR spring annual species, including *Ceratocephala pungens*, thereby suggesting that ecological values within the DDF are higher than presently acknowledged.

Ecological Significance of the Site

58. Assessments of the ecological value and ecological significance of the ESA are provided in Section 4 of MGL's Vegetation Values Assessment. That report states that assessments are best undertaken for an area, rather than for each vegetation community. I concur with that approach and agree that the ESA comprises two broad areas for assessment, described as the 'Hilly Landscape Unit' and 'Basin Landscape Unit',[35] though I disagree with the boundary separating the two units (see below).

59. The Vegetation Values Assessment sets out criteria for the assessment of ecological value. I largely agree with those criteria and with the report's conclusion that the Hilly

[33] Bendigo-Ophir Gold Project Vegetation Values Assessment. RMA Ecology, October 2025 (Document B.13), p69.
[34] Rogers, G. May 2024. *Ceratocephala pungens* – a conservation management report for the Plant Species on the Brink programme for the 2023-24 growing season. Unpublished Report, Department of Conservation, 20pp.
[35] Bendigo-Ophir Gold Project Vegetation Values Assessment. RMA Ecology, October 2025 (Document B.13), p83.

Landscape Unit has 'very high' ecological value.[36] Almost all parts of the DDF lie within the Hilly Landscape Unit.

60. The Vegetation Values Assessment does not assess the ecological value of the Basin Landscape Unit, though assesses the ecological value of the community ('exotic pasture or herbfield') that comprises all parts of the unit, as 'low'.[37] The parts of the DDF that lie within the Basin Landscape Unit are ancillary activities, not the mined pits nor the tailings storage facility.

61. The Basin Landscape Unit includes the lower northwest-facing slopes within the Consent Area. Surveys undertaken since delineation of the unit boundary (the MWLR surveys) record the presence of spring annual species on those lower slopes. All hilly parts of the ESA/Consent Area (including the lower slopes on Ardgour Station) should therefore be included in the Hilly Landscape Unit and be regarded as having 'very high' ecological value.

62. The Vegetation Values Assessment concludes that the Hilly Landscape Unit is ecologically significant when assessed against Schedule 4 of the Operative Otago Regional Policy Statement 2019 and against Appendix 2 of the Proposed Otago Regional Policy Statement 2021. I concur with those conclusions but note that the Hilly Landscape Unit should include the lower northwest-facing slopes within the Consent Area (discussed above).

63. The Hilly Landscape Unit is, in my assessment, also ecologically significant when assessed against the criteria in Appendix 1 of the NPS-IB.

Assessment of Ecological Effects

64. MGL's assessment of ecological effects on terrestrial ecology is presented in a report prepared by Alliance Ecology (the **AEE**).[38] This document provides a comprehensive (223-page) assessment of ecological effects and effects management. In this Evidence I first discuss the method and underlying assumptions. I then discuss the assessment.

[36] Bendigo-Ophir Gold Project Vegetation Values Assessment. RMA Ecology, October 2025 (Document B.13), p90.
[37] ibid, 86.
[38] AEE (Document B.08).

EIANZ Guidelines

65. The AEE uses the Environment Institute of Australia and New Zealand (EIANZ) Ecological Impact Assessment guidelines (EcIAG).[39] These non-statutory guidelines have fundamental limitations for the assessment of ecological value and effects, notably the division (fragmentation) of areas into smaller units (plant communities or species) for assessment, the averaging of values and effects across those fragments, and the assessment of values against an 1840 baseline.

66. The Resource Management Act 1991 and NPS-IB require the assessment and protection of areas, not vegetation communities or species (fragments).[40] The EcIAG gives insufficient regard to the ecological functioning (ecological processes) of an area and ecological context (e.g., intactness, buffering, linkages). It considers ecological context, but only that of the fragment, not that of the area in its entirety.

67. The EcIAG averaging of values gives insufficient regard to high value attributes (species/habitats), as their assessed value is reduced by the presence of lower value attributes. For example, a fragment (e.g., vegetation community) may be assigned a 'moderate' value despite an attribute – such as rarity – having a high value. And, the NPS-IB requires protection of present-day biological diversity, not the biodiversity present at an arbitrary point in history.[41]

68. The practical effect of application of the EcIAG is a lower assessed value of an area (such as the DDF), a reduction in the assessed magnitude of the effects of the activity, and thereby a reduction in the scale and extent of the actions required to compensate for the residual adverse effects of the activity.

Ecological Condition

69. The AEE states that the ESA has been "heavily altered" and that "with the exception of woody vegetation cover, indigenous biodiversity within the landscape is generally in decline" and "without intervention, most native species will continue to decline".[42] I concur that substantial parts of the ESA have been altered, as is typical for most dryland

[39] AEE, p12.
[40] NPS-IB, Appendix 1.
[41] NPS-IB, Appendix 1, A (2).
[42] AEE, p13 & 14.

ecosystems in the eastern South Island. However, no compelling evidence is presented to support the assumption that there is an ongoing decline in ecological values.

70. I have been surveying sites in dryland ecosystems for more than 20 years. In my experience, indigenous vegetation at these degraded sites is generally stable and often gradually recovering. The principal cause of decline in ecological values of dryland ecosystems over recent years is land-use change, not ubiquitous plant and animal pests, nor day-to-day land management activities.

71. I have been monitoring vegetation change at grassland sites at seasonally dry locations (High Plains Ecological District) for 15 years. Results of that monitoring show that stonefield, lichenfield, herbfield and – to a lesser extent – grassland vegetation is stable, with little change in species composition or dominance (of both exotic and indigenous species). The main cause of vegetation change is disturbance.

72. The degraded appearance of dryland sites, such as those present in the Consent Area, belies their ecological value and stability. It cannot be assumed, from simple point-in-time observations, that the ecological values of those sites are declining.

Assessment of Ecological Value

73. The AEE assessment of ecological value is based on the mapped vegetation communities and species present within the ESA. The vegetation mapping has important limitations for effects assessment. It groups plant communities (e.g., 'herbfield and grassland' and 'shrubland and exotic grassland') into one 'community' and generalises their distribution, so that smaller areas of high value vegetation are included in mapped polygons of lower value vegetation.

74. A good example of this limitation is the assessment of 'exotic pasture or herbfield' as 'low' ecological value. The assessment acknowledges the presence of nine TAR species but notes that they are sparsely scattered within a vegetation community that includes "some areas comprehensively cultivated with no native component".[43] Uncultivated parts of a mapped polygon will have ecological values that are quite different from the

[43] AEE, p82.

cultivated parts. This distinction is critical for vegetation within an 'acutely threatened' Land Environment (all lower-altitude parts of the ESA and Consent Area).[44]

75. The accuracy of the vegetation mapping is insufficient for assessment of ecological value based on the mapped polygons. For example, a polygon of 'exotic pasture or herbfield' on the lower slopes of Ardgour Station includes extensive areas of spring annual habitat within which the MWLR survey recorded the 'threatened' (nationally critical) species, *Ceratocephala pungens*.

76. The AEE refers to a 'pre-human' (and occasionally 'historic') state for its assessment of 'representativeness'. The EcIAG baseline for assessment is 1840, not pre-human (nor historic). Nevertheless, the use of a pre-human/historic/1840 baseline is inconsistent with the NPS-IB and results in a lower assigned ecological value. For example, the representativeness value of 'native dominant scrubland' is assessed as 'moderate' even though the assessment describes that community as "highly typical of present-day native vegetation communities within the ED".[45]

Management of Adverse Effects

77. MGL's approach to the management of adverse effects is set out in the AEE; the details of implementation are described in numerous other documents and management plans.

Avoidance

78. The AEE lists measures to avoid or minimise/mitigate effects, including realignment of the Ardgour Rise Road, delaying mining of the Come in Time (CIT) pit, and positioning spoil sites and infrastructure away from high value habitats where possible. It notes that the "proposal has been designed to avoid adverse effects on terrestrial and wetland values to the extent practicable".[46] However, it does not mention an obvious alternative to avoid and minimise effects: the extraction of the gold by underground – rather than open pit – mining.

79. The adverse effects of underground mining on terrestrial ecology are likely to be substantially less than those of open-pit mining. The magnitude of the ecological effects

[44] Indigenous vegetation within an 'acutely threatened' land environment is a national priority for protection.
[45] AEE, p86.
[46] AEE, p96.

underground mining should be assessed so those effects can be weighed against the economic benefits of the proposed activity. My understanding is that weighing of those adverse effects (impacts) against the project's regional or national benefits is a critical consideration in this consenting process.[47]

80. Realignment of the Ardgour Rise Road is proposed to avoid the habitat of a 'threatened' (nationally critical) moth species (*Sporophyla oenospora*). The method for ecological assessment of the proposed road alignment was a "standard visual vegetation survey combined with photography".[48] In response to the identification of spring annual habitat the author states "I can only speculate that the habitat on some of those sunny aspects might be suitable for *M. brevis* at least".[49] That method, and the speculative response, are inadequate for an assessment of the effects of road construction on terrestrial vegetation and habitat.

81. The location of the proposed CIT pit supports 19.2% and 2.75% of the known populations of the 'threatened' spring annual species *Ceratocephala pungens* (nationally critical) and *Myosotis brevis* (nationally vulnerable) respectively.[50] MGL proposes to avoid mining the CIT pit (except for a 2.7ha 'early disturbance area') unless the spring annuals' research programme or further survey confirm that the populations of these 'threatened' spring annual species within the CIT pit footprint are less than 1% of the known populations within Dunstan ED. I support that proposal.

Remediation

82. Proposed remediation measures for the DDF are outlined in the Landscape and Ecological Rehabilitation Management Plan (LERMP). The ecological objective of the rehabilitation is to enhance biodiversity and ecological resilience within the DDF and the adjacent Mine Regeneration Zone (MRZ), although that within the MRZ is regarded primarily as offsetting/compensation.[51]

[47] Fast-Track Approvals Act 2024 s.85.
[48] Matakanui Gold Ltd, Ardgour Rise Re-Alignment Vegetation Survey & Botanical Biodiversity. Central Environmental Services, May 2025, p5.
[49] ibid, p6.
[50] AEE, p96.
[51] AEE, p101

83. I generally support the measures outlined in the LERMP. However, the adequacy of this remediation is uncertain due to its reliance on the 'vegetation communities' as described and mapped in the Vegetation Values Assessment (as discussed above).

84. Furthermore, the creation of dryland vegetation/habitat is challenging. The remediation measures are experimental. There is no certainty that those measures will result in replication/restoration of the vegetation/habitat lost through the mining activity. MGL concurs that "rehabilitation outcomes for cushionfields and spring annual herbs are highly uncertain and may result in losses"[52] and that "there is no demonstrated research that spring annuals can be rehabilitated or compensated for".[53]

Magnitude of Residual Effects

85. The AEE employs the EcIAG method to assess the magnitude of residual effects after measures to avoid, minimise or remedy adverse effects.[54] This assessment suffers from the same limitations outlined in the 'EIANZ Guidelines' and 'Assessment of Ecological Value' sections of this Evidence (above) and is therefore inadequate.

86. The assessment of magnitude of effect on notable flora is constrained by limited data on the population sizes of those species, as acknowledged in the AEE. However, I generally concur with the assigned level of residual effect on notable species, notably the 'very high' level of effect on cushionfield species.[55]

87. In summary, limitations of the EcIAG method, broad scale of the vegetation mapping, absence of comprehensive data on spring annual and non-vascular flora, and uncertainty over the success of remediation, mean that the magnitude of the residual effects of the proposed activity has not been adequately assessed and has most likely been underestimated.

Biodiversity Offsetting and Compensation

88. The proposed mining activity will result in the net loss of approximately 600ha of ecologically significant vegetation/habitat, and populations of TAR plant species, including the national stronghold of a 'threatened' (nationally critical) plant species.

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[52] AEE, p99.
[53] M Baber, Notes from Workshop Day 3 (Document 260218), p.2.
[54] AEE, p110.
[55] AEE, Table 22, p134.

Application of the effects management hierarchy means that residual adverse effects that are more than minor must then be addressed through biodiversity offsetting or compensation.[56]

89. MGL's experts conclude that only six values can appropriately be offset: that is, four vegetation community types and two lizard species.[57] The experts state that "for the majority of ecological values affected, offsetting was not considered feasible" and that, therefore, those effects must be addressed through compensation.[58] However, some of those biodiversity values are 'irreplaceable' or 'vulnerable' (as defined in the NPS-IB) and therefore not appropriate for biodiversity compensation.[59] MGL's experts agree that due to the vulnerability and irreplaceability of the affected indigenous biodiversity, it is not possible to compensate for that loss.[60]

90. Nevertheless, MGL's residual effects management measures "include ecological restoration and habitat enhancement across 2,219 ha of habitat within the ESA, in the landscape surrounding the mine footprint". The proposed benefits of those measures arise from an assumption that "the landscape is in a state of decline due to ongoing habitat loss and degradation".[61] I do not consider that the material presented by MGL's experts provides compelling evidence of a decline. Therefore, the magnitude of the benefits – if any – arising from some of the residual effects management measures are uncertain.

91. The residual effects management measures proposed by MGL include ecological restoration and habitat enhancement of the 889ha MRZ and the Ardgour Restoration Area (ARA), and establishment of two fenced pest-exclusion areas. The details of those measures are set out in numerous management plans, the objectives of which are included in the Consent Conditions. I provide comments on the Consent Conditions below. Detailed comments on the management plans should appropriately follow confirmation of the Consent Conditions.

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[56] NPS-IB, section 1.6.
[57] AEE, Appendix 3, p2.
[58] AEE, p141.
[59] NPS-IB, Appendix 4.
[60] M. Baber, Workshop Day 5 Discussion (as recorded in my notes).
[61] AEE, p142.

LERMP and MRZ

92. Rehabilitation proposals for the DDF and MRZ are set out in the LERMP. The rehabilitation methods appear well reasoned and are based on experience at other mine sites. However, the dryland ecosystem of the BOGP poses challenges not encountered at other mine sites. In that respect, the LERMP will be experimental, and the outcomes of the proposed rehabilitation are uncertain.

Fenced Pest-Exclusion Areas

93. The two proposed pest-exclusion sanctuaries principally address the loss of lizards and lizard habitat within the DDF. I cannot provide expert herpetofauna advice on the adequacy of the sanctuaries, though note that has been questioned by other – more qualified – experts.[62] The sanctuaries include rockland and shrubland habitat favoured by lizards. Only relatively small areas of cushionfield (spring annual habitat) are incidentally included. Sanctuary management is focussed on the protection of lizards, not spring annual flora.

Ardgour Restoration Area

94. The proposed management of ARA includes removal of cattle, managed grazing of sheep, plant and animal pest control, restoration planting, cessation of vegetation clearance, and cessation of oversowing and fertilising.[63] Evidence presented by MGL (notably aerial images) show that recovery of woody vegetation is occurring naturally on Ardgour Station.[64] The proposed management actions will help secure and enhance that natural recovery.

95. The ARA includes areas of cushionfield and populations of spring annual species. However, the management actions – as presently proposed – do little to enhance those spring annual habitats. The restoration proposals do not include an increase in the extent of cushionfields/spring annual habitats.

96. Cushionfields within ARA have not been adequately surveyed. In my observation, most of the cushionfields appear suboptimal habitat for spring annual species, due to

[62] Mandy Tocher, Notes of Workshop Day 5 (Document 260220), p.4-5.
[63] Ardgour Restoration Area Management Plan. Biodiversity Solutions Ltd, September 2025 (Document G.08).
[64] Bendigo-Ophir Gold Project Vegetation Values Assessment. RMA Ecology, October 2025 (Document B.13), p36.

modification or altitude. Protection and restoration of the ARA will not adequately address the loss of this vegetation/habitat in the DDF. The restoration of cushionfield, as proposed in the research plan, is highly uncertain. Protection and management of good quality cushionfield habitat elsewhere in Dunstan ED would be the best option to address that loss.

Consent Conditions

97. Detailed (preliminary) comments on Consent Conditions are provided at the end of this Evidence (Attachment 2). General comments are provided below.

Management Plans

98. The proposed Consent Conditions outline the objectives of remediation and compensation actions. Details of those actions are set out in numerous management plans. There is overlap between some plans. Actions in some plans have been superseded by actions in other plans. The actions in some plans are now inconsistent with later information, such as data from the MWLR survey. Other plans are in a draft form, such as the Ardgour Restoration Area Management Plan.

99. The management plans should be consistent with the Consent Conditions. Therefore, the Conditions should provide for a process by which the management plans are reviewed for their consistency with the final Consent Conditions and subsequently certified by CODC (and other consent authorities).[65] In my experience, that provision is typical for consents with complex conditions.

Biodiversity Advisory Group

100. The effects management actions for terrestrial ecology required by the Consent Conditions are extensive, detailed and complex. Monitoring the outcomes of those actions will be time-consuming, costly, and will require expert advice. I am familiar with the resources required through my ongoing involvement in monitoring compliance with consents for Oceana Gold Limited's Macraes Mine (Waitaki District/Dunedin City) and Waimea Water Limited's Waimea Dam (Tasman District).

[65] Conditions C16 to C21 (Document D.03) outline a process for consideration and certification of amendments to management plans. These conditions should be edited to include the requirement for all management plans to be reviewed and certified by CODC and/or ORC within 12 months of granting of a consent. The costs of that process should be borne by the Consent Holder.

101. Monitoring the terrestrial ecology outcomes of consent conditions requires specialist ecological advice, especially for outcomes in dryland ecosystems. In my experience, such monitoring is frequently ineffective due to the lack of expertise and/or staff turnover (loss of institutional knowledge) at the consent authority. Consequently, consent authorities become reliant on the reporting and advice provided by the consent holder. That advice cannot be regarded as independent and therefore cannot be relied upon to objectively assess compliance with Consent Conditions.

102. I am a member of a Biodiversity Technical Advisory Group (BTAG) that was established as a condition of consent for construction of the Waimea Dam (Tasman District). That group is an example of a method for monitoring compliance with ecologically complex consent conditions. The members of BTAG are technical experts, their costs are covered by the consent holder, and they report to the consent authority (Tasman District Council).

103. If the Panel is of a mind to grant consent for the BOGP, I recommend that a similar group be established as part of that consent.[66] The advantages of such a group are that it is independent of the consent holder and CODC, it comprises members with relevant ecological expertise, and it reports annually on compliance with consent conditions relating to indigenous biodiversity. The group would assist CODC (and other consent authorities) with compliance monitoring and its costs should be covered by the consent holder.

Long-term Protection

104. The Consent Conditions require registration of a covenant to provide protection for the "environmental outcomes for the following offset and compensation areas".[67] The Condition should be reworded so that it is clear that the protection is for all parts of the Consent Area (not just "outcomes") and for all indigenous biodiversity values present, including those inherent values that may be present regardless of the restoration and habitat enhancement actions.

105. The Consent Conditions presently propose that such a covenant will be established "prior to the cessation of mining operations".[68] That is insufficient. A

[66] Like the Iwi Advisory Group proposed by Condition C.23 (Document D.03).
[67] Condition 122 (Document D.01)
[68] Condition 122 (Document D.01).

covenant should be registered on the property title within 12 months of exercise of consent, as is typical for consents of this type.

106. A covenant alone will not necessarily protect terrestrial ecology values in the long term. Protection and maintenance of indigenous biodiversity, especially that created by restoration actions (such as fenced pest-exclusion areas), will require ongoing management and funding. The need for ongoing funding through "some form of non-wasting endowment fund" is acknowledged by MGL in the Ardgour Restoration Area Management Plan.[69] The Consent Conditions should require provision of sufficient inflation-adjusted funding to undertake those actions in perpetuity.

107. MGL has prepared and submitted as part of its application a Mine Closure Plan. The plan describes the strategies to be implemented by MGL to manage closure risks and to meet the proposed closure outcomes for the BOGP.[70] I am not qualified to comment on the technical details of the Mine Closure Plan but support its intent. A clear strategy for mine closure will help ensure that actions undertaken during the operation of the gold mine will be consistent with eventual mine closure and thereby reduce risks for long-term protection of indigenous biodiversity. The Consent Conditions should include a requirement for a Mine Closure Plan to be certified within 12 months of exercise of consent.

Conclusions

108. The Consent Area supports a dryland ecosystem which – although modified – supports a high number of 'threatened' and 'at risk' plant species. The DDF is the stronghold for a 'threatened' (nationally critical) species (*Ceratocephala pungens*). The Consent Area represents an ecosystem which has been substantially depleted in Central Otago. It has very high ecological value; it is an SNA.

109. MGL's data on indigenous vegetation and flora are inadequate. Dedicated spring annual flora surveys did not cover substantial parts of the DDF and Consent Area. Data from MGL's surveys of non-vascular flora (mosses and lichens) have not been provided.

[69] Ardgour Restoration Area Management Plan. Biodiversity Solutions Ltd, September 2025 (Document G.08), p60.
[70] Bendigo-Ophir Gold Project Mine Closure Plan. Mine Closure Management Pty Ltd, August 2025, p.iii.

The vegetation mapping is at a scale that is insufficient for assessing and managing the effects of the activity.

110. MGL's assessment of effects on terrestrial ecology is constrained by those insufficient data and by its reliance on the EcIAG. Nevertheless, all experts agree that some of the ecological values that will be lost are 'vulnerable' and 'irreplaceable'. Therefore, offsetting and compensation are not appropriate for those values. The effects management hierarchy requires that those effects be avoided. An obvious avoidance option (underground mining) has not been addressed by MGL.

111. The proposed management of effects assumes that terrestrial ecology values of the Consent Area are declining. No compelling evidence is presented to support that assumption. Recovery of indigenous vegetation is occurring naturally within the Consent Area. Therefore, the benefits of the compensation actions are overstated. Restoration of dryland ecosystems lost from the DDF will be difficult. It will be experimental and its outcomes highly uncertain.

112. If the Panel is of a mind to grant consent for the BOGP, compensation for the net loss of irreplaceable ecological values should be of a greater magnitude than that proposed by MGL. Further options include permanent protection and long-term conservation management of dryland vegetation/habitat that is under threat elsewhere in the upper Clutha basin (in addition to the Ardgour Restoration Area).

113. If consent is granted, the numerous management plans should be reviewed and certified by CODC to ensure consistency with Consent Conditions, a protective covenant placed over the Consent Area within 12 months of exercise of consent, a non-wasting fund established to help ensure ongoing implementation of management actions, a Biodiversity Advisory Group established to review annual reports and compliance with Consent Conditions, and a Mine Closure Plan certified within 12 months of exercise of consent.

Mike Harding
10 April 2026

Attachment 1

PRELIMINARY COMMENTS ON CONSENT CONDITIONS	
Bendigo-Ophir Gold Project Proposed Land Use Consent and Conditions for Activities within the Jurisdiction of Central Otago District Council (Document D.01)	
56 b iv	Change "sedum" to "other invasive weeds including *Sedum* species"
59-60	There is an un-numbered Condition between 59 and 60
? a	Insert "breeding activity or" so it reads "detect the presence and location of any breeding activity or active native avifauna nests".
61	Add "and certified/approved by CODC"
69 c	Replace with "With the survey effort per hectare determined by the quality of habitat and likelihood of the presence of notable invertebrate species, as determined by a SQEE"
92	Reword second paragraph "The objective of the ARAMP is to enhance woody ecosystems and the enhance and increase the extent of indigenous herbfield (cushionfield) vegetation to contribute to the compensation for residual adverse effects of the BOGP on indigenous biodiversity."
93	Add new condition: "e. A map which accurately delineates the location and extent of each vegetation type (mapped at a scale of 1:1000) at the commencement of the proposed management actions and within six months of exercise of the Consent. The accuracy of mapped units of 'indigenous herbfield (cushionfield)' and 'vegetation where woody species comprise >50% of ground cover' must be reviewed and approved by a SQEE." Also see Condition 109.
94 b	Replace "in monitoring transects in LMUs 1 and 2" with "as determined by the monitoring outlined in the Biodiversity Monitoring Plan". David Norton advises that the vegetation transect monitoring has been replaced by actions in the Biodiversity Outcome Monitoring Plan (see Condition 102).
94 d	Provide a definition for the term "average annual abundance".
94 e	Replace "monitoring transects" with "monitoring plots" (refer Biodiversity Outcome Monitoring Plan).
94 h	Replace the first sentence with "The extent of cushionfields throughout the Ardgour Restoration Area is greater than that mapped at the commencement of the proposed management actions."
94	Add new condition: "i. Plant and animal pest species are reduced in extent and numbers" (pest species and control priorities identified in the Mammalian Pest Management Plan and the Biosecurity and Plant Pest Management Plan; see Condition 97).
98	Add the words "and within six months of exercise of this Consent"
102 a	Replace "across 2,219 ha" with "in each of" (the offset/compensation sites, as listed).
102 c	Remove the words "best endeavours to"
102 c ii	Replace "one" with "two"
102 c iii	Replace "one" with "three"
109 a	Replace "managed landscape" with "consent area" (note that Attachment A will need to be revised following mapping)

111 b	Remove the words "either net gain outcomes can be demonstrably achieved" and remove the word "or" and add the word "each of", so that part of the Condition reads "…wider Dunstan ED and the population of each of the two spring annuals…"
111 b ii	Remove the second sentence
122	Replace the words "Prior to cessation of mining operations…" with the words "Within 12 months of exercise of this Consent…" Replace the words "in relation to environmental outcomes for" with the words "for indigenous biodiversity values of"
Schedule One Bendigo-Ophir Gold Project Common Conditions which apply to all of the Resource Consents within the Jurisdiction of the Central Otago District Council and Otago Regional Council (Document D.03)	
C12 e	Review of the Annual Ecological Monitoring Report will be an extensive exercise, requiring specialist advice. A separate advisory group should be established to undertake that work perhaps like the Iwi Advisory Group? (C.12(c)).
C13	The Conditions need to specify a process for certification of these many management plans (there are at least 12 ecological plans alone). The present versions of those plans (notably the Ardgour Restoration Plan) are drafts and have been superseded by other plans (e.g. the Biodiversity Outcome Monitoring Plan). These plans need to be reviewed, amended (if necessary), then formally approved (certified) once the Consent Conditions are finalised. This is anticipated by C17, but the certification process is not adequately described.
C21	20 working days is insufficient time. Certification will likely require input from specialists, the availability of whom is outside Council's control.
C22	The Condition describes the Annual Monitoring and Compliance Plan being "accepted by Council" but no process for acceptance (review) is outlined. In my experience, it is very unlikely that such a plan will be adequate for Council to simply accept.
C23	A similar group should be established to review and report on ecological matters, as proposed above and discussed in Evidence.
C34	Add "ecological restoration" to the primary objectives of the LERMP.
C46	Replace "later" with "sooner", with respect to payment to DOC. The sum should be inflation adjusted.