BEFORE THE CENTRAL OTAGO DISTRICT COUNCIL

Under	The Resource Management Act 1991
And	
In the matter of	an application by Ao Marama Limited for a residential development and subdivision at Earnscleugh, Alexandra (RC250259)

Evidence of Richard Andrew Ewans
(Principal Technical Advisor - Ecology)
on behalf of the Director-General of Conservation *Tumuaki Ahurei*
Dated 7 September 2026

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Executive Summary

1. This evidence was prepared in response to a proposal for subdivision of a site that has potentially ecologically significant values but has not been subject to an ecological assessment.

2. There is insufficient information provided to assess ecological effects. An ecological assessment is needed to understand potential impacts of future development enabled by the subdivision on indigenous biodiversity, such as on Threatened and At-Risk plants and native lizards.

3. Threatened plants have been recorded close to the property and could be located anywhere on it, even in modified and disturbed areas. At-Risk plants have been recorded on the property, but no accurate location information has been provided, and survey work was neither comprehensive, nor related to development areas.

4. Ecological survey effort needs to be directed to where it is most obviously required, i.e., to comprehensively assess the direct impacts of indigenous vegetation clearance within the affected areas (for house platforms, curtilage, ancillary structures, water infrastructure, new or widened roads/tracks, wastewater disposal fields, native planting areas etc.).

5. The QEII covenant proposal is a welcome and large positive effect of the application. However, it does not of itself offset potential losses of indigenous biodiversity, particularly of irreplaceable Threatened plants if they were to be found in the development area.

6. Therefore, residual adverse effects of this proposal on indigenous biodiversity could be more than minor.

7. In my opinion, due to the almost total lack of information on biodiversity values, it is not possible to create consent conditions that adequately or efficiently deal with potential residual adverse effects.

8. Therefore, an ecological assessment should be carried out and a revised AEE submitted prior to any decision on this application.

9. The native planting species list needs refinement to be considered ecological restoration and therefore as a positive effect.

Introduction

1. My full name is Richard Andrew Ewans.

2. I have been asked by the Director-General of Conservation ("DG") to provide ecological evidence on the potential effects of the proposal by Ao Marama Limited for a subdivision at Earnscleugh, Alexandra.

Qualifications and experience

3. I am currently employed by the Department of Conservation (DOC) as a Principal Technical Advisor – Ecology in the national Flora and Ecosystems Team, which is a component of the Terrestrial Biodiversity Unit. Part of my role is to provide indigenous flora and ecosystems expertise for resource management processes.

4. Prior to joining DOC, my two most recent roles were Partnerships Lead – Biodiversity for the Otago Regional Council (January 2022 to June 2023), and Biodiversity Advisor (council ecologist) for the Dunedin City Council based in the planning team (October 2018 to January 2022).

5. I hold a Bachelor of Science (Hons) First Class in Plant Ecology from the University of Otago (2000).

6. From January 2000 until June 2004, I worked as an independent ecological contractor in Dunedin. From July 2004 until August 2013, I was employed as a Biodiversity Ranger - Monitoring for the Department of Conservation (DOC) in the Fiordland District Office. From September 2013 until February 2014, I worked as an Ecologist for Contract Wild Animal Control Limited in Te Anau. From March 2014 until September 2018, I ran my own ecological consultancy called Eco-South, based in Dunedin.

7. My work experience includes providing botanical expertise on programs such as the Waitaki and Mackenzie Districts Significant Natural Areas assessments, South Island High Country Tenure Review (Otago), the Mackenzie Basin braided riverbeds vegetation survey, Environment Southland Wetland GIS Inventory and Monitoring Project, Hunua Ranges Watercare Catchment Restoration Project, monitoring of Oceana Gold Macraes mining ecological consent conditions, and Department of Conservation Tier 1 monitoring (a national biodiversity monitoring program).

8. My previous role at DOC involved establishing, maintaining, and reporting on multiple vegetation outcome monitoring programs and providing expertise on threatened plants and ecosystems, and plant pests.

9. I have extensive experience working in indigenous non-forest ecosystems including drylands and wetlands and have described over 50 Significant Natural Areas (SNAs), mostly dryland sites, for Mackenzie and Waitaki District Councils in the Mackenzie Basin while subcontracting to a consultant.

10. I have completed over 200 Resource Management Act 1991 (RMA) ecological significance (or similar) type surveys on private land in the lower South Island and reviewed/critiqued many ecological assessments as part of consenting or compliance processes.

Code of Conduct

11. Although this is a Council hearing, I confirm that I have read the code of conduct for expert witnesses as contained in clause 9 of the Environment Court's Practice Note 2023 ('the Code'). I have complied with the Code when preparing my written statement of evidence.

12. For the avoidance of doubt, in providing this evidence as an expert witness in accordance with the Code, I acknowledge that I have an overriding duty to impartially assist the Panel on matters within my area of expertise. The views expressed are my own expert views, and I do not speak on the DG's behalf.

13. The data, information, facts and assumptions I have considered in forming my opinions are set out in my evidence to follow. The reasons for the opinions expressed are also set out in the evidence to follow. This includes, where relevant:

    a. why other alternative interpretations of data are not supported;

    b. any qualification if my evidence may be incomplete or inaccurate without such qualification;

    c. any knowledge gaps and the potential implication of the knowledge gap;

    d. if my opinion is not firm or concluded because of insufficient research or date or for any other reason;

    e. an assessment of the level of confidence and the likelihood of any outcomes specified in my conclusion.

14. Unless I state otherwise, this evidence is within my sphere of expertise, and I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

Scope of evidence

15. I have been asked to provide evidence in relation to the DG's submission on the potential effects of the proposal by Ao Marama Limited for a residential development and subdivision at Earnscleugh, Alexandra.

16. My evidence addresses the following issues:

    a. The adequacy of the ecological information provided;

    b. Importance of indigenous vegetation in Central Otago drylands;

    c. The potential adverse effects of the proposal on flora;

    d. Positive effects, including ecological restoration planting.

17. For clarity, my evidence does not address effects on, or proposed mitigation for, indigenous fauna.

18. To assist the Panel, in my evidence I distinguish between:

    a. The 'property' (209.6 ha) Lot 1 DP590633.

    b. The 'development area' as the proposed Ao Marama subdivision lots, roads, tracks and other areas directly affected by subdivision enabled activities.

    c. The 'proposed covenant' (182 ha).

Material Considered

19. In preparing my evidence I have read and relied upon the following other documents:

    a. Ao Marama. 2025. Assessment of Environmental Effects Lots 1-8 being a proposed subdivision of Lot 1 DP590633. Hereafter referred to as the 'AEE'.

    b. Brief of evidence of Philip Hunter Murray on behalf of Ao Marama Limited, dated 4 September 2026.

    c. Central Otago District Council (hereafter referred to as 'Council') Section 42A Report for Application RC 250259. Hereafter referred to as the 'S42A Report'.

d. Other documents and publications referenced within this evidence.

20. I have not undertaken a site visit because DOC was not made aware of the hearing timing until 27 August 2026 and I was not available for the short time between then and when evidence was due. In addition, it would be expected that an ecological assessment would be available from the applicant prior to a site visit, and the timing of a site visit should occur when ecological values such as 'spring annuals' are most likely to be present (October/November).

Indigenous flora recorded on the property and nearby

21. The application lists the following ecological values based on a preliminary walk-through assessment by the local QEII Trust representative in 2024:

a. Six At-Risk-Declining[1,2] plant and lichen species; scabweed (*Raoulia australis*), *Raoulia beauverdii*, *Rytidosperma buchananii*, *Olearia lineata*, *Pimelea aridula* subsp. *aridula* and *Xanthoparmelia semiviridis* (a lichen).

b. "Many areas including tors, rocklands, denuded pavement areas and protected gullies retain….a range of common native shrub, herb, cushion plant, fern and grass species…"[3]

22. Similar habitat around Alexandra (and elsewhere in Central Otago) supports numerous rare species, with several records of Threatened and At-Risk species recorded within Blackmans Conservation Area, located less than 1.5 km from the site: saltgrass (*Puccinellia raroflorens*) and *Ceratocephala pungens* both Threatened – Nationally Critical; *Myosotis brevis* (Threatened – Nationally Vulnerable); pin cushion (*Colobanthus brevisepalus*) and New Zealand mousetail (*Myosurus minimus* subsp. *novaezelandiae*), both At-Risk – Declining.

23. All of the species recorded at Blackmans Conservation Area could be present on the property and within development areas (except for saltgrass which would only be present if inland saline ecosystems were present). Some of the

[1] de Lange P, Blanchon D, Knight A, Elix J, Lücking R, Frogley K, Harris A, Cooper J, Rolfe J. 2018. Conservation status of New Zealand indigenous lichens and lichenicolous fungi, 2018. New Zealand Threat Classification Series 27. Department of Conservation, Wellington. 64 p. Conservation status of New Zealand indigenous lichens and lichenicolous fungi, 2018

[2] de Lange PJ, Gosden J, Courtney SP, Fergus AJ, Barkla JW, Beadel SM, Champion PD, Hindmarsh-Walls R, Makan T and Michel P. 2024. Conservation status of vascular plants in Aotearoa New Zealand, 2023. New Zealand Threat Classification Series 43. 105 p. Conservation status of vascular plants in Aotearoa New Zealand, 2023

[3] Application attachment – Email from Rob Wardle (QEII Trust) to Phil Murray dated 19 September 2024.

species already identified on the property could be present in the development area.

24. Of particular note, is the potential occurrences of 'spring annuals'[4] (*Ceratocephala pungens*, *Myosotis brevis* and New Zealand mousetail). Annual species are rare in the New Zealand flora, and undeveloped low altitude areas of Central Otago are a stronghold for a group of three species which are becoming increasingly rare due to habitat loss and weed invasion. It is important that survey work by suitably qualified and experienced dryland botanists is carried out to identify potential populations of all three species in the development area, one of which is Threatened – Nationally Critical.[5]

25. Populations of spring annuals need to be avoided because they are irreplaceable, it is not currently considered feasible to carry out replanting or restoration of these species.

Importance of indigenous vegetation in Central Otago drylands

26. Habitat clearance and modification is a principal, ongoing cause of indigenous biodiversity decline in New Zealand.[6] There has been extensive loss of dryland ecosystems, and the remaining ecosystems of the inland South Island drylands are nationally significant.[7]

27. No representative examples remain of the pre-human forest types that once occupied the Central Otago basins and montane mountain slopes.[8]

28. It is noted that indigenous vegetation communities on the property are likely modified or induced by historic land clearance, pastoral practices and/or rabbit plagues. This is typical of Central Otago and eastern South Island dryland ecosystems generally.

29. Regardless, they are critical reservoirs of what little lowland Central Otago indigenous biodiversity remains, which has otherwise been extensively destroyed, heavily modified and continues to be threatened by development. For example:

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[4] Rogers G, Walker S, Tubbs M, Henderson J. 2002. Ecology and conservation status of three "spring annual" herbs in dryland ecosystems of New Zealand. New Zealand Journal of Botany 40: 649-669.
[5] *Ceratocephala pungens*, known from nearby.
[6] Walker S, Bellingham PJ, Kaine G, Richardson S, Greenhalgh S, Simcock R, Brown MA, Stephens T, Lee WG. 2021. What effects must be avoided, remediated or mitigated to maintain indigenous biodiversity. New Zealand Journal of Ecology 45(2): 3445.
[7] Walker S. 2019. Threats to New Zealand's dryland ecosystems. Threats to New Zealand's dryland ecosystems | NZES. Accessed 6 November 2024.
[8] Lloyd K. 2021. An overview of the state of indigenous biodiversity in the Otago Region. Contract Report No. 5704a prepared by Wildland Consultants Ltd for Otago Regional Council.

a. Only a tiny fraction of indigenous vegetation remains on the extensive post-glacial Upper Clutha inland outwash gravels and moraines (flats) between Cromwell and Wanaka.

b. The inland saline (salt pan) ecosystem, which is almost only found in Otago, primarily in the upper Clutha, Manuherekia valley and Maniototo, has been reduced to less than 1% of its extent since the 1960's/1970's.[9]

c. Approximately 40,000 ha of land cover classes comprising indigenous vegetation was lost between 1996 and 2018 in Otago Region.[10]

d. Areas identified as having high biodiversity values through Protected Natural Area Programme (PNAP) in Otago i.e., Recommended Areas for Protection (RAPs) continue to be lost. In Central Otago Ecological Districts (EDs), such as Maniototo, Lindis, Pisa, Manorburn and Dunstan, 514 hectares (ha) of indigenous vegetation from 13 RAPs was lost between 1989 and 2015.[11]

30. Remaining undeveloped lowland areas in Central Otago are nationally important for indigenous biodiversity because of the remaining drylands botanical values.

Potential adverse effects of the proposal on flora

31. Due to the complete lack of ecological information for the development area an assessment of actual effects cannot be undertaken.

32. Potential effects include indigenous vegetation clearance including of Threatened and At-Risk plant and lichen species, and significant indigenous vegetation in the development area. The native planting sites themselves may support Threatened and At-Risk plants which could be destroyed by revegetation planting.

33. This includes clearance of plants listed in Schedule 19.6B of the Central Otago District Plan e.g., *Ceratocephala pungens* and New Zealand mousetail.

34. The area of non-snow tussock indigenous vegetation enabled to be cleared as a permitted activity is also increased significantly as a result of subdivision into

[9] Allen RB, McIntosh PD. 1997. Guidelines for the conservation of salt pans in Central Otago. Science for Conservation 49. Department of Conservation, Wellington.
[10] Harding, M. 2022. Otago Region Analysis of Recent Changes to Terrestrial Indigenous Ecosystems. A report to Otago Regional Council, June 2022.
[11] Ibid.

8 lots, from 0.5 ha to 4 ha. Again, it is unclear if any indigenous vegetation is present in the development area.

Positive effects, including ecological restoration planting

35. Positive ecological effects of the proposal include a large proposed protective covenant, native planting/ecological restoration, and other actions briefly described in a Landscape Restoration Plan provided with the application.

36. The QEII covenant proposal is a welcome and large positive effect of the application. However, it does not of itself offset/mitigate for potential losses of indigenous biodiversity, particularly of irreplaceable Threatened plants if they were to be found in the development area.

37. The native planting described could be a positive effect i.e., ecological restoration if carried out appropriately and with refinement of the proposed species list.

38. For example, the species list does not specify what habitats each species would be planted into or if suitable habitat is available and contains several species not likely to be appropriate to the area e.g., *Hoheria glabrata* and *Fuscospora cliffortioides* (more western natural distributions). It is also noted that the threat classifications in the species list are not accurate.

39. In my experience, the proposed planting is likely a form of compensation (cf. offsetting). To that extent, Appendix 4 of the National Policy Statement for Indigenous Biodiversity (NPS-IB): 'Principles of biodiversity compensation' are relevant. These are similar to those for offsetting and I note in particular, Principle 2 that explains when biodiversity compensation is not appropriate, i.e., when the indigenous biodiversity is irreplaceable or vulnerable, and Principle 5, i.e., that the compensation design avoids displacing harm to other indigenous biodiversity in the same or any other location.

40. Some elements of the proposed Landscape Restoration Plan need more consideration. For example, letting exotic grass swards become long and rank as a rabbit control strategy will be detrimental to small herbaceous native plant species including any spring annuals present (as well as an obvious fire risk).

41. Similarly, and acknowledging that this is outside my area of expertise, the statement that an unspecified amount of control of mustelids and cats will allow recovery of bird and lizard populations is untestable because there is no

indication of control effort, so it simply may be ineffective. In addition, effective control of predators will increase numbers of their prey (rabbits and rodents) which may increase predation of lizards (by rodents).

42. Ongoing weed control is supported.

Conditions

43. No comment on consent conditions is provided here because there is no ecological information to underpin draft consent conditions.

Conclusion

44. In my opinion the application lacks critical ecological information on the presence of indigenous vegetation and abundance of Threatened and At-Risk plant species in the development area and therefore cannot adequately address the potential ecological impacts from the proposal.

45. Residual adverse effects of this proposal on indigenous biodiversity could be more than minor if irreplaceable Threatened plant species are found to be present in the development area.

46. In my opinion, due to the almost total lack of information on biodiversity values, it is not possible to create consent conditions that adequately or efficiently deal with potential residual adverse effects.

47. Therefore, an ecological assessment should be carried out and a revised AEE submitted and provided for comment prior to any decision on this application.

Richard Ewans

Richard Andrew Ewans

DATED this 7th day of September 2026