

EC O L O G Y P E E R R E V I E W

APPLICATION: RM240167- GODLEY PEAKS STATION HOMESTEAD

Prepared for Mackenzie District Council, Attention: Nick Boyes

3 March 2026

Applicant:	Godley Peaks Station Ltd
Application:	Construction of a residential unit (homestead) and accessory buildings on Godley Peaks Station beyond the identified Farm Base Area and within a Lakeside Protection Area.
Location:	Godley Peaks Road, Lake Tekapo
Zoning:	Operative Plan: General Rural Zone (GRUZ) – Te Manahuna/ the Mackenzie Basin Outstanding Natural Landscape (ONL), Lakeside Protection Area (LPA) and an Area of High Visual Vulnerability (AHVV).
Activity Status:	Non-Complying Activity Status



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<p>For any information regarding this report please contact: Scott Hooson Ecologist Associate Partner info@boffamiskell.co.nz</p>				
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1.0 Introduction

- 1.1 Godley Peaks Station Limited (**Godley Peaks Station**) have applied to Mackenzie District Council (**MDC**) for land use consent to construct a homestead (including accessory buildings and use) at Godley Peaks Station, Godley Peaks Road, Lake Tekapo, including associated earthworks, landscaping and approval of a Farm Biodiversity Plan (**FBP**) (RM240167).
- 1.2 An Ecological Report and FBP have been prepared by e3Scientific to support the Application (Attachments G and F of the Application, respectively).
- 1.3 Boffa Miskell Limited (**BML**) was engaged by MDC to complete a peer review of the Ecological Report and FBP. The scope of the peer review was to:
 - a) Complete a high-level, desktop peer review of the Ecological Report and FBP.
 - b) With regard to the FBP, ensure there are not more appropriate options to achieve better ecological outcomes and that its implementation won't result in unintended consequences.
 - c) Comment on the ecological merits of the proposed 'lakeface' mitigation planting below the proposed house site.
 - d) Review and comment on the proposed planting mix and numbers (Appendix D of the FBP).
- 1.4 The scope of this peer review does not include undertaking an independent assessment of the ecological values of the road alignment and farmhouse area and effects of the proposal. Further, because MDC have requested a high-level peer review of the Ecological Report and FBP, only brief explanations and reference material have been provided for many of the points discussed below.

2.0 Peer Review Methods

- 2.1 The e3Scientific Ecology Report and FBP were reviewed by the author of this document.
- 2.2 The following documents were referred to in preparing this memo:
 - The Ecological Report: e3Scientific (2024). *RE: Access Road and Ecological Assessment*. Letter dated 19 November 2024 (Attachment G to the Application).
 - The Farm Biodiversity Plan: e3Scientific (2024). *Godley Peaks Station Farm Biodiversity Plan* (Attachment F to the Application, dated 30 July 2024¹).

¹ The date on the cover page of the FBP is May 2024, but the date the Final version was completed was 30 July 2024 (refer to page i on the inside cover).

- The Assessment of Environmental Effects (AEE): Vivian+Espie (2024). *Application & Assessment of Environmental Effects*. Prepared for Godley Peaks Station Limited, 13 December 2024 (Report Ref: J2232).
 - Baxter Design (2024) *Landscape Plans and Simulations*. (Attachment E2 to the Application).
 - Milward Finlay Lobb (2024). Proposed Earthworks for New Dwelling and Access Godley Peaks Station (Pt Run 79), July 2024 (Attachment R to the Application).
 - Vivian+Espie (2026). *Response to Initial Landscape Recommendations* (incl. appendices). Dated 19 January 2026.
- 2.3 Because MDC's scope requested a high-level, desktop peer review, no site visits were undertaken by Boffa Miskell ecologists to inform the preparation of this memo.
- 2.4 The structure of the peer review of the Ecological Report and the FBP follows the structure of each of those documents.

3.0 Peer Review Comments

Ecological Report

General Review Comments

- 3.1 Overall, the Ecological Report is light on detail (six pages including photographs and figures, excluding Attachment A).
- 3.2 As described in the Introduction section of the Ecological Report, e3Scientific were engaged to complete an 'ecological assessment' of the road alignment and farmhouse area. While the Ecological Report describes the terrestrial ecology values within the access road alignment and farmhouse area and makes a conclusion on their ecological significance, it does not include an assessment of the potential ecological effects of the proposed upgrade to the access road or the effects of the construction and use of the proposed homestead and accessory buildings (nor does it state that there will be no effects on ecology values).

Methods (Section 2)

- 3.3 The Methodology (Section 2) is brief. A review of existing ecological information was completed, but the desktop resources that were reviewed are not listed.
- 3.4 A site visit was completed by e3Scientific on 27 September 2024. This is outside the generally accepted period for surveying dryland vegetation in the Mackenzie Basin. However, the information available suggests that almost of the vegetation within the access road and homestead footprint is either cultivated improved pasture or has been modified by prior disturbance. The timing of the survey would only be an issue in the area described in the Ecological Report as exotic herbfield (old river gravels), if the proposed upgrades to the existing access road extent beyond the existing footprint,

because if present, indigenous plants, including Threatened or At Risk species, are most likely to occur in this vegetation type.

- 3.5 Vegetation was assessed by a site walkover of the proposed development footprint and measurement of four 2 x 2 m vegetation cover quadrats; two within the access road near one-another within a cultivated paddock of improved pasture and a further two within the proposed house site footprint. It is unclear why plots were measured in these locations given they are within cultivated, improved pasture. Further, the plot size and overall coverage are insufficient to describe the vegetation. Measurement of a greater number of plots and larger plot sizes (i.e. 10 x 10 m) is recommended for herbfield / grassland plant communities (e.g. Walker et al, 2016).
- 3.6 The methods included establishing “*the presence and significance of plant species through site visits and the Department of Conservation’s threat classification for New Zealand indigenous vascular plants (de Lange, et al., 2018)*”. The Department of Conservation’s (DOC’s) New Zealand Threat Classification Series publications are used to determine conservation status of taxa. Significance is assessed using ecological significance criteria (as discussed below).
- 3.7 The methods also included establishing “*the likely presence and significance of native avifauna species through site visits, existing scientific knowledge and the Department of Conservation’s threat classification for New Zealand birds (Robertson, et al., 2021)*.” No survey methods to determine the likely presence of native avifauna species are described and the existing scientific knowledge (desktop resources) used are not listed.
- 3.8 The methods section does not mention whether lizard or terrestrial invertebrate values were considered, although Section 3.2 ‘Fauna’ does state that the habitat present is not suitable for indigenous herpetofauna species as it provides no cover.

Findings (Section 3)

- 3.9 Section 3 of the report describes the findings of e3Scientific’s site visit under the headings Vegetation, Fauna and Stream Crossing.
- 3.10 No indigenous plant species were observed within or directly adjacent the existing access road, the proposed new access road or the homestead site. Indigenous plant species would not be expected to occur in the cultivated, improved vegetation within the proposed new access road or the homestead site, but the proposal also includes upgrading an existing accessway, a small part of which crosses through a Site of Natural Significance (**SONS 66**) identified in the Mackenzie District Plan (**MDP**) (Figure 1).
- 3.11 Neither the AEE or the Ecology Report provide any detail of what the proposed upgrade to the existing access road will involve and the AEE only provides a brief description at Section 4.3:
- “It is proposed to access the site via an existing farm track to the north of the farm base area. This access alignment is shown on the Earthworks plan (Overall Plan) appended to the application as **Attachment R**. This farm track will need to be upgraded to service the proposed homestead.”*
- 3.12 In a letter provided by Vivian and Espie (dated 19 January 2026) Mr. Davis of e3Scientific noted the proposal is to retain the access as a gravel track in keeping

with the rural environment and confirmed there is no intention or requirement to seal the access road and only minor works would be required. However, it is unclear what upgrades are proposed and the locations of any works. This is of most relevance along the access road between Godley Peaks Road and the cultivated paddock.

- 3.13 The fact that the accessway is within a SONS is not identified in the Ecological Report. This SONS, which encompasses the Lower Cass River is described as follows:

“Open braided gravel riverbed with floodplains, swamplands and semi-stable delta. Breeding and feeding area for many wading birds including black stilt, wrybill, and caspian tern. Large breeding populations of banded dotterel and blackfronted tern. Marsh crake also present. Aquatic and terrestrial insects and native fish abundant. The uncommon Muehlenbeckia ephedroides found in the area. Area extended to include key area of Lepidoptera habitat.”



Figure 1: Part of the access road within Site of Natural Significance 66 (Source: Canterbury Maps Viewer²)

- 3.14 The ecological report does not include a plant species list, so based on the information provided, and noting that the site visit was completed outside of the generally accepted period for identifying indigenous plants in dryland habitats, it is difficult to have confidence in the conclusion that there are no indigenous plant species within or directly adjacent the proposed new access road. Potentially, several small and / or cryptic Threatened and At Risk plant species could be present in the exotic herbfield (old river gravels) vegetation type within the SONS including species such as fan-leaved mat daisy (*Raoulia monroi*), trailing bindweed (*Convolvulus verecundus*),

²

<https://mapviewer.canterburymaps.govt.nz/?webmap=cdc3592cd33341fd9efe89361f754b59&extent=1399870,5067900,1485000,5190500,2193>

leafless pohuehue (*Muehlenbeckia ephedroides*) and dryland button daisy (*Leptinella serrulata*).

- 3.15 With regard to avifauna, the report concludes that “*no suitable habitat is present for indigenous avifauna species given the disturbance regime of farm operations and only occasional foraging habitat is present*”. From the information available it appears that no formal surveys were undertaken for birds, and a list of bird species known to occur in the area from existing desktop sources and / or recorded during the site visit is not provided in the report. While it is likely that most of the habitats within and adjacent to the access road and proposed homestead footprint are of low value for avifauna, there is no information provided to confirm this. Further, the access road is close to the Cass River which is a SONS and is recognised as a breeding and feeding area for several Threatened and At Risk wading birds including black stilt, wrybill, and Caspian tern and large breeding populations of banded dotterel and black-fronted tern.
- 3.16 Review of the wetland mapping provided in the FBP and publicly available aerial imagery shows that the existing access road is within close proximity to and likely within 10 m of wetlands that are likely ‘natural inland wetlands’ under the NPS-FM 2020. The Ecology Report does not identify the presence of these wetlands and potential effects on these wetlands are not assessed.
- 3.17 From the limited information available in the AEE and Ecological Report on what the proposed upgrade to the existing access road will involve, it is unclear whether resource consent may be required under the National Environmental Standards for Freshwater (**NES-F**) and whether there are any actual or potential adverse effects on wetlands, including indirect hydrological effects. Further ecological assessment may be required following the process specified in the *Wetland delineation protocols* (MfE, 2020).
- 3.18 The Ecological Report notes that the existing access road will require culverting at coordinates E:1398800, N:5139083. However, the report does not describe the ecological values of the waterway to be culverted and there is no assessment of the effects of culverting, including fish passage, and no recommendations to manage any adverse effects. This issue was raised by Environment Canterbury in their submission. In a letter provided by Vivian and Espie (dated 19 January 2026) Mr. Davis has responded that he considers the installation of the culvert can comply with the permitted activity rules of the Regional Plan (Rule 5.137 and 5.141) for permitted structures and associated discharges.
- 3.19 The Ecological Report concludes that “*No indigenous vegetation was observed within the proposed disturbance areas and of the indigenous fauna species observed only one is classified as At Risk and is therefore exempt from SNA classification*”. However, the ecological report does not assess ecological significance, including against the statutory significance criteria specified in the MDP, Canterbury Regional Policy Statement RPS or National Policy Statement – Indigenous Biodiversity (**NPS-IB**) and a small part of the existing access road crosses an SNA (SONS) identified in the MDP.

Farm Biodiversity Plan

- 3.20 The AEE states that “*The construction of the dwelling is inextricably linked to the implementation of the biodiversity protections and enhancements. The production of a FBP is the most appropriate way to record and secure these biodiversity objectives*”

and demonstrates the Applicant's commitment to sustainable management at Godley Peaks Station.”

- 3.21 We understand that the applicant has volunteered that the long-term implementation of the FBP be secured by a condition of consent, which includes the biennial submission of an environmental report³.

General Review Comments

- 3.22 Overall, the FBP is a comprehensive document that generally describes the ecological context and existing ecological environment of Godley Peaks Station adequately. No formal surveys were undertaken for fauna, and in this regard the FBP relies on the findings in the *Godley Peaks Conservation Resources Report* (LINZ, 2003), which includes vegetation, bird, lizards, freshwater fish and entomological surveys completed over 20 years ago (during 2002 and 2003).
- 3.23 This peer review and the comments that follow below are, as per the scope of this review, focussed on ensuring there are not more appropriate options to achieve better ecological outcomes and that the implementation of the FBP won't result in unintended consequences. While the FBP was reviewed in its entirety, the review comments that follow are focussed on Section 4 of the FBP 'Godley Peaks Station Biodiversity Management'.

Godley Peaks Station Biodiversity Management (Section 4)

Retirement from Grazing (Section 4.2.1)

- 3.24 Section 4.2.1.1 states that the Mistake River catchment and part of the McCabes Block to the north of Godley Peak Station were identified as two areas of the property that can be retired from grazing to protect and enhance biodiversity values. Proposed new fencing will exclude stock from approximately 70 and 3 ha of the Mistake River catchment and McCabes Block, respectively. While retirement of these areas will be beneficial for biodiversity values, particularly the regeneration of palatable species, the area that will be retired from grazing at McCabes Block is small (approx. 3 ha) and e3Scientific note that the northern part of the block has experienced strong regeneration, presumably while it is still being grazed. Retiring these two areas from grazing will also likely result in increased exotic woody weed growth, particularly wilding conifers. Additional surveillance and control of woody weeds will be required in areas retired from grazing.

Restoration Planting (Section 4.2.3)

- 3.25 Restoration planting with indigenous species is proposed for some wetlands on the property and the perimeter of the pivot irrigators.
- 3.26 Section 4.2.3.1 of the FBP proposes planting a 2 m wide corridor around the perimeter of three centre pivot irrigators. The total length of the perimeter of the pivot irrigators is approximately 9.2 km and is estimated to involve planting approximately 19,200 plants. The expenditure to complete this planting is considerable. The purpose of planting the perimeter of the pivot irrigators, as identified in the FBP, is to enhance the biodiversity within the intensively developed outwash surface and reintroduce

³ For the first six years, and then every five years after that.

shrubland species to the alluvial outwash surface and provide a food source for birds. Although there is some ecological benefit to the proposed planting, for example providing ecological corridors / linkages, given the narrow width of the proposed planting, and its location within a wider landscape of cultivated improved pasture better ecological outcomes could be achieved elsewhere on the property by planting in other areas or undertaking additional animal pest control. For example, an opportunity identified in Appendix A of the FBP, but not included as a biodiversity management measure in Section 4 of the FBP is to remove willows and plant river margins with kowhai and shrubs (*Coprosma propinqua*, *Coprosma dumosa*, *Olearia bullata*, *Olearia odorata*). Because the FBP already proposes willow removal from the riparian margins of Mistake River and the block will be retired from grazing, planting the riparian margins of this river would likely achieve greater ecological benefits than planting the perimeter of the pivot irrigators.

- 3.27 Restoration planting in wetlands includes *Carex secta* and copper tussock, relatively large and tall sedge and tussock species respectively, as well as several species of shrubs. Some areas of sedgeland within wetlands on the alluvial outwash surface provide habitat for marsh arrow grass (*Triglochin palustris*), a species classified as Threatened – Nationally Endangered. It could be important to ensure that taller stature wetland species are not planted in wetland habitats where they may outcompete marsh arrow grass and other low stature indigenous wetland plant species.

Weed Control (Section 4.2.4)

- 3.28 Work to remove crack willow from the property has been identified as a priority and the objective of the willow control programme is to remove all existing mature trees and stands of willow by the year 2030. The importance of follow-up control and the monitoring of willow re-growth is also recognised in the FBP. This will likely need to continue beyond 2030.
- 3.29 Most of the control work will be undertaken using the cut and paste method (felling the tree / any growing shoots and applying herbicide to the stump). In some areas, other methods such as basal bark for larger trees and boom spraying dense areas of crack willow at Homestead Lagoon should also be considered⁴. Where willow trees are felled, as is proposed, disposal of trees will need to be carefully considered to ensure they do not re-sprout (for example placing them in a pile and burning them).
- 3.30 Wilding conifer control is also a priority for the station with the current extent of wilding conifers unconfirmed and scattered seedlings present across hillslopes. In relation to wilding conifers, the FBP states that “*Where saplings are present these can be removed by hand ensuring all roots are removed.*” And “*Control work of all woody weed species should be completed in spring-summer (September-Feb)*”. The roots of wilding conifers do not need to be removed, but all the green needles do. Control of wilding pines can be undertaken at any time of year, not just in spring-summer. The published Good Practice Guide⁵ for controlling wilding pines should be consulted for the best control methods.

Pest and Predator Control Work (Section 4.3)

- 3.31 Section 4.3.1.1. states that Godley Peak Station has an ongoing rabbit control programme that will continue to be funded appropriately by Godley Peak Station.

⁴ Grazon can be used where trees are not over water and Glyphosate can be used if trees are over water.

⁵ <https://www.wildingpines.nz/controlling-wilding-pines/good-practice-guides>

Continuation of this rabbit control programme will have continue to be of benefit for biodiversity values on the property, however I note that land occupiers are responsible for feral rabbit control on their property and feral rabbit populations are required to be kept at level three on the modified Mclean scale or below.

Monitoring and Reporting (Section 5)

- 3.32 In general, the monitoring and reporting section lacks detail.
- 3.33 Section 5.1 'Fencing' requires that "*Fences installed to exclude stock shall be monitored twice a year*". I recommend re-wording this to "*Fences around areas from which stock have been retired shall be monitored at least twice a year and following adverse events that could compromise the stock-proof status of those fences (e.g. rockfall, floods, fires).*"
- 3.34 Section 5.3 'Ecological Monitoring' refers to establishing quadrats where detailed ecological information including species present and cover shall be recorded. A standardised plot based methodology should be used to ensure the data collected is robust and will enable statistically significant trends to be detected over time.
- 3.35 Section 5.4 'Weed Monitoring' describes monitoring for crack willow and wilding conifers. Crack willow trees do not produce seed, so are unable to disperse via wind dispersed seed. I support the weed surveillance described, but the frequency of monitoring needs to be stipulated more explicitly (currently there is no monitoring frequency stipulated for areas mapped as significant indigenous vegetation and additional areas are required to be monitored on a "continuous schedule").
- 3.36 Section 5.5 'Objective Assessment of Ecological Performance' requires an environmental report to be collated by a suitably qualified ecologist every two years and submitted to Council in December. The environmental report should be prepared by a suitably qualified ecologist (rather than collated). The information to be recorded to determine if the objectives of the FBP are being met are vague. The FBP needs to have clear, measurable objectives against which to measure the success of the biodiversity management actions described in the FBP.

Proposed Planting Mix and Numbers (Appendix D)

- 3.37 Appendix D of the FBP includes a table with proposed plant species and numbers of each species for the three sites / environments for which restoration planting is proposed, namely wetlands, centre pivot perimeters, and the lakeface planting. Comments on the planting list are included below.

Wetlands Restoration

- 3.38 Section 4.2.3.1 of the FBP recommends enhancing wetlands and riparian margins with plantings of *Carex secta*, *Chionochloa rubra subsp. cuprea* (copper tussock), and re-introducing shrubland species such as *Coprosma propinqua*, *Coprosma dumosa*, *Olearia bullata*, *Olearia lineata*, bog pine (*Halocarpus bidwillii*) and toetoe (*Austroderia richardii*). The focus of these plantings, as stated in the FBP, is to improve nutrient cycling, slow the flow of water and increase biodiversity through utilising species that are often no long present.

- 3.39 With one exception, these species are considered ecologically appropriate and suitable for the purpose for which they have been selected. *Olearia lineata* is not ecologically appropriate for this location. This species occurs naturally in lowland to low montane habitats between 10–300 m a.s.l. and Godley Peaks Station is > 700 m. Further, it would not be practical to plant *Olearia lineata* in wetland areas within the footprint of pivot irrigators because this species can grow to up to 8 m in height. *Olearia odorata* could be considered as an alternative.

Central Pivot Perimeters

- 3.40 Section 4.2.3.1 of the FBP recommends planting the perimeter of the centre pivots to reintroduce shrubland species to the alluvial outwash surface and provide a food source for birds. Plant species proposed to be planted around the perimeter of the centre pivots are *Coprosma propinqua*, *Coprosma dumosa*, *Coprosma intertexta*, *Olearia bullata*, *Olearia lineata*, bog pine, toetoe, lowland flax / harakeke (*Phormium tenax*), mountain totara, kowhai (*Sophora microphylla*), and mountain celery pine (*Phyllocladus alpinus*).
- 3.41 As noted above for wetland restoration planting, *Olearia lineata* is not ecologically appropriate for this location. Mountain totara forest would previously have grown more widely on lower mountain range slopes, but is not recommended for planting around the perimeter of centre pivots. It is a slow growing species and is considered less likely to survive the open more exposed locations around the perimeters of the pivot irrigators.

Lake Face Planting

- 3.42 Godley Peak Station proposes to plant a total of 1,000 plants within the lake face matagouri shrubland community to enhance the biodiversity of the lake faces near the proposed house site.
- 3.43 Most of the shrub species proposed for the lake face planting are appropriate. However, *Olearia lineata*, bog pine, mountain totara and mountain toatoa are not recommended for planting in this location. As noted above, *Olearia lineata* is not ecologically appropriate for this location. We consider that the latter three species will be difficult to establish in this typically dry, exposed location. As noted in the Ecological Context section (Section 3.1) of the FBP, pre-human settlement, areas of mountain toatoa and bog pine shrubland / low forest were probably restricted to lower hillslopes. Alternative species that could be considered include other shrubs such as mountain wineberry, desert broom, and porcupine shrub as well as the climbing vines bush lawyer (*Rubus schmidelioides*), native jasmine (*Parsonsia capsularis*) and *Clematis marata*.
- 3.44 We agree with e3Scientific's recommendation in Section 4.2.3.2 to prioritise plantings in areas directly adjacent to existing stands of vegetation where gaps in the shrubland canopy occur.

House Site Planting

- 3.45 A proposed structural landscaping plan, prepared by Baxter Design Group Limited, was appended to the application as Attachment E. This included a proposed planting palette for the area around the proposed dwelling. The planting is proposed to use indigenous species only (with the exception of vegetable areas). The species initially proposed for planting were largely appropriate. However, importantly, mitigation

planting relied on two taller stature trees; mountain totara / Hall's totara (*Podocarpus laetus*) and mountain beech (*Fuscospora cliffortioides*) to mitigate visual effects. Although both species are well adapted to survival in impoverished soils, and high levels of climatic stress, both are typically forest species and pre-human settlement, forest is unlikely to have been present on the alluvial outwash surfaces at the location of the proposed homestead. Pollen evidence suggests that mixed grassland shrublands were present on intermontane basins floors and lower slopes with more closed low forest-scrub dominated by mountain beech, mountain toatoa, and bog pine at increasing altitude (e.g. McGlone 2001).

- 3.46 Our peer review advice on this previous planting plan was that mountain totara is slow growing and that planted young mountain beech trees are often intolerant of exposure to wind and hard frosts and their survival and growth may also be impacted at this location.
- 3.47 Following this advice, and other landscape planning recommendations provided by Boffa Miskell, Baxter Design Group Limited issued an amended design response (*Design Concept Amendment Drawing Set – Attachment 1 Design Response*). This amended drawing set includes:
- Additional areas of mountain beech and *Pittosporum eugenioides* which are proposed to be planted to the north of the building to reduce potential adverse visual effects.
 - Temporary shelter planting using *Pinus attenuata x radiata*, as shown on the 'Temporary Shelter Planting Plan'⁶ to be planted at the time of native planting to help shelter the natives and further screen the homestead until the natives have reached 2.5 m in height.
- 3.48 The use of ecologically appropriate indigenous tree species are generally preferred as visual mitigation planting from both an ecological and landscape character perspective. However, in this location where indigenous forest is unlikely to have occurred historically, no fast-growing indigenous tree species would have grown naturally that would achieve the visual mitigation outcomes sought within appropriate timeframes. In this context, the use of faster growing indigenous trees such as *Pittosporum eugenioides* is acceptable to achieve the desired landscape mitigation. Manatu / lowland ribbonwood (*Plagianthus regius*) is another fast-growing, wind and frost tolerant indigenous tree species that could be considered as an alternative or an addition.
- 3.49 In relation to the proposed use of *Pinus attenuata x radiata* to shelter establishing native plantings, in the context of the alluvial outwash surfaces where the homestead is proposed to be located, visually, exotic conifers are not out of place in the existing landscape which includes shelterbelts of exotic pine trees. While *Pinus attenuata x radiata* are not a sterile hybrid, in the Mackenzie Basin where spread of wilding pines is of substantial concern, I understand that the tight cones of this species are thought to limit seed dispersal and make it a better solution than other fast growing exotic conifer species.
- 3.50 In summary, although the use of ecologically appropriate indigenous tree species are generally preferred as visual mitigation planting from both an ecological and landscape character perspective, I consider that the planting palette and proposed

⁶ Page 4 of the *Concept Amendment Drawing Set*.

approach outlined in the *Design Concept Amendment Drawing Set* is an appropriate solution for this location and situation. This considers the requirement to provide planting that will achieve the appropriate visual effects management and the recommendations of Ms Pfluger, who prepared the landscape peer review on behalf of MDC.

4.0 Conclusions and Key Recommendations

- 4.1 The conclusions and key recommendations of this peer review are summarised separately for the Ecological Report and FBP below.

Ecological Report Conclusions and Recommendations

- 4.2 E3Scientific's site visit was completed outside the generally accepted period for identifying indigenous plants in dryland habitats and no plant species list is provided. Therefore, it is difficult to have confidence in the conclusion that there are no indigenous plant species within or directly adjacent the access road, and particularly within the exotic herbfield (old river gravels) within the SONS.
- 4.3 No survey methods to determine the likely presence of indigenous bird species are described in the Ecological Report, the desktop resources used to determine the presence of bird species likely to use habitats in the area are not listed, and a bird species list is not provided.
- 4.4 The existing access road is close to wetlands that appear likely to be 'natural inland wetlands'. The Ecology Report does not identify the presence of these wetlands and potential effects on these wetlands are not assessed. Depending on the type and location of proposed upgrades to the accessway, further ecological assessment may be required following the process specified in the *Wetland delineation protocols* (MfE, 2020).
- 4.5 Finally, while the Ecological Report describes the terrestrial ecology values within the access road alignment and farmhouse area, it does not include an assessment of the potential ecological effects of the proposed upgrade to the access road or the effects of the construction and use of the proposed homestead and accessory buildings (nor does it state that there will be no effects on ecology values).
- 4.6 If proposed upgrades to the existing accessway are minor and do not extend too far beyond the existing footprint, potential effects on ecological values are likely to be limited. However, if more major upgrades are proposed, additional ecological assessment will be required.

Farm Biodiversity Plan Recommendations

- 4.7 Fencing and retiring the Mistake River catchment and part of the McCabes Block from grazing are identified as a management measure to protect and enhance biodiversity values. Retirement of these areas will be beneficial for biodiversity values, however, removing livestock is likely result in increased exotic woody weed growth, particularly

wilding conifers. Additional surveillance and control of woody weeds will be required in areas retired from grazing.

- 4.8 The FBP proposes planting a 2 m wide corridor around the perimeter of three centre pivot irrigators. The expenditure to complete this planting is considerable. In our view better ecological outcomes could likely be achieved by undertaking this planting elsewhere on the property, for example, the riparian margins of Mistake River.
- 4.9 Restoration planting in wetlands includes taller stature wetland plants. Depending on the habitats in which plants will be planted, it may be important to ensure that taller stature wetland species are not planted in wetland habitats where they may outcompete marsh arrow grass and other low stature indigenous wetland plant species.
- 4.10 We support the control of willows as outlined in the FBP, however, in some areas alternative methods of control should be considered. Where willow trees are felled, disposal of felled trees will need to be carefully considered to ensure they do not re-sprout.
- 4.11 We also support the control of wilding conifers as outlined in the FBP. The published Good Practice Guide⁷ for controlling wilding pines should be consulted to ensure the most effective methods are used.
- 4.12 The Monitoring and Reporting section of the FBP lacks detail. The following is recommended in relation to monitoring and reporting:
- 4.12.1 The wording in Section 5.1 'Fencing' that requires "*Fences installed to exclude stock shall be monitored twice a year*" be amended to "*Fences around areas from which stock have been retired shall be monitored at least twice a year and following adverse events that could compromise the stock-proof status of those fences (e.g. rockfall, floods, fires).*"
- 4.12.2 In Section 5.3 where botanical monitoring is proposed, a standardised plot based methodology is used to ensure the data collected is robust and will enable statistically significant trends to be detected over time.
- 4.12.3 The frequency of weed surveillance described in Section 5.4 'Weed Monitoring' is stipulated more explicitly.
- 4.12.4 In Section 5.5 'Objective Assessment of Ecological Performance', the environmental report should be prepared by a suitably qualified ecologist (rather than collated).
- 4.12.5 Also in Section 5.5, the FBP needs to have specific, measurable objectives against which to measure the success of the biodiversity management actions described in the FBP.

Proposed Planting: Appendix D

- 4.13 Section 4.2.3.1 of the FBP recommends enhancing wetlands and riparian margins with plantings. *Olearia lineata* is not considered ecologically appropriate for this location. *Olearia odorata* could be considered as an alternative.

⁷ <https://www.wildingpines.nz/controlling-wilding-pines/good-practice-guides>

- 4.14 Section 4.2.3.1 of the FBP recommends planting the perimeter of the centre pivots (see our earlier recommendation in relation to the benefit of this planting). If this proposed planting is retained in the FBP, *Olearia lineata* and mountain totara are not considered appropriate for this location.
- 4.15 Most of the shrub species proposed for the lake face planting are appropriate. However, *Olearia lineata*, bog pine, mountain totara and mountain toatoa are not recommended for planting in this location. Suggestions for alternative species are provided earlier in this peer review report.

House Site Planting

- 4.16 Although the use of ecologically appropriate indigenous tree species are generally preferred as visual mitigation planting from both an ecological and landscape character perspective, I consider that the planting palette and proposed approach outlined in the *Design Concept Amendment Drawing Set* is an appropriate solution for this location and situation. This considers the requirement to provide planting that will achieve the appropriate visual effects management and the recommendations of Ms Pfluger, who prepared the landscape peer review.

5.0 References

- McGlone, M.S. 2001. The origin of the indigenous grasslands of southeastern South Island in relation to pre-human woody ecosystems. *NZ Journal of Ecology* 25: 1-15.
- Land Information New Zealand. (2003). *Godley Peaks Conservation Report*. Conservation Resources Report, April 2003.
- Ministry for the Environment. (2020). *Wetland delineation protocols*. Ministry for the Environment.
- 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.