



FAST TRACK APPROVALS Act 2024 (FTAA 2024) TECHNICAL ADVICE

Carter Group Ohoka Substantive Application

File No	FTAA-2606-1253
Date	22 September 2026
Memo To	Tim Johnston
From	Jade Christiansen, Eleanor Gunby, Roland Payne
Subject	Ōhoka subdivision FTAA – Terrestrial Ecology Peer Review

1. INTRODUCTION

1.1 Purpose of the Memo

The Waimakariri District Council (WDC) is current undertaking a review of the proposed Ōhoka Residential Subdivision in Canterbury, which has been submitted under the Fast Track Approvals Act 2024 (FTAA). Carter Group Ltd has proposed the subdivision, which would include the development of approximately 850 houses across 152 hectares at Ōhoka.

As part of the FTAA application, ecological assessments pertaining to wetlands, lizards, and avifauna have been prepared by Pattle Delamore Partners Ltd (PDP). In order to provide feedback on the potential terrestrial and wetland ecological impacts of the project, WDC has asked Wildland Consultants Ltd (Wildlands) to undertake a review of these assessments.

1.2 Documents reviewed

The scope of this project was to review the following documents and to provide feedback on the potential terrestrial and wetland ecological impacts of the project:

- Appendix-21 Wetland Assessment (Pattle Delamore Partners, 2026).
- Appendix-24 Lizard Management Plan (LMP) (Pattle Delamore Partners, 2026).
- Appendix-45 Proposed Wildlife Approval Conditions
- Appendix-25 Lexi Hunter Avifauna Assessment (Pattle Delamore Partners, 2026).

Other documents from the FTAA application were reviewed and their findings have been incorporated where relevant to the assessment of potential terrestrial and wetland ecological impacts of the proposed subdivision. These documents include:

- Ōhoka Residential Subdivision Assessment of Environmental Effects (AEE) (Novo Group 2026).
- Appendix-19b Aquatic Ecology Addendum (Stantec, 2026).
- Appendix-19a Aquatic Ecology Assessment (Instream, 2025).

1.3 Key areas discussed in this memo

- Herpetofauna values and proposed management.
- Avifauna values and proposed management.
- Wetland values and proposed management.

2. QUALIFICATIONS

Jade Christiansen prepared a review of the Lizard Management Plan and the Proposed Wildlife Approval Conditions. Jade is a Herpetologist at Wildlands and holds a Bachelor of Science and a Master of Science in Ecology and Zoology from the University of Otago. Jade has over five years of experience working with New Zealand lizards, particularly in the South Island. Jade is a member of the Society for Research on Amphibians and Reptiles in New Zealand and the New Zealand Herpetological Society, and is considered a suitably qualified herpetologist under the guidelines set out by the Department of Conservation (DOC) Lizard Technical Advisory Group.

Eleanor Gunby prepared a review of the Avifauna Assessment. For additional information about the avifauna and habitats on-site Eleanor also reviewed the Ōhoka Residential Subdivision AEE and the Wetland Assessment. Eleanor is an Avifauna Ecologist at Wildlands and holds a Bachelor of Science in Biological Sciences and a Master of Science in Ecology from the University of Canterbury. She has over six years of experience working with New Zealand's avifauna, mainly in the South Island. Eleanor is a member of the Ornithological Society of New Zealand.

Roland Payne prepared a review of the Wetland Assessment. For additional information about wetland values and proposed effects management Roland also reviewed the Aquatic Ecology Addendum and the Aquatic Ecology Assessment. Roland is a Senior Ecologist at Wildlands with 13 years' professional experience and holds a Bachelor of Science from the University of Canterbury and Master of Science Communication from the University of Otago. He has undertaken numerous wetland assessments throughout Canterbury including on several properties near or surrounding the site.

3. CODE OF CONDUCT

We confirm that we have all read and agree to comply with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023. This technical review has been prepared in accordance with that Code. In particular, unless we have stated otherwise, the opinions we express are within our areas of expertise (detailed in Section 2 above), and we have not omitted to consider material facts that might alter or detract from the opinions that we express.

4. KEY ISSUES

Lizard Management Plan

The LMP requires more information regarding the lizard species to which the management relates and the number of lizards potentially affected.. More information is required to interpret the applicant's assessment of the significance of the potential effects on lizards, in order to determine whether the proposed management measures are appropriate. Where information gaps or areas requiring further clarification have been identified, these are outlined in Section 5.0 below.

Avifauna Assessment

The Avifauna Assessment and AEE lack sufficient information around the potential use of the site by avifauna, including when assessing effects. Specific information gaps have been outlined in Section 5.0 below.

Wetland Assessment

The wetland assessment does not provide an assessment of the ecological values of the wetlands, or the level of effect on wetlands. This information is partially provided in the aquatic ecology assessments, but in no documents reviewed are the wetland values assessed against the Regional or District Plan criteria for ecological significance. This assessment would aid in evaluating the potential effects and the suitability of the proposed management actions. The wetland assessment of the pond should be reviewed in the context of the historic wetland extent, prior to its construction and the proposed wetland offset ratio of 1:1 is insufficient to address the inherent uncertainties and time lags associated with offsetting. Specific information gaps requiring further clarification have been outlined in Section 5.0 below.

5. INFORMATION GAPS/CLARIFICATION REQUIRED

Lizard Management Plan

Section 2.3. Roles and Responsibilities

The LMP states that the Project Herpetologist will be suitably qualified and experienced in the field of herpetology, with the Department of Conservation (DOC) responsible for determining whether an individual is suitably qualified. However, we note that no information is provided regarding the qualifications, experience, or relevant expertise of the PDP Project Herpetologist, or other personnel who may be responsible for implementing the proposed management measures. Without certainty on personnel, it is less likely that the LMP will be implemented effectively and in a manner that reduces impacts to lizards.

Section 3.2. Affected Lizard Species and Distributions

Desktop assessment

The references used in this section would benefit from being updated to reflect the most recent available scientific research. In particular, updated conservation status documents (Hitchmough et al., 2026; Lettink et al., 2026) were published prior to the preparation of the final version of the LMP. In these documents southern grass skink has been given a new scientific name *Oligosoma chionocholescens*; and all species have a regional threat classification.

The proposed Wildlife Approval conditions refer to both Canterbury grass skink and McCann's skink. However, no likelihood of occurrence has been provided for McCann's skink in the desktop assessment. Similarly, throughout the rest of the LMP, the only species referred to is Canterbury grass skink. Therefore, it is unclear as to whether McCann's skink are also being managed under

the LMP. An accurate assessment of the level of effect to lizards is not possible without this information. We do agree with the assessment for Waitaha gecko, which are considered unlikely to be present. Waitaha gecko are typically uncommon within the wider area due to lack of habitat, degradation of habitats and declines in their populations.

Southern grass skink and Canterbury grass skink have been considered as a singular entity “New Zealand grass skink” in the desktop assessment, because the site is located near the distributional boundary between the two species. These two species are known to occur sympatrically in some areas. Where both species are present, this may have important implications for management, including ensuring that measures such as release sites are suitable for both species (Principle 1; (Department of Conservation, 2019). Nevertheless, southern grass skink are only found south of the Waimakariri River (Lettink et al. 2026), and therefore are not be expected to be present at the site. On this basis, southern grass skink should not be considered further in the LMP, while existing “New Zealand grass skink” should be reassessed as Canterbury grass skink.

Appendix B – Lizard Identification includes an example of a southern grass skink. The LMP should be corrected to Canterbury grass skink as per our recommendation above.

Point 94 of the AEE references southern grass skink. This should be corrected as per our recommendation above.

Baseline Survey Findings

Principle 1 of DOC’s lizard mitigation guidelines (Department of Conservation, 2019) outline that it is essential that the quantity and quality of fieldwork carried out is sufficient. The survey effort appears adequate for the areas that were surveyed. However, only one night of spotlighting was undertaken for Waitaha gecko as opposed to the two originally proposed. This search effort is unlikely to have been sufficient to detect Waitaha gecko if these were present, as best practice systematic searching typically requires multiple capture occasions (Hare, 2012a). However, given the largely unsuitable habitat present on site for this species, and the low likelihood of the species being present, the rationale for undertaking surveys for Waitaha gecko is unclear.

While the survey effort for skinks was adequate in duration and trapping, it is unclear whether the conditions were appropriate for lizard emergence and activity. No weather or temperature data have been provided for the survey period. Including these records would provide supporting evidence that the surveys were undertaken under suitable conditions for detecting lizards. Surveys in sub-optimal conditions can reduce detection probabilities and can lead to issues regarding efficacy of lizard management.

Lizard Density Estimates

A moderate density skink population has been identified within the site through lizard surveys. However, no estimate of the total number of lizards potentially affected by the proposed works has been provided, as required by Principle 1 of DOC’s lizard mitigation guidelines (Department of Conservation, 2019), which means it is not possible to determine the effect of local population loss and therefore whether this has been appropriately addressed under the effects management hierarchy (NPS-IB, 2025). As stated in Section 8.0 of the LMP, more than 20 lizards are deemed a significant number for the site. If this is an indication of the number of lizards potentially affected by works, based on previous experience, this is likely a significant underestimation. It is difficult to determine indices of lizard abundance (Hare, 2012b), especially when surveys have low recapture rates; as such, lizard numbers are often significantly underestimated. Because 14 lizards were observed during the surveys, it should be expected that with more intensive trapping within the

lizard habitat present (as required by the proposed salvage programme), a significantly higher number of lizards would be detected than twenty. Further clarification on the total number of lizards to be affected should therefore be provided.

The (Wilson et al., 2017) reference used in this section does not appear to be directly relevant or applicable to this project. The reported results relate to southern grass skink and McCann's, neither of which have been detected at the site, and were obtained at Macraes Flat, Otago, rather than in Canterbury. It is also important to note that the reported density of 4,000 lizards per hectare was observed in highly managed sites with intensive predator control and high-quality habitat. Lizard densities at the proposed site are therefore likely to be considerably lower, given the unmanaged and highly modified nature of the habitat present.

Section 3.3 Potential Adverse Effects

A level of effect has been provided following the Environment Institute of Australia and New Zealand Guidelines (EIANZ; (Roper-Lindsay et al., 2018). As Canterbury grass skink have been detected on site and are classified as At Risk – Declining, they have a 'high' ecological value (Table 5; Roper-Lindsay et al., 2018). Therefore, following Table 10 of the EIANZ Guidelines, a 'moderate' level of effect is not possible. This should be reviewed to align with the methodology in the EIANZ guidelines, or justification provided for the assessment.

The site has not been assessed for significance against the relevant criteria set out in the local, regional and/or district plans (Canterbury Regional Policy Statement (Environment Canterbury, 2021) and/or Waimakariri District Plan (Waimakariri District Council, 2024)) and the National Policy Statement for Indigenous Biodiversity (NPS-IB, 2025) in the LMP or AEE (Department of Conservation, 2019, 2023a). Therefore, it is difficult to determine whether the effects are appropriately managed against the criteria in the NPS-IB.

Section 5.0 Lizard Salvage and Relocation

A relatively short salvage period has been proposed with trap checks undertaken for five days or until no lizards are captured for three consecutive days. Based on previous experience, this timeframe will likely be insufficient to capture a high proportion of a moderate density lizard population. Consideration should therefore be given to providing a contingency for the likely circumstance where high numbers of lizards continue to be captured at the end of the salvage period on day five (Principle 9; (Department of Conservation, 2019).

The proposed salvage methods cover a broad range of trapping techniques targeting different habitats. The inclusion of Artificial Cover Objects (ACOs) for arboreal lizard species is likely to be unnecessary as it is unlikely that Waitaha gecko are present on site (as per the desktop assessment).

Section 6.0 Relocation site

As the proposed relocation site is highly adaptable, the initial release area can be progressively expanded as development stages proceed and as lizard numbers dictate. It is not clear within the LMP what the trigger is to expand the release site or use the alternatively proposed release sites.

Additionally, although the entire release area is 3-hectares in size, it appears that only a 1-hectare area is proposed to be initially enhanced. This will replace c.27.8% of the habitat lost through development works and does not meet DOC's guidelines which state that where new habitat is being created to replace habitat lost, it should be of at least equivalent quality and quantity to that

which is lost (Department of Conservation, 2023b). Therefore, we recommend enhancing the entire 3-hectare area, regardless of the number of lizards salvaged. This would instead replace 83.3% of habitat lost to more closely meet DOC's guidelines.

One of the identified adverse effects in Section 3.3 is the cumulative effects of lizard habitat loss, fragmentation and degradation from past and future land use change. Similarly, it is unclear how only enhancing the 1-hectare area would result in the minimisation of this effect and contribute to no-net loss for indigenous lizards at the site, as per the NPS-IB.

As stated above, further clarification on total lizard numbers, and species should be provided to help determine whether both the proposed initial and wider release areas are of an appropriate size or composition suitable to support the relocated lizard population. In addition, the lizard species values at the release site have not been described, as required by Principle 1 of DOC's lizard mitigation guidelines (Department of Conservation, 2019). While a direct survey of the release site was not undertaken, some consideration should be given to the species and approximate densities of lizards likely to be present to help demonstrate the sites suitability to receive additional lizards.

Section 8.0 Contingencies

A contingency is in place for additional lizard species that may be encountered (any native species other than those discussed in the LMP). However, it is unclear what these species are.

Section 10.0 Lizard Monitoring

Principle 7 of DOC's lizard mitigation guidelines (Department of Conservation, 2019) requires monitoring to evaluate the success of the salvage operation, with clear objectives established prior to initiation of development activities and rigorous monitoring is essential to determine when contingencies are triggered. However, no clear monitoring methods or objectives have been provided to establish monitoring outcomes or determine whether the lizard salvage and release has been successful. Additionally, no adaptive management or contingencies are proposed should monitoring indicate that the salvage and release has been unsuccessful (Principle 9; (Department of Conservation, 2019).

Avifauna Assessment

Section 2.0 Desktop Survey

Sixty-nine avifauna species were detected during the desktop assessment, but a full list of these species was not included. Therefore, the desktop assessment provides extremely limited information about the species seen in the surrounding area that may occur on-site.

Section 3.1 Methodology

An initial field survey was conducted on 25 May 2026, and an additional survey was conducted on 3 September 2026. While the 3 September survey falls within the avifauna breeding season, it is extremely early in the breeding season. For most species, the main breeding season is from September to February inclusive, not August to February as stated. Due to this, the surveys are unlikely to fully capture the use of the site by birds during the breeding season.

During each survey, two five-minute bird counts (5MBCs) were conducted within the site and one at the adjacent Ōhoka Bush. Figure 1 shows that the on-site 5MBCs were both conducted close to hedgerows. The majority of the open pasture and wetlands (15 wetland locations were recorded in the wetland assessment) were not surveyed, nor was the artificial pond located near the centre

of the site. Ten minutes of on-site surveys during each site visit across a small spatial area is insufficient to fully evaluate the use of the site by avifauna.

During the second survey on 3 September 2026, a site walkover was also undertaken to identify potential nests and nesting behaviours. A survey track was not included within Figure 1, and the survey duration was not specified, making it unclear whether the effort was sufficient to achieve appropriate coverage of the site.

Section 4.1 Ecological Values

This section focuses on birds associated with forested areas and largely disregard species that could use open pasture and wetland habitats on-site for foraging and breeding. Section 4.1 notes that *“the site provides little to no suitable nesting habitat for wetland-associated species due to the absence of wetlands of sufficient size or quality”*, while Point 28 of the AEE states that *“...the site is unlikely to support threatened wetland-associated species for breeding or nesting”*. Many Threatened, At Risk, and protected avifauna species associated with braided rivers also use pasture for breeding and foraging. Tōrea/South Island pied oystercatcher (*Haematopus finschi*, At Risk – Declining) and pohowera/banded dotterel (*Charadrius bicinctus bicinctus*, At Risk – Declining) could breed and forage within the site. Tarapirohe/black-fronted tern (*Chlidonias albobristatus*, Threatened – Nationally Endangered) and tarāpuka/black-billed gull (*Chroicocephalus bulleri*, At Risk – Declining) could also forage on-site, particularly after heavy rainfall, along with many Not Threatened protected species. Because the values presented represent an incomplete assessment of avifauna habitat use, the Avifauna Assessment and AEE are likely to underestimate overall effects to avifauna and the management required to address them.

Section 4.2 Potential Effects

The discussion of potential effects and effects management excludes many species that could use open pasture habitat for foraging and breeding, including the species listed above.

Section 4.2.1 (habitat loss and displacement) states that the 10 metre wide proposed native planting buffer will increase habitat availability for indigenous species. This buffer will likely provide increased habitat for passerine species, but it will not provide habitat for ground-nesting avifauna.

Section 4.2.2 (disturbance of nesting birds) states that pūtangitangi/paradise shelduck (*Tadorna variegata*, Not Threatened) are likely to nest on-site, but does not discuss other species that may nest in the pasture and could be disturbed by earthworks and other construction activities. The potential for non-nesting birds to be disturbed is not currently included but should be discussed.

Section 4.2.3 (incidental injury or mortality) states that *“given the limited availability of suitable nesting habitat on the site and the absence of active nests during the surveys, the magnitude of this effect is assessed as low to moderate in the absence of mitigation”*. This disregards that the large areas of pasture present on-site provide suitable nesting habitat for ground-nesting avifauna, as discussed above. The 3 September site survey was conducted extremely early in the avifauna breeding season, so the absence of active nests during the survey should not be considered indicative of a lack of site use by nesting birds.

Section 4.2.3 also states that *“...all active native bird nests are protected under the Wildlife Act 1953”*. This statement is incorrect; most, but not all, native birds are protected under the Wildlife Act 1953, and some exotic avifauna are also protected.

The levels of effect for avifauna have been assigned following the EIANZ guidelines (Roper-Lindsay et al., 2018). Several At Risk – Declining species, including tōrea/South Island pied oystercatcher,

could be present on-site, meaning that the avifauna on-site have should have a high ecological value (Table 5 of the EIANZ guidelines; Roper-Lindsay et al., 2018). This means that a moderate level of effect is not possible (Table 10 of the EIANZ guidelines; Roper-Lindsay et al., 2018), but a low – moderate level of effect is listed.

Section 4.3 Overall Level of Effect

The levels of effects in Table 2 should be updated in line the EIANZ guidelines, as discussed above.

Section 5.0 Effects Management and Mitigation

The timeframe for when pre-construction nest surveys should be undertaken prior to works commencing should be stated. This is typically no more than eight days prior to works commencing. This section should also state that a new survey will be required if works cease on-site for more than eight days during the breeding season.

The statement “...if an active native bird nest is identified, works should cease within an appropriate species-specific buffer...” is incorrect. It should be updated to state that works should cease within the buffer zone for any active protected bird nest, reflecting that some exotic bird species are also protected under the Wildlife Act 1953.

Section 6.0 Conclusions

This section states that “the desktop assessment identified a range of notable bird species within the wider area. However, many of these species are associated with higher-value habitats, including wetlands, braided river systems, and indigenous forest remnants...”. Also, Point 608 of the AEE notes that “the site is of low avifauna value, and the proposal is unlikely to result in significant adverse effects, with native planting expected to provide some habitat enhancement over time”. These statements do not appear to consider the potential for Threatened, At Risk, and Not Threatened protected avifauna to nest on-site, including in open areas. As stated above, many species associated with braided rivers also use pasture for breeding and foraging.

Wetland Assessment

Section 4.2 Vegetation

This section provides an assessment of potential wetlands habitats on the site using the ‘rapid test’ as described in the National Policy Statement for Freshwater Management (NPS-FM, 2020). The last paragraph of this section (page 6) describes a pond, which it classifies as ‘artificial’ and not meeting the NPS-FM definition of a natural inland wetland. However, the assessment states the pond was ‘created through excavation in the mid 2000’s’ and ‘is spring-fed’ with ‘historic imagery from the late 1970’s suggesting it once formed the head of a small stream’.

In my assessment, this is only partially correct. Imagery of the site from the 1940s shows that this area was a wetland associated with a spring. Modification appears to have begun in the 1980s (vegetation clearance, channelisation/drainage) and continued through to the creation of the pond in 2008.

The NPS-FM wetland definitions excludes (most) deliberately constructed wetlands and wetlands that have developed in or around a deliberately constructed water body, since the construction of the water body. However, they do not exclude waterbodies that have been deliberately constructed/excavated within a wetland. The wetland assessment lists four plants surrounding the pond, three of which are Facultative Wetland species (Clarkson et al., 2021), and provides no

assessment of the soils or hydrology. Therefore, based on the information supplied, my assessment is that the pond would be better described a shallow water wetland and should be classified as natural inland wetland.

Table 1: Wetland features identified at the Ōhoka project site

This table provides a summary of the wetland vegetation and notes on their location and (sometimes) condition but does not provide an assessment of the ecological values or potential effects.

5.0 Conclusions and Recommendations

This section provides a brief general summary of the wetlands and their values, before recommending mitigation options for wetland loss. However, the wetland assessment does not provide an assessment of the ecological values of the wetlands, or a level of effect on wetlands. Therefore, the suitability of the mitigation options proposed cannot be evaluated. This information is partially provided the Aquatic Ecology Assessment (Instream, 2025) and (with more detail) in the Aquatic Ecology Addendum (Stantec, 2026). However, in no documents reviewed are the wetland values assessed against the Canterbury Regional Policy Statement (CRPS, Appendix 3 criteria) or the Partially Operative Waimakariri District Plan (POWDP, ECO-APP1), which uses the same criteria. An assessment against these criteria is considered particularly relevant as wetland habitat has been reduced to less than 20% of its former extent in the region and district. These are statutory documents and this assessment would better inform the identification and management of effects on ecology. Additionally, nowhere in the documents reviewed, was there an assessment of the potential downstream effects, on offsite wetlands, including the ecologically significant wetlands along Mill Road.

6. AREAS OF AGREEMENT

Lizard Management Plan and Wildlife Approval Conditions

We broadly agree that the overall lizard management approach is likely to be appropriate for the site, which is primarily farmland and is likely to support a moderate-density lizard population. The identified habitats and proposed management methods are generally appropriate and consistent with standard practice.

The Wildlife Approval conditions are suitable to cover the proposed activities at the site.

Avifauna Assessment

We agree that large numbers of highly Threatened wetland-associated species will not use the site for breeding and nesting, due to the limited size and quality of the wetland habitat. However, matuku-hūrepo/Australasian bittern (*Botaurus poiciloptilus*, Threatened – Nationally Critical) may occasionally use drainage channels on-site for foraging. Threatened and At Risk ground-nesting avifauna may still use the site for foraging and breeding, so further assessment of effects and effects management are required.

We broadly agree with the effects management and mitigation measures outlined in Section 5.0, with some previously discussed exceptions.

Wetland Assessment

I largely agree with the findings of the wetland assessment (apart from above noted exception of the pond) and the recommendations including the protection of springs, planting of stream margins and offsetting any loss wetland extent through the construction of new wetlands to achieve no net loss. I also agree that any constructed offset wetland should be informed by a detailed enhancement plan prepared by a suitably qualified ecologist.

However, the suggested offset ratio of 1:1 is well below the industry standard for wetland offsetting, which is 3:1. The offset ratio must be higher than 1:1 to address the inherent uncertainties and time lags, which are a critical component of offsetting.

Aquatic Ecology Addendum provides an assessment of wetland values following the EIANZ guidelines. I agree with the assessment provided in this addendum that the ecological value of the wetlands is at least Moderate and magnitude of effect on wetlands is Very High, with an overall High level of effect on the wetlands following the EIANZ assessment matrix. This (as noted in the Addendum) is due to significant and ongoing loss of wetland extent the Canterbury Plains, which means even degraded habitats can have Very High value. This addendum applies the effects management hierarchy when considering effects management. Therefore, it recommends that the higher value wetlands including those associated with springs are avoided, which is considered best practice. I also agree with this report's assessment that avoidance of the fragmented wetland habitats in dairy paddocks is not practical or recommended due to the hydrological changes that will occur with the development and the effects on these wetlands are better managed through offsetting.

7. RECOMMENDATIONS/CONDITONS

Lizard Management Plan and Wildlife Approval Conditions

It is recommended that the above information gaps are addressed within the LMP to clearly illustrate the effects to lizards and how the proposed management will result in a no-net-loss for indigenous lizards at the site.

Point 239 of the AEE appears to be a retained from an earlier version, prior to the completion of the lizard surveys. We recommend updating this point to reflect the current lizard management approach outlined in the LMP.

The Wildlife Approval conditions provide more clarity on the species which are being managed. However, this should be clarified within the LMP and the AEE to ensure consistency across all documents.

Condition 1.1 of the Wildlife Approval conditions states that all works relating to lizard fauna must occur in accordance with the Lizard Management Plan. This should include the most up to date version of the LMP that addresses the above information gaps.

Avifauna Assessment

It is recommended that the previously discussed information gaps are addressed, including:

- Providing a list of all species detected during the desktop survey.
- Discussing the possibility that Threatened, At Risk, and protected avifauna, such as tōrea/South Island pied oystercatcher and pohowera/banded dotterel, could forage and nest on-site.

- Updating the Avifauna Assessment to:
 - Updating the levels of effect in Table 2 to ensure they align with the EIANZ guidelines (Roper-Lindsay et al., 2018).
 - Include additional details around effects management, including specifying the timeframe within which pre-construction nest surveys must occur.
 - Specify the residual level of each effect following management.

Wetland Assessment

It is recommended that the previously identified information gaps are addressed, including:

- The assessment that the pond is 'not a natural wetland', in relation to the site history and former extent of wetland habitat at this location prior to the construction of the pond.
- The ecological values of the wetlands as assessed are assessed against the significance criteria in the CRPS and POWDP, due to wetlands being a habitat that has been reduced to less than 20% of its former extent in the region.

It is recommended that the conditions of consent include:

- The avoidance and setbacks (of minimum of 30 metres) from any ecologically significant wetlands or high value wetland habitat on the site.
- Any loss of wetland habitat on the site is offset (or remediated onsite) at a ratio of at least 3:1, to ensure there is no net loss of wetlands and to address the inherent uncertainties and time lags associated with offsetting.
- The consent holder engages a suitably qualified and experienced ecologist(s) to prepare a Wetland Management Plan for the enhancement and protection of avoided and offset wetlands. This plan should include:
 - The mapping and protection of any existing indigenous species, in the avoided wetlands (and other riparian areas).
 - The use of locally-sourced non-cultivar indigenous species.
 - The extent of planted area, spacing of plants, timing of planting and species to be used.
 - The maintenance approach, including weed control (how often, for how many years), infill/replacement planting (e.g. where plant survival rate is below 75%), and pest animal control (if required).
 - Monitoring requirements for the first five years to ensure success of planting with triggers and responses to monitoring outcomes.

8. OVERALL POSITION /CONCLUSIONS

Lizard Management Plan and Wildlife Approval Conditions

Overall, we consider that the LMP is broadly suitable for the site. However, key information regarding the lizard species affected, number of lizards likely to be affected, and the significance and level of effects is either unclear or absent from the LMP. Additional information is required to determine whether the management package adequately addresses potential effects and will achieve no net loss for indigenous lizards at the site.

The Wildlife Approval Conditions are suitable to cover the proposed activities at the site.

Avifauna Assessment

We do not believe that the Avifauna Assessment and AEE provide sufficient detail around the use of the site by avifauna. Additional information is required in this area. The discussion around the assessment of effects is broadly suitable, but it requires updating to reflect the potential for ground-nesting avifauna species to use the site for breeding.

Wetland Assessment

The wetland assessment provides a delineation wetland habitats on the site, but no assessment of wetland values or effects. This information is partially provided in the aquatic ecology assessments (Appendix 19a & b), but it is not clear how these values have been assigned and an assessment of the wetland values against the either the CRPS or POWDP criteria for determining ecological significance would provide a better understanding of the effects and suitability of the proposed management including areas for avoidance. The wetland assessment of the pond should be reviewed in the context of the historic wetland extent, prior to its construction and the potential impacts to hydrologically connected wetlands downstream of the site should be assessed. The currently proposed wetland off set ratio of 1:1 is insufficient and should be at least 3:1 to address the uncertainties and time lags associated with offsetting.

Overall, it is considered that effects on wetlands can be management through appropriate consent conditions that should ensure (at least) no net loss of wetland extent and a net gain in wetland ecological values.

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