

Before the Fast-track Panel

Under: Fast-track Approvals Act 2024

In the matter of: FTAA-2603-L003 – Tukituki Water Security – Land Exchange

Statement of advice: Wildland Consultant Ltd

Ecology

Independent consultants

3 September 2026

Introduction

1. Our full names are Sarah Margaret Budd, Nicholas Paul Goldwater, and Richard Goodwin Storey.

Instruction

2. We have been engaged to provide expert advice on behalf of the Department of Conservation (DOC) on the Tukituki Water Security Project Fast-track land exchange application.

Qualifications and Experience

3. We are independent ecological consultants at Wildland Consultants Ltd, working from our office in Auckland.
4. Sarah Budd holds the qualifications of Bachelor of Science in Ecology and Zoology, Post-graduate Diploma in Wildlife Management, and Master of Science (Distinction) in Conservation Biology. She has over 15 years' experience in ecological consultancy, including the preparation of Ecological Impact Assessments and management plans for a range of large- and small-scale projects. Nick Goldwater holds the qualification of Master of Environmental Science (Ecology) and he has 18 years' experience in preparing ecological assessments and ecological management plans, and has provided expert evidence for numerous Council-level and Environment Court hearings. Richard Storey has a Ph.D. in Zoology from University of Toronto and has 24 years' professional experience applying ecological knowledge to monitor, understand, mitigate and reverse

the impacts of human activities, particularly in fresh waters. His experience includes 15 years in the Freshwater Ecology Group of NIWA (the National Institute of Water and Atmospheric Research), where he provided evidence-based advice on freshwater management to local, regional and central government agencies. He has worked with Wildlands since 2023 and is experienced in preparing and reviewing freshwater Ecological Impact Assessments. He has studied the ecology of streams in Central Hawke's Bay over several years (see publications below).

5. We have all carried out reviews of RMA consent and FTAA applications for a range of regulatory authorities, including district councils, regional councils, DOC and the Environmental Protection Authority.
6. Our role in this project to date has included review of both the draft and final land exchange application documents relating to ecology, particularly the ecological assessment of the proposed land exchange prepared by SLR consultants. This included a review of the land exchange documents associated with the previous application (2013 to 2015), and providing advice to the applicant regarding how this information should be updated as part of the current application.
7. A review of the effects associated with the construction and use of the Tukituki Water Security project and the associated flooding of the dammed area are not within the scope of our review.
8. We have a good understanding of the ecological aspects of the proposed land exchange and the ecology of the of Ruahine Ecological District and the wider Hawke's Bay region. Work that is relevant to this application includes:
 - Wildlands 2017. Ecological Assessment of Patoka Farm, Hawke's Bay, Proposed for Overseas Investment. Contract Report No. 4241b.
 - Wildlands 2017. Cost-Benefit Analyses for the Proposed Hawke's Bay Regional Pest Management Plan. Contract Report No. 3221.
 - Wildlands 2020. Ecological Assessment of the Roil Forest, Hawke's Bay. Contract Report No. 5461a.
 - Wildlands 2021. Ecological Assessments of Natural Areas in Four Plantation Forests in Hawke's Bay, Forest Enterprises Ltd. Contract Report No. 5461k.

- Storey, R. G., & Quinn, J. M. (2008). Composition and temporal changes in macroinvertebrate communities of intermittent streams in Hawke's Bay, New Zealand. *New Zealand Journal of Marine and Freshwater Research*, 42:109-125.
- Storey, R. G., & Quinn, J. M. (2013). Survival of aquatic invertebrates in dry bed sediments of intermittent streams: temperature tolerances and implications for riparian management. *Freshwater Science*, 32:250-266.
- Storey, R. (2016). Macroinvertebrate community responses to duration, intensity and timing of annual dry events in intermittent forested and pasture streams. *Aquatic Sciences*, 78:395-414.

Code of conduct

9. While it is acknowledged this is not an Environment Court Proceeding, we confirm that we have read the Code of Conduct for expert witnesses contained in the Environment Court Practice Note 2023. We have complied with the Code of Conduct in the preparation of this advice. Unless stated otherwise, this advice is within our area of expertise, and we have not omitted to consider material facts known to us that might alter or detract from the opinions we express.

Scope of advice and expert opinion

10. Our expert advice relates to the following:
 - i. Adequacy of the Applicant's assessment of the ecological values of the land exchange areas, including identification of any values that have not been assessed or have been insufficiently characterised.
 - ii. Adequacy of the Applicant's comparative conservation values assessment of the land exchange areas.
 - iii. Adequacy of the Applicant's proposed management actions to be carried out on the exchanged land.
 - iv. If appropriate, alternative management approaches, including clarification of our recommended or preferred measures including where these differ from those proposed by the Applicant.
11. Two scenarios have been considered in preparing advice on this application:
 - i. Scenario 1 considers the ecological value of the Smedley Exchange Block (SEB) land as it is now.
 - ii. Scenario 2 considers the ecological value of the SEB land, should the land exchange go ahead. This scenario includes any relevant mitigation or offsetting

that relates to the land that would be received by DOC, and any positive or negative impacts of inundation, where they relate to that land.

Material Considered

12. In preparing this advice we have reviewed the following documents provided as part of the land exchange application:

- i. Land Exchange Assessment: Tukituki Water Security – Fast Track. Prepared by SLR consultants. Dated 28 November 2025. Referred to below as “the SLR report”.
- ii. Integrated Mitigation and Offset Approach (IMOA). Dated 8 February 2014.
- iii. Land exchange documents associated with the Ruataniwha application (2013 to 2015).
- iv. Exchange of land overview report. Prepared by Mitchell Daysh. Dated 28 November 2025.

13. Site visits were undertaken to the SEB on 16 June 2026 and to Dutch Creek on 1 September 2026 as part of this review.

Summary

Overview

14. The applicant proposes to exchange 29.72 hectares of DOC-administered land (DOC land) that would be inundated by water as part of the proposed Tukituki Water Security Project (the Project), with a 170.34 hectare area of land known as the “Smedley Exchange Block” (SEB). The DOC land also includes 1.2 kilometres of Dutch Creek, a large tributary to the Mākaroro River that will be inundated by the proposed Tukituki reservoir.

Terrestrial vegetation

15. Vegetation types have been described across both the DOC land and the SEB. While some of the vegetation type names are confusing and rely on broad categories (e.g. “(Podocarp)/broadleaf-small-leaved scrub” and “(Podocarp)/broadleaf-small-leaved treeland”) rather than using species names, they appear to be generally accurate based on photographs provided and observations made during the recent site visit. However, it would have been more appropriate to provide separate descriptions of black beech forest for each site rather than provide a combined description. The description provided in the SLR report states that this habitat type “consisted of black beech (up to 50% coverage)” and also contained “up to 25% cover of broadleaved species” in the sub-canopy and understorey. It also says that emergent matai and kahikatea are

present. During the site visit to the SEB, however, black beech appeared to be the dominant canopy cover and emergent podocarps were largely absent. Inspection of the orthomosaic of Dutch Creek provided by the Applicant indicates that black beech forest on DOC land has a higher diversity of canopy and emergent species. In addition, palatable broadleaved species appeared to be sparse in the sub-canopy and understorey of black beech forest on the SEB (as observed during the site visit).

16. A site visit to Dutch Creek was undertaken on 1 September 2026 to inspect the terrestrial and aquatic values on DOC land. The areas of riparian beech forest support a more diverse range of canopy trees than the SEB, which includes common black beech and mountain beech, frequent matai, and occasional totara and kahikatea (Plate 1). Despite browsing by deer, the understorey supports a relatively diverse range of divaricating woody shrubs, kanuka, ferns, and herbaceous species. Seedlings and saplings of wineberry were frequent throughout, while seedlings and saplings of rimu, narrow-leaved maire, *Veronica* sp., prickly mingimingi, karamū, and *Raukaua edgerleyi* were occasional. Based on these observations, it appears the beech forest on DOC land has higher representative and diversity values than that on the SEB.



Plate 1 - Mixed beech forest with matai (right of frame) on the true left of Dutch Creek. *Gahnia setifolia* and wineberry are prominent in the foreground. 1 September 2026.

17. A summary of the extent of each vegetation type at both the DOC and SEB sites is provided in Table 3 of the SLR report. This table demonstrates that the total extent of indigenous vegetation is greater on the SEB. Overall, the area of indigenous vegetation on the SEB is 125 hectares, which equates to an exchange ratio of 1:4.2 for DOC land lost to indigenous vegetation on the SEB. While this includes an overall increase in the total area of all structural vegetation classes (forest, treeland, scrub, shrubland, and wetland), the SLR Report does not provide an analysis of whether the 1:4.2 ratio is appropriate given the difference in threatened environment classifications between the DOC and the SEB. The DOC land is predominantly in Acutely and Chronically Threatened land environments, while most of the SEB's indigenous vegetation sits in the "less reduced and better protected" category (see paragraphs 42 to 44 below for more detail).
18. Red mistletoe is the only threatened flora species recorded on the DOC land. Red mistletoe has a threat classification of 'At Risk – Declining' (de Lange et al. 2024¹) and is hemiparasitic. While it has been recorded as a parasite on several species, its main host species include mountain beech, black beech, red beech, and silver beech. A survey for red mistletoe has not been carried out within the SEB, but the SLR report states that given the extent and quality of beech forest available at the SEB it is 'highly likely' red mistletoe will also be present at the SEB. While a survey would have provided greater confidence, the assumption that red mistletoe is present is reasonable given the relative abundance of beech forest at each site.
19. The possibility of other threatened species being present in cliff seepages on the DOC land was explored in 2013 when the site was surveyed by DOC staff (La Cock et al. 2015²). No additional threatened plant species were discovered at that time.
20. In addition to the indigenous vegetation, the SEB contains 45 hectares of grazed pasture and rank grass. This vegetation is of negligible ecological value and will create an ongoing management liability for DOC if stock is removed. No management actions are proposed to return these areas to indigenous cover.

¹ de Lange P.J., Gosden J., Courtney S.P., Fergus A.J., Barkla J.W., Beadel S.M., Champion P.D., 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*. Department of Conservation, Wellington. 105 pp.

² Le Cock, G., Rogers, G., Gerbeaux, P., and Scrimgeour, J. 2015. Assessment of proposed land exchange between Ruahine Forest Park revocation land and proposed Smedley Exchange Block in relation to Ruataniwha Water Storage Scheme. Department of Conservation.

Wetlands

21. A 0.24-hectare oxbow wetland is present on the DOC land, in the lower reach of Dutch Creek. This wetland was described by SLR as comprising small ponds that are largely covered with azolla fern and is surrounded by rush/sedgeland grading into indigenous woody vegetation.
22. Wildlands inspected this wetland during the site visit on 1 September 2026. The wetland vegetation is dominated by toetoe (*Austroderia fulvida*) and *Carex secta* with frequent rautahi and local *Juncus* (most likely *Juncus edgariae*). There are shallow areas of water on either side of the oxbow, which support exotic macrophyte species and the indigenous sedge species *Isolepis reticularis*. Tī kōuka and harakeke are occasional throughout the wetland (Plates 2 and 3). The oxbow surrounds a small 'island' of mixed indigenous shrubland with small patches characterised by tall fescue and bracken. Key species includes putaputawētā, kāpuka, wharariki, lancewood, small-leaved coprosmas, tī kōuka, wineberry, *Veronica* sp., whekī-ponga, whekī, and beech saplings and seedlings. The only pest plant species observed was cotoneaster (3-4 shrubs).
23. Overall, this wetland is highly representative of its type, it scores highly for diversity and pattern, and it also forms part of a freshwater-terrestrial ecological sequence. Exotic species are uncommon in this vegetation type.
24. During the site visit, we identified another wetland approximately 330 metres upstream of the oxbow wetland, which was not mapped by SLR (Plate 4). The wetland occurs on a low-lying, slightly undulating terrace, with vegetation characterised by co-dominant toetoe and *Carex secta* with frequent rautahi and *Juncus edgariae* (Plates 5 and 6), and occasional emergent whekī and tī kōuka. It was wet underfoot in places. It is contiguous with the adjacent forest and therefore forms part of a freshwater-terrestrial ecological sequence. We estimate this wetland is 700 m².



Plate 2 – Indigenous sedgeland and open water (with emergent *Isolepis reticularis*) within the oxbow wetland. 1 September 2026.



Plate 3 – Indigenous sedgeland and open water within the oxbow wetland, with mixed indigenous shrubland in the background (left). 1 September 2026.



Plate 4 – Location of newly identified wetland (red polygon) on the true right side of Dutch Creek. Aerial photography supplied by SLR.



Plate 5 – *Carex secta* and toetoe are common in the stream terrace wetland. 1 September 2026.



Plate 6 – View looking downstream across indigenous sedgeland within the stream terrace wetland. 1 September 2026.

25. The SEB contains six wetland areas, five of which are located in Donovan Gully near the centre of the site. Most of the wetlands are small, modified, low-quality wetlands typical of pastoral landscapes. The five low-quality wetlands cover a total of 0.13 hectares, while the sixth wetland is described in the SLR report as a 0.45-hectare area of higher value kahikatea treeland in a seep near the northern end of the SEB.
26. However, based on observations made during the site visit, it appears that the ecological value and vegetation description of the ‘kahikatea treeland’ is inaccurate in the SLR report. The wetland is largely characterised by indigenous rushland with scattered cabbage trees and young kahikatea (Plate 7). There was a shallow pond at the western end of the wetland (Plate 8). The larger trees on the periphery of the wetland include kahikatea, rimu, and black beech, noting they are not hydrologically linked to the wetland (they are on higher ground). Rather than a seepage, this wetland would better be described as an ephemeral wet shallow basin.



Plate 7 – Indigenous rushland and scattered trees within and adjacent to the wetland labelled ‘kahikatea treeland’. 16 June 2026.



Plate 8 – Pond and indigenous rushland within the wetland labelled ‘kahikatea treeland’. 16 June 2026.

27. The size of this wetland has also been overstated. The SLR report has measured it at 5,001 m²; however, the true extent, based on the Google Earth measuring tool, is closer to 2,100 m² (Plate 9).



Plate 9 – Estimated extent of wetland labelled ‘kahikatea treeland’ based on site visit and using the Google Earth measuring tool.

28. Wetland conservation values in the SEB vs DOC estate are not compared directly or included consistently in the SLR report. However, based on the description and photograph of the oxbow wetland in the Applicant’s report – and following the site visit at SEB – it is almost certain that the ecological values of the SEB wetlands are lower than the oxbow wetland beside Dutch Creek in the DOC estate, noting that the oxbow wetland is larger, more intact, and more floristically diverse than the SEB wetlands. It also forms part of a terrestrial-freshwater ecological sequence with the adjacent forest. In addition, since at least three of the degraded wetlands in the SEB appear to have formed in stream channels because of pugging by stock, it is likely that they will revert to streams (i.e. the wetlands may disappear) once stock are excluded and the riparian planting matures. If this occurs, wetlands in the SEB will only comprise the areas labelled ‘kahikatea treeland’ and ‘rautahi sedgeland’.

Terrestrial indigenous fauna

29. Fauna surveys in the SEB were absent or superficial. As a result, the SLR report relies heavily on:

- i. Historic data recorded to prepare the Terrestrial Ecology Report (TER) for the wider dam project (2011–2013),

- ii. Review of information available in relevant databases, and
- iii. Limited eDNA samples (single replicate).

30. In the absence of surveys carried out using best practice methods, the SLR report provides an adequate assessment of the habitat values for key fauna groups at both the DOC land and SEB. For most species, the habitat values of the SEB are at least equivalent to the DOC land and the extent of available habitat is larger at the SEB than the DOC land. Exceptions to this are:

- i. Less habitat will be available in the SEB area for shag and waterfowl species. However, it is noted that significantly more habitat will be provided for most waterfowl species by the creation of the reservoir (Scenario 2), acknowledging that these will likely include exotic species such as mallard and Canada geese.
- ii. Whio (*Hymenolaimus malacorhynchus*, Threatened – Nationally Vulnerable) was recorded in the Mākaroro River in December 2023, near the confluence with Dutch Creek. The SLR report states that “this species is likely to be using feeding and nesting habitat within Dutch Creek”. In contrast, “the streams within the SEB provide little, if any optimal whio foraging habitat, but the upper reaches of the Middle Stream provides some lesser quality habitat for both feeding and nesting”. As this species relies on flowing water the creation of the reservoir will not provide an increase in habitat, and the exchange will therefore represent a net loss in habitat availability and quality for whio under both scenarios.

31. Fernbird (At Risk – Declining) were heard calling from vegetation on the true left side of Dutch Creek during the site visit undertaken by Wildlands on 1 September 2026. The location is slightly upstream of the oxbow wetland.

Aquatic fauna and habitats

32. The SLR report states that the length of stream and river on the DOC land is 1.9 kilometres (including 1.2 kilometres of Dutch Creek mainstem and 0.7 kilometres of tributaries). However, using the GIS shapefiles provided by the Applicant, we consider the total length of streams on DOC land is more than 3.3 kilometres, which includes 1.96 kilometres on the mainstem of Dutch Creek, 0.884 kilometres of Dutch Creek tributaries and 0.505 kilometres of a tributary to the Mākaroro River. In addition, 0.22 kilometres of gravel bars alongside the wetted channel of Dutch Creek appear to be within the DOC land, and these bars can be considered as part of the stream ecosystem

(see below). It is noted that the length of streams and rivers in the DOC land is difficult to define accurately, because Dutch Creek meanders in and out of the DOC land parcel (as it appears on the map provided). However, the large discrepancy between the figures in the SLR report and those measured by Wildlands needs to be resolved.

33. The length of streams on the SEB land is also difficult to define accurately because it is unclear where in the catchment Donovan Stream begins, i.e. where its length should be measured from. The SLR report states that 2.03 kilometres of streams are within the SEB exchange land. Wildlands has calculated that the length could be as low as 1.57 kilometres or as high as 2.8 kilometres, depending on where in the catchment of Donovan's Creek streams are considered to originate, and therefore how many small tributaries of Donovan's Creek are included. The figure given by SLR is in the middle of this range, however it should be noted that stream length beyond 1.57 kilometres includes very small tributaries that are not comparable to Dutch Creek in regard to their ecological values.
34. While the SLR report states that the length of stream on the SEB is slightly greater than on the DOC land (2.03 km and 1.9 km respectively, noting that the accuracy of these values is questioned), the SEB streams are all considerably smaller than the 1.2 km of Dutch Creek. Therefore, it is not appropriate to simply compare stream/river length; habitat area is a more appropriate basis for comparing habitat quantity. Assuming the lengths and water widths of Dutch Creek and the SEB streams are correctly stated in the report, then (multiplying length by width) SEB streams offer 3,500 m² of open-water habitat compared with a total of 6,600 m² in the DOC estate (5,400 m² in Dutch Creek and approximately 1,200 m² in tributaries of Dutch Creek). The difference between these will be much greater if the stream lengths in the report are incorrect.
35. The area of river habitat in Dutch Creek is actually greater than the product of the width and length of the open-water channel. Dutch Creek contains numerous large gravel bars, gravel banks and likely deep gravel deposits beneath the channel (Plate 10). These areas, known as the hyporheic zone, provide subsurface habitat for aquatic invertebrates and interact with the open water in the river channel in multiple ways, including providing upwellings that are important for spawning of some fish species. From an ecological perspective, the hyporheic zone beneath and adjacent to these gravel banks should be included as part of the river ecosystem. Gravel bars in the SEB streams are either small or non-existent, due to topography or underlying geology, therefore the hyporheic zone will provide much less habitat and groundwater interaction in each SEB stream than in Dutch Creek.



Plate 10 – Aerial view of Dutch Creek (supplied by SLR), showing gravel bars and gravel banks. Subsurface water flowing beneath these creates a “hyporheic” zone habitat.

36. The habitat diversity in the SEB streams is certainly less than that in the larger Dutch Creek. For example, Dutch Creek has frequent deep pools and high velocity rapids (Plates 11-12) that were not observed in streams on SEB land. Because fish species have distinct preferences for specific combinations of water depth, velocity and substrate, there is a direct relationship between habitat diversity and fish species diversity. For example, the most likely reason that torrentfish and bluegill bully were found in Dutch Creek but not in SEB streams is that these two species strongly prefer fast-flowing water >0.25 metres deep. Another habitat type that appears to be common in the Mākaroro River and Dutch Creek but rare or absent in SEB streams is backwaters (areas of slow-flowing water formed by gravel bars; Plate 13), which is a preferred habitat for Cran’s bully. Finally, rockface seepages (water trickling down rock faces; Plate 14) are common in Dutch Creek but rare or absent in SEB streams. Rockface

seepages support species of aquatic invertebrates that do not occur in streams³, therefore these seepages very likely increase the biodiversity of Dutch Creek. In the SEB land, Middle Creek and North Creek have some good quality riffle and pool habitat (Plate 15), though deep pools and higher velocity rapids are unlikely to occur on these streams because their flow volume is significantly lower than Dutch Creek. These two streams together represent less than 450 metres of the stream length in SEB land. Donovan Stream (Plate 16) and South Stream are much smaller, and have too little flow to support the habitat types seen in Dutch Creek. Further, aquatic habitats in these streams are currently degraded by stock access. These two streams represent most of the stream length on SEB land.



Plate 11. Deep pool with overhanging features providing excellent fish habitat in Dutch Creek. Several large fish were seen here on 1 September 2026.

³ Collier, K. J., & Smith, B. J. (2006). Distinctive invertebrate assemblages in rockface seepages enhance lotic biodiversity in northern New Zealand. *Biodiversity & Conservation*, 15(11), 3591-3616.



Plate 12. Fast-flowing turbulent area with water depth at least 20 centimetres. Dutch Creek. 1 September 2026.



Plate 13. Large backwater area connected to riffle. Dutch Creek. 1 September 2026.



Plate 14. Rockface seepage. Dutch Creek. 1 September 2026.



Plate 15. Typical riffle habitat in Middle Creek, SEB land. 16 June 2026.



Plate 16. Stream in Donovan's Gully, SEB land. From SLR Land Exchange Assessment 28 November 2025.

37. There are other significant gaps in the ecological information that the assessment is based on. Other missing information includes:

- i. Fish species information for North Stream and the southern-most stream (here called "South Stream"). It is hard to evaluate Diversity and Pattern, Rarity and Distinctiveness for the SEB streams without this information. eDNA data would be sufficient if sampling is carried out according to recommended protocols⁴, i.e. six replicates rather than a single replicate for all SEB streams. There is a c.40% chance of missing a species using one replicate only. As such, we cannot be confident of the assessments of Diversity and Pattern, Rarity and Distinctiveness for the SEB streams without this information.
- ii. Rapid Habitat Assessments for North and South Streams. Assessments of Representativeness and Diversity and Pattern for the SEB streams are less accurate without this information.
- iii. Table 12 mentions that an unspecified length of stream on the Mākaroro River and 700 metres of tributaries of Dutch Creek are also in the DOC estate. The Mākaroro River bed is listed as Habitat Type 12 in Section 4, but its values are not described or accounted for elsewhere in the report. The Dutch Creek tributaries are not mentioned elsewhere in the report. Both habitats should be fully described and assessed in the Habitats section alongside the other

⁴ Smith, J., David, B., Hicks, A., Wilkinson, S., Ling, N., Fake, D., Suren, A. and Gault, A. (2024). *Optimizing eDNA replication for standardized application in lotic systems in Aotearoa, New Zealand*. Environmental DNA, 6(5) e70017.

streams. This information affects both the quality and quantity assessments for streams in the DOC estate, particularly because the Mākaroro is a braided river, which is a rare ecosystem type, especially in the North Island.

- iv. Table 12 includes the wetlands on Dutch Creek but not those in the SEB. A consistent approach should be used for both sites.

38. In the absence of the information described above, the assessments of the ecological values of the streams and rivers on the DOC estate and in the SEB are based on assumptions. Overall, based on the information available (see summary table below for details) these assessments (and the assumptions made) seem to be reasonable for Scenario 2, i.e. once the proposed enhancements and mitigation (exclusion of stock from the SEB, riparian restoration of Donovan Stream, and trap-and-transfer of eels across the dam) have been implemented. However, this conclusion is tentative given the information gaps described above.
39. Stock exclusion and pest animal control on the SEB, riparian planting along Donovan Stream and associated wetlands, and trap-and-transfer of eels across the dam are appropriate management actions to improve the ecological values of the SEB streams and Dutch Creek. While these management actions would raise the ecological value of the SEB streams, the conservation values of SEB streams would still be lower than those of Dutch Creek and Mākaroro River (see Table below).
40. It is also noted that there is still ambiguity regarding how the management actions proposed to facilitate the land exchange relate to (or overlap with) the management actions that will be carried out to mitigate the effects of the dam construction (see “Mitigation vs Land exchange actions” section below).
41. Overall, the quality of wetland and aquatic habitats on the SEB is lower than on the DOC land. This is indicated by the assessments for ecological criteria (all “moderate” or “low” for SEB wetlands and streams, compared with “high” or “moderate” for DOC estate wetlands and streams). The area of stream habitat on the SEB is also less, and the area of wetland habitat on the SEB is likely to become less over time as native vegetation recovers, than on the DOC land.

Significance Assessments and Threatened Environment Classifications (TEC)

42. The SEB has a smaller extent of indigenous vegetation on ‘Acutely Threatened’ land environments (<10% indigenous cover left) compared with the DOC land. The extent of ‘Chronically Threatened’ land environments (10–20% indigenous vegetation cover left) is

similar between the two sites. A detailed summary is provided in Table 10 of the SLR report.

43. Across the two sites SLR has classified the following indigenous vegetation types as 'significant' using the criteria provided in the Hawke's Bay District Plan and Regional Policy Statement:

- i. Black beech forest
- ii. Putaputawētā - lacebark – kaikomako forest
- iii. Podocarp - black beech / putaputaweta – five-finger forest
- iv. (Podocarp)/broadleaved-small-leaved species treeland/shrubland
- v. Black beech treeland
- vi. Black beech / mānuka - Coprosma treeland
- vii. Broadleaved species scrub
- viii. Putaputawētā – kaikomako – lacebark / Coprosma rigida – mānuka scrub
- ix. Mānuka - Putaputawētā – kaikomako - Coprosma rigida scrub
- x. Koromiko – putaputaweta – kāpuka shrubland
- xi. Mānuka – poataniwha – Coprosma rigida - kaikomako shrubland
- xii. Oxbow Wetland
- xiii. Kahikatea treeland, seepage wetland

44. While these classifications appear generally accurate, a summary of the specific significance criteria that are met by each of these vegetation types has not been provided and would be useful to verify the results of the assessment.

Conservation Values Assessment (FTAA 2024)

45. A summary and review of the Conservation Values assessment is provided in the Comparative reporting of criteria assessment section below.

Key Issues

Limitation of the information provided

46. As discussed above, due to a lack of survey data from within the SEB, much of the assessment of ecological values within the SEB is based on assumptions. While these assumptions appear reasonable based on the information that is available, it is difficult to be entirely confident in the resulting conclusions.

47. The SLR report also lacks an assessment of the appropriateness of the 1:4.2 area ratio in the context of the different TEC classifications at the two sites.

Wildlife approvals specific advice

48. As our advice relates to the land exchange only, and not the effects of the dam itself, we have no comment regarding requirements for Wildlife Approvals.

Negotiations with the landowner

49. The Executive Summary of the SLR report states that the conclusion of negotiations with the landowner is still “pending”. This is concerning as the results of this negotiation may impact the final extent of vegetation and other habitats within the SEB. Further clarity should be provided regarding where this negotiation is up to, what key issues are still being worked through, and how these may affect the final SEB area.

Mitigation vs land exchange actions

50. When discussing the management actions proposed to enhance ecological values in the SEB, the SLR report states that “these management actions are part of the land exchange and are additional to any works undertaken to mitigate the adverse effects of the proposed dam and reservoir”. However, this does not appear to be the case when these actions are compared with the IMOA, as the SEB falls within the Catchment Enhancement Zone, an area subject to management under both Project A and Project C of the IMOA. Potential issues associated with the actions being proposed for the land exchange also being required as a condition of consent are a legal issue that should be dealt with separately.

Pasture and rank grass

51. Without ongoing and adequately resourced management, large areas of retired pasture are likely to become increasingly dominated by pest plants and animals. Even if pest plant and pest animal control is carried out within these pasture areas, regeneration to indigenous cover is likely to be extremely slow. The ongoing management of these areas is therefore a significant liability for DOC, whose limited resources would be better spent on the management of existing high value areas.

52. If DOC is to take ownership of areas of pasture, the applicant should commit to managing these areas to ensure they return to an indigenous scrub/forest ecosystem. This may be through revegetation planting, or managed regeneration over a longer period of time.

Fish barrier created by the dam

53. The dam will prevent fish passage to the SEB streams (as well as to Dutch Creek and Mākaroro River). Therefore, under Scenario 2 the ecological value of the SEB streams

(with respect to fish diversity) will be reduced compared to the current assessment. This future impact will cause a permanent reduction in the values of the SEB.

54. The SLR report states that shortfin and longfin eels will be regularly trapped and transferred across the dam. This may be effective in facilitating upstream migration of juvenile eels to the SEB streams, but the chance of successfully transferring mature adults downstream to breed is low. If eels in the SEB streams are unable to breed, then the ecological value of these streams is diminished. Apart from eels, the only other indigenous migratory fish affected is kōaro. The applicant points out that kōaro (At Risk – Declining) can form landlocked populations. However, landlocked kōaro populations are not common in the North Island, probably because lake populations of kōaro are mainly limited to cold, deep lakes. The presence of trout further limits lake populations. Therefore, there is significant risk that kōaro may not survive in the SEB streams once the dam prevents migration to the sea. If this occurs, the ecological value of the SEB streams will be lower than stated in the SLR report.

Overall assessment

Biodiversity (terrestrial) assessment

55. SLR assigned the DOC land and SEB the same scores for three of the four assessment criteria (Representativeness, Rarity and Distinctiveness, and Ecological Context). Much of the assessment of the Rarity and Distinctiveness of the SEB is based on assumptions regarding the indigenous species likely to be present within the available habitat. This does not reflect best practice, and ideally the assessment would also have included surveys for threatened plants and key fauna groups within the SEB. However, in the absence of these surveys, the assumptions made appear to be reasonable.
56. The SLR assessment of the relative values of the DOC land and SEB does not discuss the inclusion of the grazed pasture and areas of rank grass as part of the SEB. For the purposes of comparing the terrestrial ecological values of the DOC land and the SEB we have focused on the relative quality and abundance of indigenous ecosystems only. However, as noted above, we have concerns regarding the ongoing ecological management liability associated with the 45 hectares of pasture that is also included in the SEB. Proposed conditions for the management of these areas are provided below.
57. For the Diversity and Pattern criterion the SEB was given a rating of **H**, while the DOC land was given a rating of **M**. This is largely due to the different underlying geology and greater altitudinal range (> 300 metres) within the SEB compared with the DOC land.

58. While the SEB is relatively more diverse than the DOC land — at least in terms of the range of terrestrial habitats present — it is not a particularly high-diversity site, particularly given the scarcity of palatable species due to deer browse. The rating of **H** therefore overstates the value of this criterion; a rating of **M/H** would be more appropriate.
59. Overall, there is a greater diversity of indigenous habitats on the SEB than on the DOC land, and (provided the assumptions made are correct) the extent of these habitats is greater on the SEB. However, while there may be a greater diversity of habitats present at the SEB, based on the site visit to Dutch Creek undertaken by Wildlands on 1 September 2026, it appears that the beech forest on DOC land is more botanically diverse and intact than the equivalent on the SEB, despite the presence of deer.

Freshwater assessment

60. The comparative conservation values assessment comprises two aspects – the conservation “quality” of freshwater habitats in the two land exchange areas and the quantity of the freshwater habitats in each area. There are problems with each of these aspects. In the summary of quality aspects (Table 12), scores for the criteria Representativeness, Diversity and Pattern, and Rarity and Distinctiveness are derived by comparing each river with other similar-sized rivers. For example, the third-order Dutch Creek is compared with other third-order rivers to assess Representativeness, while the first-order Donovan Stream is compared to other first-order streams. However, Dutch Creek and SEB streams are not compared with each other, even though the purpose of Table 12 is to compare them side-by-side. This is an issue because the medium-sized rivers on the DOC land are not equivalent to the small streams on the SEB. They provide a greater variety of habitats for fish and macroinvertebrates, including some habitats not present in the SEB streams. For example, Dutch Creek has deeper and faster-flowing habitats than are present in SEB streams. This is the most likely reason why torrentfish, bluegill bullies and redfin bullies are found in the Mākaroro River but not in the SEB streams. Some of the SEB streams are likely to be unsuitable as habitat for most fish species due to their shallow depth and lack of pools.
61. The comparative conservation assessment also must include comparing the quantity of habitat. There are two concerns regarding habitat quantity. First, the length of Dutch Creek and tributaries in the DOC estate is longer than the combined length of the SEB streams, according to measurements by Wildlands. Second, it is not appropriate to simply compare stream/river length as the rivers on the DOC land are much larger than the streams in the SEB. Habitat area is a more appropriate basis for comparing habitat

quantity. As stated above, SEB streams appear to provide significantly less habitat area than the rivers on the DOC estate. Assuming the lengths and water widths of Dutch Creek and the SEB streams are correctly stated in the SLR report, then (multiplying length by width) SEB streams offer 3,500 m² of open-water habitat compared with 6,600 m² in the DOC estate. The difference between these will be much greater if the stream lengths in the SLR report are incorrect. Including subsurface habitat beneath gravel bars further increases the difference in habitat area between SEB and DOC estate streams.

62. Wetland conservation values in the SEB vs DOC estate are not compared directly or included consistently in Table 11. For example, only one criterion – Rarity and Distinctiveness – has been applied to the wetlands at both sites. Based on findings by Wildlands during the two site visits, it is clear the ecological values of most of the SEB wetlands are considerably lower than the oxbow wetland and new wetland on the margins of Dutch Creek in the DOC estate. The oxbow wetland and newly identified stream terrace wetland score **H** for Representativeness and Diversity and **M** for Pattern and Ecological Context, while the SEB wetlands all score **M** to **L** for these criteria. Both wetlands provide potential habitat for cryptic wetland bird species such as fernbird, spotless crane, and marsh crane (all classified as At Risk – Declining).
63. It appears that seepage habitats occupying steep slopes on the margins of Dutch Creek have not been assessed by SLR.
64. Since the degraded wetlands in the SEB appear to have formed in headwater stream channels due to pugging by stock, it is likely that most of them will revert to streams (i.e. the wetlands may disappear) once stock are excluded and the riparian planting matures. If this occurs, wetlands in the SEB will only comprise the areas identified as ‘kahikatea treeland’ and ‘rautahi sedgeland’, meaning there will be a net loss in wetland extent should the land exchange proceed. The site visit undertaken by Wildlands in June 2026 also confirmed that the kahikatea treeland wetland is smaller and of lower value than the oxbow wetland on the DOC land. It is also a different wetland type and likely provides lower habitat values for wetland bird species.
65. The accuracy of ratings for all streams and rivers is limited by the lack of field data, especially habitat data. Ratings for the DOC land rely on previous assessments (e.g. from 2013) and desktop data. Ratings for the SEB streams rely on assumptions and high-level field observations for two or three of the four streams.
66. Overall, the quality of aquatic and wetland habitats on the SEB is lower than on the DOC land, and the extent of habitat (measured as habitat area) is also reduced.

Comparative reporting of criteria assessment

BIODIVERSITY ASSESSMENT

Ecological Criterion	PCL (DOC Land)		Land offered (SEB)	
	SLR Report	Wildlands Comment	SLR Report	Wildlands Comment
Representativeness	M – Beech forest with most podocarps logged (15.97 ha), Putaputawētā - lacebark – kaikomako forest and derivatives (1.9 ha), black beech treeland (0.6 ha), mixed broadleaved and small-leaved species treeland and shrubland (9.26 ha), ‘oxbow’ wetland (0.236 ha). Moderately representative of vegetation in the Ruahine ED, which features large areas of similar or better quality black beech forest.	Agree with overall rating.	M – Representative beech forest and podocarp-beech forest (36.8 ha), black beech treeland (17 ha), mixed broadleaved and small-leaved species scrub (36.9 ha), Black beech forest is of very good quality in some areas.	<u>Scenario 1</u> Representativeness is likely to remain at M in the absence of deer control and fencing. <u>Scenario 2</u> Representativeness is highly likely to improve to M/H or H if stock are excluded and deer are effectively controlled in forest and shrubland habitats.
Diversity & Pattern	M – Beech forest, broadleaved species forest, and modified and regenerating indigenous treeland and shrubland, one wetland. Remnant lizard and bird fauna.	Based on the site visit to Dutch Creek on 1 September 2026, the diversity of the riparian beech forest should score M/H .	H – Beech forest, podocarp-beech forest, and extensive modified and regenerating indigenous treeland, scrub and shrubland. Several small wetlands. Supports ecosystems that are not present in DOC land	<u>General comment</u> While the SEB has a greater diversity of habitats than the DOC land, it is not a particularly high diversity site. The rating of H therefore overstates the value of

Ecological Criterion	PCL (DOC Land)		Land offered (SEB)	
	SLR Report	Wildlands Comment	SLR Report	Wildlands Comment
	Freshwater fish community in Dutch Creek. Underlying geology similar to that found in nearby conservation estate.		that will be inundated. Potential habitat for several indigenous lizard species. Different underlying geology and greater altitudinal range (> 300 m) than conservation estate.	this criterion. A rating of M would be more appropriate. <u>Scenario 1</u> Diversity & Pattern is likely to remain at M in the absence of deer control and fencing. <u>Scenario 2</u> Diversity & Pattern is highly likely to improve to M/H or H if stock are excluded and deer are effectively controlled in forest and shrubland habitats.
Rarity & Distinctiveness	M – Red mistletoe (Declining), North Island fernbird (Declining), and potentially long-tailed bat (Threatened - Nationally Critical), and whio (Threatened - Nationally Vulnerable). Indigenous vegetation on land environments with <20% indigenous cover left (22 ha).	Agree with overall rating.	M – Potentially long-tailed bat (Threatened - Nationally Critical) and several other Threatened or At Risk species such as bush falcon (Threatened - Nationally Increasing), North Island fernbird (At Risk – Declining), New Zealand pipit (At Risk – Declining), red mistletoe (At Risk – Declining), Hawke’s Bay tree wētā (Relict), Ngahere gecko (At Risk -	<u>Scenario 1</u> It is likely this criterion will remain at M or decrease to L in the absence of management (particularly the control of predators and possums), noting that in the absence of more robust surveys of the SEB, there is still some degree of uncertainty

Ecological Criterion	PCL (DOC Land)		Land offered (SEB)	
	SLR Report	Wildlands Comment	SLR Report	Wildlands Comment
	Bluegill bully (At Risk – Naturally Uncommon), dwarf galaxias (Threatened – Naturally Vulnerable), torrentfish (At Risk – Naturally Uncommon), longfin eel (At Risk – Declining) in Dutch Creek. Ngahere gecko (At Risk – Declining).		Declining), and other At Risk lizard species. Indigenous vegetation on land environments with <20% indigenous cover left (29.95 ha).	regarding the appropriateness of this rating. <u>Scenario 2</u> It is unlikely that the rating for this criterion would increase from M if the land exchange went ahead.
Ecological Context	M/H – Relatively small area of indigenous vegetation (20.9 ha). The Mākaroro block provides limited buffering to the river while the Dutch Creek block is contiguous with the wider Forest Park and provides a valuable linkage between the upland areas and the river downstream, as well as buffering the creek itself.	Agree with overall rating.	M/H – Relatively large area of indigenous vegetation (122.2 ha). Indigenous vegetation partly buffers the Mākaroro River (following inundation the vegetation will buffer the newly formed lake). Also buffers and adds to a range of indigenous vegetation types with the adjacent Gwavas Conservation Area. Riparian area and wetlands in Donovan Gully will be planted and restored. Extension of the altitudinal range of Gwavas Conservation Area and	<u>Scenario 1</u> In the absence of future management, we agree that the rating for this criterion is likely to be M/H. <u>Scenario 2</u> The rating for this criterion is unlikely to change if the land exchange goes ahead.

Ecological Criterion	PCL (DOC Land)		Land offered (SEB)	
	SLR Report	Wildlands Comment	SLR Report	Wildlands Comment
			connection of the CA to the river /lake.	

Overall Assessment – Biodiversity	
SLR Report	Wildlands Comment
Overall, the Smedley Exchange Block is of comparable value to the DOC land being lost	Based on the limited data available and the two site visits undertaken by Wildlands, this overall assessment appears to be generally accurate for most ecological attributes (noting that wetland values are addressed below). However, under both scenarios the SEB provides lower habitat values for who (Threatened – Naturally Vulnerable) than the DOC land. In terms of vegetation, under Scenario 1 the ecological values of the SEB will likely remain static or gradually decline. Under Scenario 2, it is highly likely that Representativeness and Diversity & Pattern would improve if stock and deer are appropriately excluded from forest and shrubland habitats. While terrestrial habitats on the SEB are likely to be of comparable value due to the larger extent of forest and scrub, the evidence provided does not indicate that the exchange will <u>enhance</u> the conservation values of land managed by the Department of Conservation under Scenario 1 (i.e. current values). However, under Scenario 2, it is likely that the overall conservation values of Crown owned land will be enhanced.

FRESHWATER ASSESSMENT

Ecological Criterion	PCL (DOC Land)		Land offered (SEB)	
	SLR Report	Wildlands Comment	SLR Report	Wildlands Comment
Representativeness	H. Dutch Creek (3rd Order waterway) (1.2 km) and tributaries (2nd order waterway) (700 m). Mākaroro River (4th Order). Similar to other waterways in the area although catchment is modified and waterway is at least partially affected by sediment from the adjacent forestry land. Oxbow wetland in Dutch Creek is significant for representativeness, rarity, distinctiveness and ecological context (La Cock et al. 2015). Mākaroro River is not identified as significant for its ecological values by HBRC (Harper 2018). Hughey et al. (2012) assessed the Mākaroro River as being of Local significance for native birdlife. M. Oxbow wetland.	Agree with overall rating for Dutch Creek We do not agree with the M rating for the oxbow wetland. This site is dominated by indigenous vegetation and includes a range of habitat types such as sedgeland, shrubland, and open water. It should be assessed as H. Similarly, the new wetland identified upstream of the oxbow wetland is dominated by indigenous plant species and is highly intact. It should be assessed as H.	M. Donovan Gully (1st Order waterway), parts of 1st and 3rd Order waterway to the south, and 2nd Order waterway to north. Waterways in the SEB are modified and not particularly representative of streams in the ED which has a high proportion of unmodified catchments. Kahikatea treeland seepage (0.45 ha), and modified wetlands in Donovan Gully (0.13 ha).	<u>Scenario 1</u> All wetlands in the SEB except one (rautahi sedgeland, M) should be assessed as L given their size and poor condition. SEB streams should be rated M-L (M for Middle Stream and North Stream, L for Donovan Stream). <u>Scenario 2</u> If the land exchange proceeds, the gully wetland will likely revert to streams following stock exclusion, which means the rating for representativeness will remain at L. The kahikatea treeland seepage and rautahi sedgeland could improve to

Ecological Criterion	PCL (DOC Land)		Land offered (SEB)	
	SLR Report	Wildlands Comment	SLR Report	Wildlands Comment
	Mākaroro floodplain contains Willow/lupin forest and/or scrub, with buddleia, mānuka, and other native species. The gravel riverbed contains open stream channels and mobile gravels. Mākaroro MCI 5-year rolling average of 122 (Excellent) (https://www.hbrc.govt.nz).			L/M and M respectively following stock exclusion. For streams following stock exclusion and riparian planting along Donovan Stream, agree with SLR's rating of M. Note that all SEB streams are 1st order, not 2nd to 3rd order as presented.
Diversity & Pattern	H. Fish data from the Mākaroro which is somewhat applicable to Dutch Creek shows 9 indigenous fish species: shortfin eel (Not Threatened), longfin eel (At Risk – Declining), torrentfish (At Risk – Naturally Uncommon), dwarf galaxias (Threatened – Nationally Vulnerable), Cran's bully (At Risk – Naturally Uncommon), common bully (Not Threatened), bluegill bully (At Risk – Naturally Uncommon), redfin bully (At	Agree with overall rating on streams and aquatic fauna, although no assessment was provided for wetlands in the SLR report. Based on observations made during the site visit, the oxbow wetland and stream terrace should both have a H rating.	M. A range of stream morphologies and habitat types are present within the SEB, providing moderately good-quality and reasonably diverse habitat for indigenous fauna. Although only five fish species were recorded from the two surveyed streams, more may be present. The taxon-independent community index showed good to excellent ecological health.	<u>Scenario 1</u> All wetlands in the SEB (apart from the kahikatea treeland, M) should have a L rating for Diversity & Pattern. For streams, disagree with overall rating. M is appropriate for Middle Stream and maybe North Stream (no species

Ecological Criterion	PCL (DOC Land)		Land offered (SEB)	
	SLR Report	Wildlands Comment	SLR Report	Wildlands Comment
	Risk – Naturally Uncommon), and common smelt (At Risk – Declining). Eight bird species associated with aquatic habitats recorded in TER: North Island fernbird (At Risk – Declining) banded dotterel (At Risk – Declining), black shag (At Risk – Relict), pied stilt, welcome swallow, southern black-backed gull, paradise shelduck, and sacred kingfisher (all Not Threatened). The gravel riverbed contains open stream channels and mobile gravels.			information is provided for North Stream, so this is based on the habitat description). However, Donovan's Stream should be L. The rating for South Stream is not known. Therefore, overall rating should be M-L. <u>Scenario 2</u> If the land exchange proceeds, the gully wetlands will likely revert to streams following stock exclusion, which means the rating for Diversity & Pattern will remain at L. Stock and ungulate exclusion will likely increase the M rating to M/H for the kahikatea treeland wetland. For streams, agree with SLR's overall rating of M. Donovan's Stream (currently L) has

Ecological Criterion	PCL (DOC Land)		Land offered (SEB)	
	SLR Report	Wildlands Comment	SLR Report	Wildlands Comment
				potential to increase to M gradually over time after riparian planting is implemented.
Rarity & Distinctiveness	H. Freshwater wetlands are rare at a national scale (Cromarty and Scott 1985). Braided riverbeds are a Naturally Rare/Uncommon ecosystem type (Williams et al 2007) classified as Endangered (Holdaway et al. 2012) Four At Risk fish species in Mākaroro River which are expected to also inhabit Dutch Creek. Three At Risk bird species in river/wetland habitats.	Agree with overall rating, noting that the oxbow wetland and stream terrace wetland are the only examples of their types on DOC land.	M. Three At Risk fish species were recorded in the two surveyed streams within the SEB. Although the wetlands in the SEB are degraded, freshwater wetlands are rare at a national scale (Cromarty and Scott 1985).	<u>Scenario 1</u> SLR did not assess this criterion for wetlands at the SEB; however, a H rating is appropriate for the rautahi sedgeland and kahikatea treeland seepage given that wetlands are rare at a national scale. For streams, agree with the overall rating (M). <u>Scenario 2</u> For the rautahi sedgeland and kahikatea treeland seepage, this rating of H will not change should the land exchange proceed. The gully wetlands will likely revert to streams following stock

Ecological Criterion	PCL (DOC Land)		Land offered (SEB)	
	SLR Report	Wildlands Comment	SLR Report	Wildlands Comment
				exclusion, which means the rating will remain at L. For streams, agree with SLR's overall rating of M, but noting that if kōaro (At Risk – Declining) do not persist due to becoming landlocked, then the number of At Risk species will decline to two. Further, this rating relies on the trap and transfer of longfin eels after the dam is built. Without trap and transfer the rating should be L.
Ecological Context	M/H. Only a very small part of the Mākaroro riverbed, but a larger part of Dutch Creek, is located on DOC land. Dutch Creek is moderately well-buffered by indigenous vegetation. Mākaroro River and Dutch Creek are part of large, interconnected river system.	Disagree with overall rating. Should be H given that the Mākaroro River and Dutch Creek are the fish migration corridor to a large amount of upstream habitat, including for At Risk fish species. No rating is given to the oxbow wetland in the SLR report. It	M. The waterways are small, and their lower reaches are located in exotic grassland, but they provide a valuable linkage between the Gwavas Conservation Area and what will be the new reservoir. Wetlands are small.	<u>Scenario 1</u> All wetlands should be L due to their small size, isolation, and low habitat quality. Streams should be M-L. North, Middle and South Streams connect to the Gwavas Conservation Area.

Ecological Criterion	PCL (DOC Land)		Land offered (SEB)	
	SLR Report	Wildlands Comment	SLR Report	Wildlands Comment
	Not a DOC Ngā Awa site, community restoration site, or Ngā Whenua Rāhui.	should be M given it forms part of a terrestrial-freshwater ecotone. Similarly, a rating of M is appropriate for the newly identified stream terrace wetland as it also forms part of terrestrial-freshwater ecotone.	Not a DOC Ngā Awa site, community restoration site, or Ngā Whenua Rāhui.	Donovan Stream (the longest stream) does not. <u>Scenario 2</u> The rating of L will not change should the land exchange proceed, noting that the gully wetlands will likely revert to streams and the remaining wetlands will still be small and isolated. All streams should be L, given that fish passage will be cut off by the dam (even if trap and transfer is implemented).

Overall Assessment – Freshwater	
SLR Report	Wildlands Comment
Aquatic values (in streams) in the SEB are lower than those that will be lost in the DOC land, however, they are still considered to be of moderate to high ecological value because of the presence of three At Risk fish species. In addition, with restoration work in Donovan Gully the Donovan Stream and the wetlands there will improve. Exclusion of livestock from all waterways on the SEB will also significantly improve aquatic values.	SLR's overall assessment of "moderate to high value" is not consistent with its assessments of individual ecological criteria (above), which are all "moderate." Wildlands' overall assessment of SEB streams in scenario 1 is moderate to low, based on stream quality. In scenario 2, the dam will create a barrier to fish migration but the exclusion of livestock from all waterways on the SEB will also significantly improve aquatic values. Therefore, Wildlands' overall assessment for aquatic values in SEB streams under Scenario 2 is moderate. Further to the overall rating, the SEB streams have naturally lower conservation value than the DOC estate streams because the quantity of freshwater habitat is less (whether measured as total stream length or stream habitat area) and the quality is lower (as smaller streams, they have less habitat diversity and in particular are missing deep pools, deep turbulent, fast-flowing habitats, backwaters and rockface seepages). The streams in the SEB also offer no habitat for whio (Threatened - Nationally Vulnerable), whereas those on the DOC land do. Based on observations made during the two site visits, the extent and ecological value of wetlands on the SEB are clearly lower than the DOC land. Importantly, an additional wetland was identified on the margins of Dutch Creek during the September site visit, bringing the total extent of wetland habitat on the DOC land to at least 3,100 m². Under Scenario 1, wetland values on the SEB are likely to remain unchanged or decline in the long term. Under Scenario 2, values for two wetlands (rautahi sedgeland and kahikatea treeland seepage) are likely to increase as a result of fencing and ungulate exclusion. However, the remaining gully wetlands will likely revert to streams, and their wetland values will therefore be nullified. This will also result in a net reduction in wetland extent on the SEB. Overall, under both Scenario 1 and Scenario 2, the exchange is not expected to result in a net enhancement of aquatic and wetland conservation values on Crown owned land. The SLR report does not appear to provide an overall comparison of wetland values between the PCL and SEB.

Responses to submissions by other parties

The following comments in submissions by other parties represent relevant, significant points that have not already been addressed in the previous sections of our technical report. Most of the comments are paraphrased, except where they are shown in quotation marks, and similar comments have been combined.

A. Responses to submissions on terrestrial ecology

Comments by Dr Fleur Maseyk on behalf of Forest and Bird

1. Survey effort in the SEB is inadequate for fauna, and most data is over a decade old. The land exchange assessment relies on old data and assumptions rather than confirmed values.

Response: We agree that fauna surveys in the SEB were largely absent, and that the SLR report relies heavily on historic data (2011–2013), database review, and limited single-replicate eDNA sampling. However, in the absence of best-practice surveys, the SLR report nonetheless provides an adequate assessment of habitat values for key fauna groups, and the assumptions made appear reasonable given the available information.

2. The conclusion of comparability relies heavily on assumed presence of Threatened and At Risk species in the SEB (as "potentially present" rather than confirmed), which is not a valid basis for assessment under the FTAA.

Response: We acknowledge that reliance on assumptions (particularly for Rarity and Distinctiveness in the SEB) means there is some degree of uncertainty regarding the appropriateness of ratings. Overall, the assumptions appear reasonable given the available habitat descriptions and ecological context, noting that it is preferable that targeted surveys are undertaken for threatened species.

3. The scoring framework for conservation values is opaque and subjective — it is unclear how scores were assigned to each criterion or how different values contributed to criterion scores.

Response: Some degree of subjectivity is inevitable when assessing habitats against a set of criteria that are not explicitly linked to data captured in the field. The application of a numerical model similar to a Biodiversity Offset Accounting Model (BOAM) could be applied to the assessment of relative ecological value. However, this is over and above what is expected by the assessment framework provided in DOC's external guidance for conservation values assessments, which specifically states that these assessments are not expected to involve biodiversity compensation models or similar approaches.

As noted above we do not agree with the conservation values scores provided in the SLR report for some of the criteria. It would be useful to have more information regarding which specific criteria Dr Maseyk considers have been inaccurately assessed, and what her recommended valuation would be for these criteria.

4. Mitigation and management measures required for the land exchange overlap significantly with the IMOA for the dam project. The same actions cannot be counted towards both the land exchange comparability and effects management (double-dipping). The proposed measures required to improve the values of the SEB must be secured, resourced, and stand independently of any other proposed enhancement measures as part of the effects management package associated with the resource consents.

Response: Our assessment looks at the values of the SEB under a scenario in which management actions required by the IMOA are carried out (i.e. Scenario 2). These actions should be secured under the conditions of the land exchange as well to ensure they are implemented. Potential issues of “double-dipping” raised by submitters are a legal issue that should be dealt with separately.

5. Proposed management plan details are insufficient. Management plans are to be developed post-approval, creating unacceptable uncertainty. Without ongoing management, the SEB would not constitute a comparable exchange.

Response: We agree that details of the conservation enhancement should be fully specified before approval, not deferred to post-decision planning. The two-year timeframe proposed for applicant management before transfer to DOC is also very short.

6. The SEB wetlands are not comparable to the oxbow wetland on the PCL. They are different ecosystem types and the comparison is inadequate.

Response: Based on site visit observations, it appears the SLR report has overstated the value of the "kahikatea treeland" wetland, which is dominated by indigenous rushland with scattered trees, not kahikatea, and its area has been overstated (2,100 m² actual vs 5,001 m² reported). The degraded pastoral wetlands in the SEB are also likely to revert to streams once stock are excluded and riparian planting is undertaken.

Comments by Rt Hon Simon Upton, Parliamentary Commissioner for the Environment

1. The proposed two-year pest management obligation on the applicant before transfer to DOC is far too short given weed eradication may take decades and the cost should fall on the applicant, not DOC.

Response: We agree that the two-year timeframe is too short.

2. The bulk of the information provided in the ecological assessment report appears to be based on a previous assessment of area for the Ruataniwha Water Storage Scheme proposal over a decade ago. It seems that little ground-truthing has occurred in the SEB block since then.

Response: We agree that there is limited survey data, particularly in relation to fauna species. However, in the absence of recent targeted surveys, the SLR report provides an adequate assessment of habitat values for key fauna groups, and the assumptions made appear reasonable given the available information. Furthermore, the site visit Wildlands undertook in June 2026 also helped to confirm the character and value of key habitats on the SEB.

Comments by Ngāti Kahungunu Iwi Incorporated (NKII)

1. The ecological assessment is deficient and understates the significance of the affected ecosystems. The site contains significant old-growth forest, threatened species habitat, significant bat habitat, and internationally important braided river bird assemblages.

Response: We agree the SLR report has deficiencies in survey effort and that some conclusions rest on assumptions. Overall, we consider the terrestrial values are comparable between the DOC land and the SEB, although following the site visit, the wetland and freshwater values on the SEB have been assessed as lower than those on the DOC land.

2. The exchange cannot demonstrate genuine conservation enhancement or ecological equivalence. The affected PCL is on Threatened Land Environments (<20% indigenous cover) whereas most of the SEB's indigenous vegetation is in less-threatened environments.

Response: We agree with this comment and have acknowledged in our report that the DOC land is predominantly in Acutely and Chronically Threatened land environments, while most of the SEB's indigenous vegetation is in the "less reduced and better protected" category. The SLR report does not provide an analysis of whether the 1:4.2 ratio is appropriate given the difference in TEC classifications between the DOC and the SEB. This is material to whether the exchange genuinely enhances conservation values or merely exchanges quantity for quality.

Comments by John Menneer on behalf of the Hawke's Bay/East Coast Conservation Board

1. The proposed exchange does not deliver a like-for-like replacement — river valley and alluvial environments cannot be replaced by hill-country pasture/shrubland. The exchange results in a net loss of distinct and non-equivalent ecological values.

Response: We consider that ecological equivalence has not been achieved for freshwater and wetland habitat value between the sites. For example, there is no whio habitat on the SEB, and the wetland values are lower than the oxbow wetland bordering Dutch Creek. For terrestrial values, the SEB is likely of comparable overall value, acknowledging that the different Threatened Environment Classifications between the sites are unaddressed in the SLR report.

2. The indigenous vegetation on the SEB (approximately 100 ha) is largely early-to-mid successional shrubland lacking the structural complexity and ecological function of mature native forest — it does not provide an ecologically equivalent replacement.

Response: There are c.124 hectares of indigenous terrestrial vegetation on the SEB, of which c.64 hectares comprise forest and treeland. This is approximately 44 hectares more than what occurs on the DOC land. The structure and ecological function of forested areas are likely to be equivalent between the sites, noting that both are subjected to deer browse.

Comments by Hon. Nicola Grigg

1. The proposed enhancement appears to rely on future measures such as fencing, stock exclusion, pest and weed control, wilding pine control, restoration planting and legal protection. This may result in a gap between immediate project effects and later restoration gains, with benefits that could take time to materialise.

Response: The time gap between immediate project effects and later restoration gains should be included in assessments of equivalency.

B. Responses to submissions on freshwater ecology

Comments by KM Water on behalf of Forest and Bird

1. Fish spawning habitats were not assessed in the SLR report, despite being listed as a specific matter for consideration in the DOC comparative assessment guidance document. All indigenous fish found in Dutch Creek and the Mākaroro River, except eels, are gravel bed spawning species, with bluegill bullies and torrentfish thought to require a downstream spawning migration.

Response: Provision of spawning habitat and connectivity for downstream spawning migration is important in order to ensure sustained presence of the relevant fish species. Among the SEB streams, Donovan's Stream appears not to offer much suitable gravel bed for spawning, as (according to the SLR report) much of the bed is "heavily vegetated" and non-vegetated areas have fine sediment, which will fill the gaps between stones that fish require for spawning. Middle Stream and North Stream appear to have more suitable habitat, however the lengths of these streams within the SEB land is relatively short. South Stream was not surveyed for the SLR report, nor seen by Wildlands during the 16 June site visit, therefore it is unknown whether its stream bed is suitable for spawning. In relation to connectivity for spawning migrations, Middle Stream and (to a lesser extent) North Stream are connected to upstream reaches where fish movements are possible. However, the length of these streams within the SEB land is relatively small. Donovan's Stream and South Stream are not connected to an extensive stream network, so are unlikely to support fish migrations over significant distances.

2. The fish assemblage of Dutch Creek and the Mākaroro River require a diversity of instream habitats (i.e. pools, riffles, shallow backwaters, rapids) that are not available in the SEB streams, even if fish could access them by a connected river network. The loss of extent and diversity of physical river habitat is not accounted for.

Response: It is true that the SEB streams do not contain the same diversity of flow types as found in the Mākaroro River and Dutch Creek. As described above in the Section entitled Aquatic Fauna and Habitats, some combinations of depth and water velocity present in Dutch Creek are not available in the SEB streams, which may prevent some fish species from inhabiting the SEB streams.

3. "In the Mākaroro catchment, redfin bully and bluegill bully are only recorded in Dutch Creek, and common smelt are only recorded in the Mākaroro mainstem and Gold Creek, but not in Dutch Creek. Dutch Creek appears to be a stronghold for *Gobiomorphus* taxa. None of these values are identified in the SLR report... the SLR report understates the significance of the indigenous fish values in Dutch Creek and does not adequately identify those of the Mākaroro River."

Response: The sources cited by KM Water (NZ Freshwater Fish Database, Wilderlab eDNA records, Young et al. 2013) have been reviewed and no fish species additional to those described in the SLR report were found.

4. “Kōaro (*Galaxias brevipennis*) are unlikely to form landlocked communities because they require cool, clear, well-oxygenated lakes with suitable tributary spawning habitat and low predatory fish abundance. I understand trout are to be released into the reservoir to create a fishery resource. There is a risk of invasion of the reservoir by pest fish and plants through improvements to public access for boating. Given these factors I find it unlikely that kōaro will successfully establish in the reservoir, and therefore they are unlikely to persist in the SEB streams should the dam proposal go ahead.”

Response: This comment provides helpful detail on the reasons that kōaro are unlikely to persist in the SEB streams after these streams are isolated by the dam.

5. “None of the management actions listed, ostensibly to maintain ecological diversity and functionally intact aquatic systems, will have a direct benefit on the diversity of the indigenous fish fauna in the SEB streams. The critical habitat types and extent are not available in the SEB streams, and there will be no connectivity for migrant fish to enter the streams once the reservoir is filled, even if riparian habitats are improved. Fish diversity is likely to decline over time in the SEB streams as a result of the loss of connectivity with the wider river network.”

Response: This comment is partly correct but is overstated. Some instream habitat features (e.g. deep, fast-flowing reaches) that some fish species require will not be provided by SEB streams, which will likely prevent SEB streams being colonised by species such as torrentfish and bluegill bully. Riparian planting will not alter stream depth or water velocity. However, riparian vegetation will provide overhead cover that species such as eels, dwarf galaxias and kōaro require, and eventually will drop large branches which will increase instream cover. Connectivity will not be completely cut off if trap and transfer is implemented on an ongoing basis, so eels will be able to access SEB streams. However, without effective assistance in downstream migration, eels will be unable to complete their life cycles. Fish diversity in SEB streams is likely to decline from its present level due to the loss of kōaro.

Comments by Hawkes Bay Regional Council

1. Waterways within the SEB are generally smaller, more modified systems with moderate ecological values and reliance on future restoration to enhance condition.... ecological condition is likely to rely on future management interventions such as stock exclusion, pest control, and restoration.

Response: This comment highlights that relying on future management interventions involves a risk that interventions may not achieved the expected ecological benefits for a variety of reasons. This risk should be included in assessments of equivalency.

Recommended Conditions

Fencing

- i. The Approval holder must, at its cost, construct all boundary fencing to exclude stock and deer on the external boundary of the land being transferred to the Crown. The required locations and fence specifications must be identified in a pre-settlement fencing plan agreed by the parties.
- ii. Maintenance and repair of the fence will be the responsibility of the approval holder for a minimum of 10 years.

Biosecurity Act

- iii. The Approval holder will at its cost ensure that the land to be transferred to the Minister is compliant with any applicable “good neighbour” rules under the Biosecurity Act to the Minister’s satisfaction prior to the Settlement Date.

Ecological Restoration Plan (ERP)

- iv. No later than 30 working days before settlement, the Approval holder must provide to DOC for its approval an Ecological Restoration Plan (ERP). The approval is to confirm that the ERP provides the means to achieve the purpose and addresses the matters set out in the Condition below.
- v. The purpose of the ERP is to set out the methods the Approval Holder will implement to:
 - (a) Control all weed species at the site so that no flowering or fruiting individuals remain, and carry out ongoing control for a minimum of 10 years.
 - (b) Protect and improve the condition of existing indigenous vegetation on the site.
 - (c) Manage areas of exotic vegetation (including pasture and rank grass) to establish self-sustaining indigenous habitats with a minimum 80% canopy cover of woody indigenous species. Timeframes for this to be achieved must be included in the ERP and will vary depending on the approach proposed (i.e. revegetation planting vs managed regeneration).
 - (d) Revegetate the 10-metre-wide riparian yard of all streams in Donovan Gully (minimum 1,200 metres stream length) on both sides of the stream.
 - (e) Achieve a minimum 90% success rate and 80% canopy cover for newly planted indigenous vegetation after a minimum maintenance period of five years. If a 90% success rate and 80% canopy cover is not achieved within five years, ongoing maintenance and management will be required until this minimum requirement has been achieved.
 - (f) Ensure that the timeframes for management activities remain consistent with the consent conditions associated with the construction of the dam, and do not result in DOC being required to undertake management work that is otherwise required to be carried out by the Approval Holder.
- vi. The ERP must be prepared by a suitably qualified and experienced ecologist.
- vii. The Approval Holder must undertake the anticipated activities in accordance with the approved ERP.
- viii. The ERP may be amended by the Approval holder at any time, provided the amendments are:
 - (a) For the purpose of improving the efficacy of the management of weeds;

- (b) For the purpose of providing for better planting and maintenance methodology(s). This may include substituting plant species if it is found that a more appropriate plant species is better suited to this environment, while achieving biodiversity enhancements;
 - (c) For the purpose of applying best practicable measures;
 - (d) Consistent with the conditions of this approval; and
 - (e) Submitted in writing to DOC for its approval prior to any amendment being implemented.
- ix. The Applicant must provide DOC with an annual report within 30 working days after each year of implementation of the ERP. The first annual report will be due 12 months after approval of the ERP. The report must summarise planting undertaken, weed management, monitoring results for weeds and restoration planting, any target exceedances for weeds and/or any ecological restoration minimum success rates that have not been achieved, and any response actions implemented.
- x. Plants must be eco-sourced within the Ruahine Ecological District and sourced from a reputable nursery able to provide provenance information on request. All plants must be healthy, not root-bound, and weed free at the time of planting.

Pest Mammal Management Plan (PMMP)

- xi. No later than 30 working days before settlement, the Approval holder must provide to DOC for its approval a Pest Mammal Management Plan (PMMP). The approval is to confirm that the PMMP provides the means to achieve the purpose and addresses the matters set out below.
- xii. The purpose of the PMMP is to set out how mammalian pest control will be undertaken on the SEB to achieve the management targets in Table 1 below.

Table 1: Mammalian pest control timeframes and targets

Pest Species	Timeframe	Management Target
Possums	10 Years, or until target is achieved (whichever is longer)	< 5% Residual Trap Catch (forest and scrub areas)
Deer	10 Years, or until target is achieved (whichever is longer)	Faecal pellet count = 0 (site wide)
Rats	10 Years, or until target is achieved (whichever is longer)	< 5% Tracking Tunnel Index (forest and scrub areas)
Mustelids	10 Years, or until target is achieved (whichever is longer)	< 5% Residual Trap Catch (site-wide)

Cats	10 Years, or until target is achieved (whichever is longer)	No target set due to highly transitory nature of feral cats, although all kills should be documented (site wide).
------	--	---

- xiii. The PMMP must be prepared by a suitably qualified and experienced ecologist
- xiv. The Approval holder must undertake all activities in accordance with the approved PMMP.
- xv. The PMMP may be amended where the amendment is improving practicality or effectiveness. The Approval holder must submit the amended PMMP in writing to DOC for approval, prior to any amendment being implemented.
- xvi. The Approval holder must provide DOC with an annual report within 30 working days after each year of implementation of the PMMP. The first annual report will be due 12 months after approval of the PMMP. The report must summarise pest control undertaken, monitoring results, any target exceedances, and any response actions implemented.

Trap and transfer of eels

It is our understanding that trap and transfer of eels and other indigenous fish species is already required under existing conditions for the Dam (RWSS Conditions Schedule Six - Project F Update 8.2.14 (Mitigation and offsetting) Project C Ruataniwha Threatened Species Habitat Enhancement Project). Therefore, conditions for native fish trap and transfer are not repeated here.