BEFORE A HEARINGS PANEL
OF THE FAR NORTH DISTRICT COUNCIL

I MUA NGĀ KAIKŌMIHANA MOTUHAKE O TE HIKU O TE IKA

Under the	Resource Management Act 1991 (RMA)
In the matter	of a request for rezoning of land in the Kerikeri-Waipapa area under the proposed Far North District Plan

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STATEMENT OF EVIDENCE OF PHOEBE LOUISE ANDREWS IN SUPPORT OF SECTION 42A REPORT FOR HEARING 15D

ECOLOGY

10 September 2025

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1. INTRODUCTION

1.1 My full name is Phoebe Louise Andrews.

1.2 I am a Senior Ecologist at Wildland Consultants Ltd. I have been in this position since January 2019.

1.3 I have a Bachelor of Applied Science in Biodiversity Management and Animal Management (2018), and a Post Graduate Diploma in Science with Distinction in Conservation and Biosecurity (2024). I have practised as a consultant ecologist for over 6 years and have managed and been responsible for undertaking many ecological assessments for a wide variety of projects, from large renewable energy projects, multi-staged subdivisions, bulk earthworks and cleanfills, and pine removals, to small residential developments. I have reviewed numerous consents as an approved specialist on behalf of Auckland Council and have been involved with reviewing ongoing private plan change applications for the Auckland region.

1.4 I have been asked to provide evidence in relation to ecology, to support the evaluation report prepared under s 42A of the RMA.

1.5 I have reviewed the Bioresearches' April 2022 report (**Ecology Report**) and the ecology evidence prepared by Ms Barnett (June 2025) in detail, prepared for the Kiwi Fresh Orange Company (**KFO**) rezoning submission. I have also reviewed the relevant sections of the KFO submission (October 2022), the Structure Plan (by The Planning Collective, October 2022), the hydrology report (by e2 Environmental, October 2022), the landscape report (by Littoralis Landscape Architecture, October 2022), and the infrastructure Report (by Infrastructure Solutions, October 2022).

1.6 Following my review, I provided advice to the Far North District Council (**Council**) in June and July 2025. Prior to that, at a meeting with the submitter's representatives in late February 2025, Council staff requested further information seeking clarification related to the presence of mud fish in drains, bat presence, and downstream ecological effects of the floodway. These matters are addressed in Ms Barnett's evidence, although Ms Barnett has not fully addressed the matters

queried in my advice to Council (June and July 2025). I have also briefly read over the relevant sections of Te Pātukurea – Kerikeri Waipapa Spatial Plan. I have also reviewed the evidence prepared by Mr Jon Rix in review of the proposed flood mitigation.

1.7 I have read and am familiar with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023. I have complied with the Code of Conduct in preparing my evidence and will continue to comply with it while giving oral evidence before the Hearings Panel. I confirm that my evidence is within my area of expertise except where I state that I am relying on the evidence of another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed in my evidence.

2. SCOPE OF EVIDENCE

2.1 The scope of my evidence is to review the ecological components and provide technical ecological support for the Rezoning Submissions for the Proposed District Plan (**PDP**).

2.2 My evidence will cover the following matters:

(a) Site description and proposal;

(b) KFO ecological assessment methodology;

(i) Mapping ecological features;
(ii) Presence of indigenous fauna;
(iii) Mudfish
(iv) Bats
(v) Assessment of significant areas;
(vi) Risk of urban rezoning if there is uncertain or insufficient information

(c) Effects management;

(i) Inadequate effects assessment
(ii) Effects on bats;
(iii) Effects on mudfish
(iv) Effects of the floodway;

(d) Conclusion.

3. SUMMARY OF EVIDENCE

3.1 The Ecology Report and evidence of Ms Barnett provide high-level assessments. Not all habitats have been mapped within the site or the proposed floodway footprint, and populations of At Risk or Threatened fauna that may be impacted are not fully understood. As such, there are a number of uncertainties that remain, and effects that have not been addressed that require further assessment/surveys before a full understanding of the appropriateness of the rezoning proposal can be evaluated.

3.2 To fully understand the effects associated with the proposed rezoning, I recommend a full assessment of the potential effects is provided, which may require more detailed on-site surveys. There is still uncertainty regarding the ecological effects of the floodway that will be required to facilitate urban development across most of the site. Allowing for urban development of the site will also result in ecological effects associated with increased noise, lighting, human activity, pets, and pests that have not been discussed. It is unclear if such effects can be addressed by precinct plan provisions and at resource consent stage to ensure there are no inappropriate residual adverse effects.

4. SITE DESCRIPTION AND PROPOSAL

4.1 The site comprises pasture and cropping with freshwater habitats comprised of farm drains, ponds, streams, and the Kerikeri / Waipekakoura River, Puketotara Stream and natural wetlands. The Kerikeri / Waipekakoura River is buffered by

mature indigenous vegetation. The gully system to the north of the golf course comprised two wetlands, a large rush dominated wetland on the gully floor of the Kerikeri river and a large raupō reedland in the upper gully and patches of stream habitats interspersed with wetland from the upper gully system to the river.

4.2 The proposed rezoning includes changing from rural to live urban zoning for approximately 197 ha of land (i.e. the site) between the Kerikeri and Waipapa townships, including areas for General Residential, Mixed Use, and Natural Open Space. KFO's proposal includes rezoning with specific precinct provisions and will require the development of a floodway structure to manage flood hazards. The floodway is placed within an existing flow path where a full delineation of freshwater habitats has not been undertaken. The floodway proposes to restrict spill over from the Kerikeri River and discharge floodwater in a different location on the site.

4.3 A site visit was not within the scope of my review.

5. KFO ECOLOGICAL ASSESSMENT METHODOLOGY

5.1 The Ecology Report prepared by Bioresearches that was provided with the KFO submission is relatively brief and provides only a high-level constraints assessment.

5.2 The additional evidence by Ms Barnett builds on the constraints assessment, providing high-level assessments of the effects of the floodway and the effects on bats and mudfish (in response to queries raised by Council staff).

5.3 However, I consider that there is uncertain or insufficient information in relation to ecological features on the site. I identify the key areas below and comment on the risk of urban rezoning if there is uncertain or insufficient information.

Mapping of ecological features

5.4 The KFO ecological assessments are based on desktop and field surveys. Desktop assessments included review of the relevant mapping databases and fauna databases for bats and fish, and eDNA records.

5.5 Bioresearches has mapped most of the streams, ponds, and natural wetlands in accordance with the Northland Regional Policy Statement (**NRPS**) and the National Policy Statement for Freshwater Management (**NPS-FM**), however some putative streams and wetlands were identified that need a full delineation. In addition, the evidence of Ms Barnett states that some of the farm drainage channels could be assessed as modified natural streams.[1]

5.6 A field-based definitive assessment, including delineation of all wetlands and freshwater features, would provide better context for understanding the proposal and its associated effects. This is particularly important for the proposed floodway, which is located where assessments currently rely on assumptions. Ms Barnett states "*If streams or wetlands are present within the alignment, then the ecological value of the habitats are likely to be Low (based on the values of the habitats observed on site)…"*.[2]

5.7 I have not been to the site so I cannot make comment on the accuracy of the mapping. However, from aerial imagery I can see some areas that may support freshwater habitats that have not been assessed. The red circle in the figure below (Figure 2 from the Bioresearches report) indicates an example of a potential wetland or stream habitat, or overland flow path, but appears not to have been assessed.

1 Statement of Evidence of Treffery Barnett on behalf of Kiwi Fresh Orange Company Limited (Ecology), 16 June 2025 (**Barnett Evidence**) at [42(b)].

2 Barnett Evidence at [63].

Figure 2. Putative stream and classified stream draining south-east towards top of vegetated gully.

Presence of indigenous fauna

5.8 The Ecology Report and evidence of Ms Barnett provide high-level assessments regarding indigenous fauna. While some relevant fauna databases were reviewed as part of the project, key faunal groups such as lizards have been omitted. The report does not discuss species that may be present at the site in the habitats available, either permanently or intermittently.

5.9 The assessment is high level and no formal fauna or threatened species surveys have been undertaken. While the available information on relevant fauna databases could provide a reasonable understanding of the indigenous species that habitats on site may support (i.e. land snails, reptiles, and birds), targeted surveys would be required before any removal of potential habitats is carried out. It is difficult to properly assess the ecological effects of urbanising the site in the absence of targeted fauna surveys. This would include obtaining a better understanding of any habitats for fauna (including habitats outside riparian, forest, and wetland areas). In addition, bats and mudfish require further consideration as described in more detail below.

Bats

5.10 Ms Barnett's evidence outlines that, given the presence of bat records around the Puketi Forest (11 kilometres from the site), there is potential that bats use the riparian corridor.[3] As such, any trees over 15 centimetres dbh at the site that are proposed for removal should follow standard bat roost tree removal protocols. Given the potential effects associated with removal of habitat (i.e. roost trees outside the riparian corridor) and increased lighting at the site, and the very high threat status of indigenous bat species, it should be clarified whether potential bat roost trees are present on site and what level of bat activity occurs in the riparian corridor.

Mudfish

5.11 Mudfish are known to be able to survive dry periods within their habitats provided there are damp surroundings and cover (such as logs, tree roots, and vegetation) to keep them alive. Mudfish have been shown to occupy occasionally dry straightened farm channels with dense cover of macrophytes. The ecological survey that guided the Ecology Report was completed in March 2022, which is a relatively dry time of year. As such, I offer caution in discounting the presence of mudfish within the farm drains due to a lack of water during the site visit and encourage further investigations to be sure (noting that I have not been to site). In addition, Ms Barnett's evidence does not mention the likelihood of mudfish occurring within natural wetlands, constructed online ponds, or slow flowing streams. Nor does it describe the potential habitat values of such ecological features at the site. Of particular concern would be features within the floodway as this will require in stream works. Mudfish have been recorded in wetlands and swamps in the surrounding area. In the absence of surveys and records at the site, their presence cannot be discounted. I also consider that six eDNA samples at three locations within the wider Kerikeri catchment is not comprehensive enough to rule out their presence.

3 Barnett Evidence at [56].

Assessment of significant areas

5.12 The landscape assessment attached to the KFO submission states "two of the largest and most intact areas of indigenous vegetation fall within a Significant Natural Area identified by the Department of Conservation identified as being site PO5/086, Kerikeri River Remnants". The Structure Plan in the KFO submission then states a detailed assessment of this area has not been undertaken to confirm it is a "Significant Natural Area", but this will be undertaken prior to the implementation of the Structure Plan.

5.13 Policy 4.4.1 of the NRPS relates to maintaining and protecting significant ecological areas and habitat. Areas of significant indigenous vegetation and significant habitats have the highest level of protection and the criteria to identify these areas are provided in Appendix 5.

5.14 An assessment of indigenous vegetation and habitats on site against the Appendix 5 criteria for determining significance has not been provided as part of the ecology evidence for the proposed rezoning. It is not clear how the proposed plan provisions will require assessment of the area in question against the significance criteria or provide for its protection, if Policy 4.1.1(1) of the NRPS applies.

Risk of urban rezoning if there is uncertain or insufficient information

5.15 Without a clear understanding of the extent of ecological features and the actual or potential presence of At Risk and Threatened species, there remains a high level of uncertainty regarding the ecological values of the site.

5.16 As such, the assessment of the ecological effects associated with the proposed rezoning can only be high-level and is built on assumptions. If these assumptions are incorrect, the development of the site as an urban area may ultimately result in significant residual adverse effects on biodiversity, as discussed in the effects management section below. For example:

(a) Improper allowances for riparian areas or setbacks could result in the degradation of water quality and habitat for fauna within important freshwater features.

(b) Improper management of lighting and noise could result in deterrence of indigenous fauna from important habitats that are an essential part of their lifecycle, or habitat corridors that assist with species moving across the landscape.

6. EFFECTS MANAGEMENT

Inadequate effects assessment

6.1 The Ecology Report is a constraints assessment focused on identifying key ecological constraints to development at the site and does not address effects or provide mitigation management measures.

6.2 The evidence prepared by Ms Barnett addresses effects relating to the floodway, mudfish, and bats (following feedback from Council staff) and states that effects can be addressed through detailed design at resource consent stage. The Ecology Report and associated evidence do not address other effects relating to the rezoning, such as effects of higher density housing, increased human activities, pets, pests, lighting and noise spill.

6.3 For a greenfield proposal of this scale, I consider that a full assessment of the potential effects associated with rezoning and the future development of the site should have been provided, along with appropriate management measures. This would require a better understanding of the ecological features of the site as set out above.

6.4 To the extent that the Ecosystems and Indigenous Biodiversity Chapter is intended to apply, changing the zoning away from Rural Production would result in a more permissive threshold for indigenous vegetation clearance and any associated land disturbance if the area includes “remnant forest” (as proposed in the s 42A report,

from 50 m^2 to 100 m^2). If the area does not include "remnant forest", the threshold would shift from 500 m^2 to 100 m^2 (as proposed in the s 42A report). KFO's experts have not identified whether the area includes "remnant forest" and the implications under the Ecosystems and Indigenous Biodiversity Chapter therefore cannot be assessed further.

6.5 The Ecology Report details that most of the riparian vegetation along the Kerikeri River on site will be protected at the subdivision consent stage through provision of a 20-metre esplanade reserve, and that this reserve width should be increased in places where the riparian vegetation extends beyond 20 metres from the stream edge. The report also identifies that all indigenous vegetation on the site should be protected via land covenants at subdivision consent stage. I agree with the protection of indigenous vegetation, although the most appropriate mechanism for this is a planning matter for Mr Wyeth.

6.6 I consider that, to enable proper assessment of the KFO proposal, a full list of the proposed provisions relating to ecology (e.g. riparian setbacks, vegetation removal thresholds, etc) should have been provided with a discussion of the effects (positive or negative) of these changes and proposed measures to manage these effects, as appropriate.

Effects on bats

6.7 The KFO experts and the precinct plan appear to rely on 20 m esplanade reserves and Natural Open Space zoning for ecological protection. While that may cover most contiguous indigenous vegetation, potential bat roost trees are not always protected (e.g. exotic trees with a dbh > 15cm that have suitable features). As such, it may be appropriate for the proposed precinct plan to provide additional provisions requiring bat surveys/management in line with best practice and tree removal protocols to be implemented prior to the removal of any tree larger than 15 cm dbh.

6.8 In addition, the Ecology Report and ecological evidence on behalf of KFO does not address the potential effects of increased house, street, and vehicle lighting on bats

that may use the riparian corridor for roosting, foraging, or commuting. Specific building and lighting setbacks from the riparian corridor and light spill mitigation measures may be required. Appropriate measures to address lighting effects should be developed based on the outcome of a bat survey and should be integrated into the precinct provisions.

Effects on mudfish

6.9 As discussed below, the floodway has the potential to change the way in which water moves across the landscape. While wetlands are protected under the National Environmental Standards for Freshwater (**NES-F**) and PDP, artificial farm drains are not. As discussed above, artificial farm drains may provide habitat for mudfish, if populations are present. If mudfish are present, the change in land use has the potential to result in degradation and loss of habitat, which could result in the subsequent loss of populations.

Effects associated with the floodway

6.10 Ms Barnett's evidence states that "Investigation of the status of the flood mitigation measures as 'specified infrastructure' should be assessed when the detailed design and future resource consents are sought."[4]

6.11 I understand that this relates to comments in the Ecology report in relation to the NPS-FM and the NES-F. In particular, the floodway would need to qualify as 'specified infrastructure' to be assessed as a discretionary activity. Otherwise, the Ecology report states that reclamation of the majority of natural wetlands is a prohibited activity, in most cases vegetation alteration or removal within 10 m of a natural wetland is a non-complying activity and alteration of the hydrology within 100 m of a natural wetland is a non-complying activity. This is addressed further in Mr Wyeth's section 42A report.

4 Barnett Evidence at [42(d)].

6.12 Given that Ms Barnett relies on the protection afforded to natural inland wetlands under the NES-F,[5] I consider it appropriate to have a better understanding of the level of protection under the NES-F before rezoning occurs (rather than deferring consideration of whether the floodway will qualify as 'specified infrastructure'). This would provide greater certainty about whether it is feasible for effects to be addressed by precinct plan provisions and/or at the resource consent stage and therefore whether the site is suitable for urbanisation.

6.13 Irrespective of the activity status, to be in line with the objectives and policies of the NPS-FM, offsetting any wetland loss needs to include wetland values and extent. Understanding the proposed loss and offset requirements as part of the rezoning would provide greater certainty about whether it is feasible for effects to be addressed by precinct plan provisions and/or at the resource consent stage and therefore whether the site is suitable for urbanisation.

6.14 Mr Rix's evidence and the e2 Environmental hydrology report lodged with the KFO submission highlight that the floodway is necessary infrastructure to facilitate development within the flood hazard overlay.

6.15 The assessment of the proposed rezoning should therefore consider the ecological effects of the floodway in detail.

6.16 As noted in Mr Rix's evidence, it is likely that mitigation design, flood characteristics and flood extents will change during subsequent design phases, possibly significantly, because decisions that impact hydraulics and hydrology are often influenced by other project risk-management factors such as geotechnical issues, wider consenting risks and cost (design and construction).

6.17 While I agree that conceptually a floodway has the potential to result in improved aquatic ecological values (through a net increase in planted riparian habitats, habitat for fauna, buffering and shade to freshwater habitats and connectivity), it

5 Barnett Evidence at [67].

also has the potential to result in adverse effects on ecology. For example, as discussed by Ms Barnett and expanded on here, the floodway may result in:

(a) the loss or modification of existing stream and wetland habitats that have not been fully mapped or assessed;

(b) harm to indigenous fauna, including At Risk species;

(c) changes in hydrology within the catchment; and

(d) increases of contaminants into receiving environments.

6.18 Ms Barnett provides a high-level assessment of the effects in accordance with the Ecological Impact Assessment EIANZ guidelines (Roper-Lindsay et al, 2018). I agree with the use of the EIANZ guidelines along with expert opinion as a robust and transparent approach. However, in this case, I consider that assessment of values and effects are based on assumptions and lack certainty. For example, in relation to the loss and modification of current habitats Ms Barnett states that "If streams or wetlands are present within the alignment, then the ecological value of the habitats are likely to be Low (based on the values of the habitats observed on site), with the magnitude of effects is likely to be moderate but temporary…" She concludes that "This will result in a Low level of effect…" and "Once the detailed design is available at resource consent stage, a more comprehensive ecological assessment is recommended to ensure that and habitats are more comprehensively assessed and the ecological effects on habitats are appropriately managed."[6]

6.19 As discussed above, if the assumptions are incorrect, the development of the site as an urban area may ultimately result in significant residual adverse effects on biodiversity. Given the requirement for a floodway to facilitate urbanisation of much of the site, providing detailed design of the floodway and a comprehensive assessment of effects as part of the rezoning would provide greater certainty about whether it is feasible for effects to be addressed by precinct plan provisions and/or

6 Barnett Evidence at [63].

at the resource consent stage and therefore whether the site is suitable for urbanisation.

6.20 Ms Barnett generally agrees with the ecological components of the design outlined in e2 Environmental report[7] where the following will be implemented into the detailed design:

(a) low flow channel for local drainage and low flows;

(b) vegetation areas; and

(c) velocity controls and scour and erosion protection at points where a risk is identified.

6.21 Ms Barnett's evidence assesses the level of effect of increases in velocity and/or volume within the floodway on downstream aquatic habitats as low, provided the velocity of the water through the constructed floodway is attenuated through design (e.g. the proposed vertical drops) and the downstream extent is specifically designed to reduce both velocity and prevent erosion and scour.[8] There is insufficient information about the final design to enable effects to be properly assessed at this stage.

6.22 Ms Barnett's evidence provides appropriate high-level recommendations to avoid harm or disturbance to indigenous fauna such as avoiding bird breeding season, or pre-felling bird nest surveys, fish recovery and relocation, and implementation of a Lizard Management Plan.[9] However, bat management is not mentioned.

6.23 The discussions above show that the ecological effects of the floodway are uncertain. In my view, urban rezoning of the site should be preceded by a better understanding of the ecological habitats and values within the proposed floodway, and demonstration that the required mitigation is feasible within the site (e.g. there is room to offset stream and wetland values and extent) and that effects on

7 Barnett Evidence at [59].
8 Barnett Evidence at [65].
9 Barnett Evidence at [66].

the receiving environment can be avoided or managed. Consideration should also be given to lag times associated with establishing vegetation growth and maintenance cycles.

7. CONCLUSION

7.1 While rezoning may provide opportunities to ensure that future land development and urban intensification protects and enhances sensitive ecological areas, a full assessment of the potential effects should be undertaken to fully understand the effects associated with the proposed rezoning and ensure that this opportunity will be realised.

7.2 Given the level of uncertainty that remains regarding the ecological effects of the floodway and the increased noise, lighting, human activities, pets, and pests associated with urban developments, it is unclear if all effects can be addressed by precinct plan provisions and/or at resource consent stage. More detailed assessments and surveys would be required to fully understand the level of effects and appropriate effects management.

Phoebe Louise Andrews

10 September 2025