BEFORE WAIPĀ DISTRICT COUNCIL

UNDER	the Resource Management Act 1991 ("**RMA**")
AND	
IN THE MATTER	of Proposed Plan Change 14 to the Waipā District Plan ("**PC14**")

STATEMENT OF EVIDENCE OF DR GRAHAM THOMAS USSHER ON BEHALF OF FONTERRA LIMITED

ECOLOGY

17 FEBRUARY 2025

Russell McVeagh

D J Minhinnick / S P Grimberg
P +64 9 367 8000
F +64 9 367 8163
PO Box 8
DX CX10085
Auckland

1. INTRODUCTION

1.1 My full name is Graham Thomas Ussher.

1.2 I am a Principal Ecologist at RMA Ecology Ltd having held that position for nearly 9 years.

1.3 I hold the qualifications of Bachelor of Science (Zoology), Master of Science (Conservation Ecology) and Doctor of Philosophy (Conservation Management) from the University of Auckland, New Zealand.

1.4 I have over 30 years' experience in environmental research and consulting with a particular focus on land-based ecology and methods for providing improvements to indigenous biodiversity.

1.5 I have previously been employed as:

(a) A lecturer in Environmental Science at the University of Auckland (2000 – 2003).

(b) Regional Ecologist for the (former) Auckland Regional Council (2003 – 2007), with a focus on projects that managed species and ecosystems, and the restoration of Auckland coastal parklands.

(c) A Principal Ecologist at Tonkin & Taylor Ltd, Environmental and Engineering consultants, Auckland (2007 – 2016) where I was a senior-level ecologist and helped lead the Ecology Team. Over my period of employment at Tonkin & Taylor Ltd, I managed, undertook fieldwork, reported on or reviewed in excess of 120 projects involving ecological effects assessments, management and ecological mitigation / restoration in New Zealand spanning small to large scale effects, and covering all aspects of land use.

1.6 I founded RMA Ecology Ltd in 2016. In my role as director, I have undertaken approximately 260 projects since 2016 that have involved site assessment, impact evaluation, effects management design (including offsetting), management plan preparation, and construction management, including lizard, fish and plant salvage, stream reconstruction, and ecological monitoring and reporting.

1.7 My project experience spans land development, infrastructure, power generation, resource extraction, water management, and roading sectors. My

involvement in projects ranges from pre-purchase due diligence, preliminary / concept development design, precinct and private plan change assessments, resource consent applications, and construction supervision, implementation, monitoring and reporting. Most of my project involvement has been in rural and greenfield sites where ecological values have been diverse, degraded and require specific interpretation in regard to national, regional or district polices around biodiversity classification, and interpretation of scale, significance and management of potential adverse effects.

1.8 Since the National Policy Statement on Freshwater Management 2020 (**NPS-FM**) was gazetted, I have personally undertaken at least 200 wetland assessments under the NPS-FM associated protocols. This has included the application of vegetation, hydric soil and hydrological assessments using the methods outlined in the Wetland Delineation Protocols of the NPS-FM and the subsequent companion method documents produced or relied upon by the Ministry for the Environment, including the Clarkson Method, the Pasture Exclusion Method, and the US Corps of Engineers Wetland Delineation Manual. These documents are useful when paired with a more general understanding of wetland processes, ecology, landscape modification and interpretation of site ecology under the Resource Management Act 1991 (**RMA**) (including the definition of 'wetland' under the RMA).

1.9 This is relevant to the PC14 site, as key issues on this site have been the status of historic wetland and floodplain areas, stream health, and the ecological values remaining or which have recently colonised the site during its farming history.

1.10 I am co-author and reviewer of the ecological assessment report prepared by RMA Ecology for PC14 ("**PC14**") at 185-195 Swayne Road ("**Site**"), which is also referred to as the 'Mangaone Precinct' in the assessment.

1.11 I am familiar with the application Site and the surrounding locality; and visited the Site for a full walkover assessment on 26 January 2024 to confirm information previously obtained in our Site investigations undertaken in early and mid-June 2023. I have read the relevant parts of the application, submissions, further submissions, and the S42A report.

Scope of evidence

1.12 I have been engaged by Fonterra Limited ("**Fonterra**") to present ecological evidence in relation to PC14. My evidence will:

(a) briefly outline the key conclusions of the ecological values and effects assessment undertaken to support PC14;

(b) briefly outline the key conclusions of the Mangaone Precinct Structure Plan and design guidelines assessment undertaken to support PC14;

(c) briefly outline the key conclusions on provisions required to protect long-tailed bats and their habitat;

(d) respond to matters raised in the Officer's Section 42A Report ("**S42A Report**");[1] and

(e) respond to matters raised in other parties' submissions.

Code of conduct

1.13 I confirm that I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023 and I agree to comply with it. My qualifications as an expert are set out above. I confirm that the issues addressed in this brief of evidence are within my area of expertise, except where I state that I have relied on the evidence of other persons. I have not omitted to consider material facts known to me that might alter or detract from the opinions I have expressed.

2. EXECUTIVE SUMMARY

2.1 The ecology investigations at the Site included surveys for streams, wetlands, vegetation, lizards, birds, fish, and bats as part of a comprehensive assessment of ecological values and potential effects.

2.2 Key focal areas arising from the surveys have been around bats, bat habitat, wetland protection, and the protection and enhancement of the Mangaone Stream corridor that traverses the central part of the Site.

2.3 The Structure Plan,[2] Design Guidelines and provisions provide a comprehensive basis for the protection and enhancement of ecological values on the Site, with the setting aside of the Mangaone Stream Reserve, and the

---

1 *Proposed Plan Change 14: Mangaone Precinct & C10 Industrial Growth Cell – Hautapu, Incorporating Section 42A Report*, prepared by Hayley Thomas and Peter Skilton, WDC and dated February 2025 ("**S42A Report**").

2 See Appendix B – Mangaone Precinct Structure Plan, at p 10.

requirement for a Mangaone Stream Reserve Operational and Maintenance Management Plan.

2.4 The overall approach of setting aside a large area of land for the protection and enhancement of ecological values - including the Mangaone Stream, wetlands, indigenous vegetation, bats and bat habitat and other flora and fauna – is an excellent example of best ecological restoration practice, will continue Fonterra's current biodiversity focus for the Mangaone Stream corridor, and serves as a benchmark against which others should take note in this highly degraded catchment.

2.5 Recommendations have been made by the Council's Reporting Officer and by submitters to strengthen protections for bats and High Value Bat Habitat within the Mangaone Stream Reserve. I support the amendments proposed by the Reporting Officer and by submitters for a new issue statement,[3] objective,[4] two policies[5] and description[6] relating to the High Value Bat Habitat Area.

2.6 I also support the remediation of current barriers to fish passage on the Site, and for the inclusion of fish passage as a consideration during the detailed design of stormwater management devices on the Site, and agree that this should be addressed at the resource consent stage.

2.7 The Structure Plan, provisions, Design Guidelines, and the requirement for a Development and Operational Maintenance Plan provides assurance that values will be protected and enhanced such that an overall net-benefit for ecology is certain.

3. ECOLOGICAL VALUES AND EFFECTS ASSESSMENT

3.1 The ecology investigations included desktop reviews of wildlife and vegetation databases for regional and national values that could have been present on the Site, as well as extensive field investigations between June 2023 and January 2024. Specialist wildlife and environment investigations were undertaken by RMA Ecology Ltd for lizards, birds, wetlands, streams and indigenous vegetation, and by BlueWattle Ecology (under my instruction) for bats.

---

3 S42A Report Appendix 2, at Provision 7.2.21, p. 3.
4 S42A Report Appendix 2, at Objective 7.3.9, p. 6.
5 S42A Report Appendix 2, at Policies 7.3.9.1 and 7.3.9.2, p. 6.
6 S42A Report Appendix 2, at Provisions S27.2.26 and S27.2.27, pp. 31–32.

3.2 Site investigations applied appropriate methods, sampling regimes, mapping and data collation to provide a thorough description of the Site, its ecological values, the significance of those values, and the way in which those values are managed through the design of PC14, including whether more than minor adverse effects required biodiversity offsets or ecological compensation. The lack of specific comments by submitters and Council on these matters (apart from supportive and constructive comments regarding bats and protection of bat habitat) reinforces, in my opinion, the robustness of our investigations and the rigour with which I have applied ecological principles to the values assessed and to the effects management approach.

3.3 Overall, the ecology values reflect a highly modified landscape. Although most ecological features have been lost or are degraded, there are pockets of significant value and substantial opportunity to enhance the remaining features and return biodiversity and ecological function to the Site. The ecology assessment identified the following features:[7]

(a) **Context**: The predominant existing land use of the Site is pastoral agriculture.

(b) **Vegetation**: All original vegetation at the Site has been removed historically. There are four areas of mature planted native forest which have moderate-high ecological values. The proposed Mangaone Stream Reserve incorporates these areas for restoration and permanent protection.

(c) **Birds**: Eleven native and eleven exotic bird species typical of rural Hamilton were detected at the Site – none of which are At Risk, Threatened, or rare at a national, regional or local scale.

(d) **Bats**: Low levels of bat activity were recorded onsite within the Mangaone Stream corridor. Suitable foraging and commuting habitat exist, as well as trees with potential to provide roost cavities. There are 28 records of long tailed bats within 2.5 km of the Site. Given the high threat status of long-tailed bats and high use of the surrounding area, the Mangaone Stream corridor is considered high value bat habitat. The Mangaone Stream Reserve and the policies developed to manage this will encourage protection of bat habitat, including roosting and feeding areas, and enhance roost opportunities over time through protection and planting programmes.

7 Ecology Assessment, at section 3.4, p 32.

(e) **Lizards**: No native lizards were observed and none are likely to be present at the Site.

(f) **Wetlands**: There are nine (9) NPS-FM qualifying natural inland wetlands at the Site. They are located along the Mangaone Stream and range from low to moderately high in ecological value. Three former settling ponds are not classified as natural inland wetlands. The proposed Mangaone Stream Reserve incorporates these areas for restoration and permanent protection.

(g) **Streams**: There are 957 m of river at the Site (Mangaone Stream). The stream is typically degraded from deforestation and sedimentation. The proposed Mangaone Stream Reserve incorporates all of the Mangaone Stream through the Site and will restore and protect it.

(h) **Fish**: Native shortfin eel, longfin eel, and koura were recorded at the Site. In addition, banded kokopu have been recorded in the catchment and may be present at the Site.

3.4 The Structure Plan and Design Guidelines incorporate the recommendations for protection from Bluewattle Ecology and my report.

3.5 The Structure Plan incorporates ecological considerations through several key design drivers, which are expressed as:

(a) Improving ecological connectivity through the multi-purpose green corridor along Mangaone Stream to enhance and connect existing wetlands, regenerate native forest and riparian plantings, and create lateral connections to constructed treatment swales and green connections to the west.[8]

(b) Enhancing and protecting existing ecological features by enhancing existing ecological values and focusing on the creation of a green corridor around the Mangaone Stream.[9] This will enhance the stream and wetlands by excluding stock within the riparian zone and wetlands, and by undertaking riparian planting. The removal of stock will have a positive impact on water quality by reducing inputs of sediment, nutrient and faecal contamination. Planting with eco-sourced native vegetation is proposed along wetland and stream

8 Ecological Assessment, at section 4.0, p 34.

9 Ecological Assessment, at section 4.0, pp 35 – 36.

margins, to a minimum width of 10 m (for streams either side). Indigenous vegetation will be retained, and significantly expanded by undertaking native planting with eco-sourced species appropriate to the Site. For bats, controls have been included that stipulate low impact outdoor lighting designs, and which encourage future resource consents to incorporate limits to lighting intensity (lux) and colour temperature (kelvin), shielding light sources, restricting lighting during peak bat activity periods, and minimizing the duration of artificial lighting as much as possible.

(c) Rivers, natural wetlands and constructed wetlands will be buffered by a 10 m margin of native plantings. These buffers and the features themselves will be incorporated as part of the Mangaone Stream Reserve.

(d) Fish passage for native species will be maintained through any in-stream structures that are constructed. There are considerable additional opportunities on site where ecological enhancement could take place that remove existing impediments to fish passage and facilitate greater access to fish habitat where barriers currently exist.

3.6 The Structure Plan and supporting Design Guidelines provide for significant enhancements to the condition, extent, diversity, and connectivity of native vegetation, waterways, riparian margins, wetlands, and habitats for wildlife. The overall outcome from the proposed Plan Change will be a clear, positive, net-benefit for indigenous biodiversity values and ecological services. This net-gain will be most evident through the establishment of the ca.16-hectare Mangaone Stream Reserve, incorporating extensive native revegetation along riparian margins, and within and around natural and constructed wetlands.

3.7 The scale of ecological enhancement and protection works, and the commitment made by Fonterra to elevating biodiversity values, connectivity and ecological functions is unusual for a Site of this type and location, and should be applauded.

3.8 I am supportive of the policies and objectives of the proposed provisions in the S42A Report that require the protection of the Mangaone Stream Reserve, and the development of a Mangaone Stream Reserve Development and Operational Maintenance Plan.[10] My support includes the recommendations by Council and submitters for improved guidance on long-tailed bats and

[10] S42A Report Appendix 2, at Provision 15.4.2.91A(d)(i), (f) and (g) and Provision 21.2.7.1.

strengthened protections for bats and bat habitat within the Mangaone Stream Reserve. I support the inclusion of an issue statement,[11] objective,[12] policy[13] and description[14] of High Value Bat Habitat as described in the S42A Report.

4. PROTECTING LONG-TAIL BATS AND THEIR HABITAT

4.1 A bioacoustic survey for bats was undertaken on the Site by BlueWattle Ecology Ltd between 5 – 26 September 2023.[15] Bat monitors were placed within a stand of tree and near to the Mangaone Stream to survey for bat activity.

4.2 The survey resulted in a low rate of confirmed bat detections (two detections for the entire survey), which indicates that the usage of bats of the Site was very low during the time surveyed.

4.3 Despite the low level of confirmed detections, the results, in conjunction with known nearby bat populations, suggest that bats will regularly use the Site for foraging and commuting, and that the Mangaone Stream and its riparian vegetation are the most important habitats to protect, rather that the intensively grazed pastureland.

4.4 Mr Kessels (the bat expert from BlueWattle Ecology who conducted the survey) made several recommendations regarding methods for protecting bats and bat habitat. These included:

(a) controls on the use of artificial lighting;[16]

(b) recommendations regarding rules for building setbacks to the Mangaone Stream;

(c) the requirement to prepare a Mangaone Stream Reserve Management Plan[17];

(d) a comprehensive set of assessment criteria in relation to High Value Bat Habitat which forms the basis for assessing success of

11 S42A Report Appendix 2, at Provision 7.2.21, p. 3.
12 S42A Report Appendix 2, at Objective 7.3.9, p. 6.
13 S42A Report Appendix 2, at Policies 7.3.9.1 and 7.3.9.2, p. 6.
14 S42A Report Appendix 2, at Provisions S27.2.26 and S27.2.27, pp. 31–32.
15 Ecology Assessment, section 2.4, p 4.
16 Ecology Assessment, Appendix B: Bat Survey Report, at section 4.2.1, p 9.
17 As noted, subsequently changed following acceptance of a recommendation in the Officer's report that this name be changed to the 'Mangaone Stream Reserve Development and Operational Maintenance Plan', which I support.

enhancement actions within the Mangaone Stream Reserve Development and Operational Maintenance Plan;

(e) and that any removal of potential bat roost trees is governed by the Department of Conservation's 'Protocols for Minimising the Risk of Felling Bat Roosts' best practice guidelines.

4.5 In my opinion, the Precinct provisions provide a broad-ranging set of controls and criteria that will ensure that development within the Precinct does not unnecessarily impinge upon, or limit, the opportunities for protection and restoration of bat habitat on the Site. The additional recommendations made in the S42A Report strengthens the protections, which I support.

5. RESPONSE TO OFFICER'S S42A REPORT AND SUBMISSIONS

5.1 The only matter relating to ecology that is raised in the S42A Report is that regarding bats, the protection and enhancement of High Value Bat Habitat, and Council's requirement that greater assurance is provided for the protection of bats, with a focus on the Mangaone Stream Reserve.

5.2 The S42A Report supports the recommendations made by the Department of Conservation, Waikato Regional Council and Waipa District Council for additions or revisions to the Provisions in order to ensure that the protections for bats intended by Fonterra are strengthened.

5.3 I support the recommendations by the submitters and those made in the S42A Report for recommended additions or changes to the provisions proposed by Fonterra, for a new issue statement,[18] objective,[19] policy[20] and description[21] relating to the High Value Bat Habitat Area.

5.4 The provision of passage for native fish is raised in the submission by the Waikato Regional Council[22] in relation to remediation of existing fish barriers present on side drains and wetlands discharging to the Mangaone Stream, and also for the proposed stormwater network, which includes created wetlands and detention basins.[23] I support the recommendation in the S42A Report that a new information requirement is added for the Mangaone Stream Reserve

18 S42A Report Appendix 2, at Provision 7.2.21, p. 3.
19 S42A Report Appendix 2, at Objective 7.3.9, p. 6.
20 S42A Report Appendix 2, at Policies 7.3.9.1 and 7.3.9.2, p. 6.
21 S42A Report Appendix 2, at Provisions S27.2.26 and S27.2.27, pp. 31–32.
22 Submission of Waikato Regional Council, at pp 12–13.
23 Submission of Waikato Regional Council, at pp 13–14.

Development and Operational Maintenance Plan in this regard.[24] This will be addressed at the resource consent stage through detailed design of the stormwater infrastructure, and will be guided by the requirements of the National Environmental Standards and the Waikato Regional Plan.

6. CONCLUSION

6.1 PC14 includes substantial controls, criteria and requirements for the consideration of ecological values at this Site. The creation of the Mangaone Stream Reserve, with protections for wetlands, indigenous vegetation, bats and bat habitat and other flora and fauna – aligns with very good ecological practice and is an excellent outcome for this Site.

6.2 The Precinct provisions and the requirement for a Mangaone Stream Reserve Development and Operational Maintenance Plan provide assurance that the Mangaone Stream Reserve will deliver on the promised protections and benefits for ecology, and in doing so will have a positive effect well outside of the Site through the local landscape. The recommendations in the S42A Report and the submitters in regard to the Reserve and bat protections add to the certainty that considerable benefits to ecology will result from this Plan Change – and I whole-heartedly support these.

6.3 Overall, PC14 will help continue the transformation of this Site to a worthy example of sustainable integrated management that considers ecology, and the protection and enhancement of environmental values as integral parts of its development to industrial use.

6.4 The Structure Plan, provisions, Design Guidelines, and the requirement for a Development and Operational Maintenance Plan provides assurance that values will be protected and enhanced such that an overall net-benefit for ecology is certain.

Dr Graham Ussher
17 February 2025

[24] S42A Report Appendix 2, at Provision 21.2.7.1, p. 21.