

**BEFORE THE ENVIRONMENT COURT  
AT AUCKLAND**

**I TE KŌTI TAIAO O AOTEAROA  
KI TĀMAKI MAKĀURAU**

**IN THE** of appeals under Clause 14 of  
**MATTER** Schedule 1 of the Resource  
Management Act 1991

**BETWEEN** **BOONHAM**  
**(ENV-2021-AKL-000061)**

**MANGAWHAI MATTERS  
INCORPORATED & OTHERS**  
**(ENV-2021-AKL-000062)**

**Appellants**

**AND** **KAIPARA DISTRICT COUNCIL**  
**Respondent**

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**STATEMENT OF EVIDENCE OF RICHARD NEILSEN MONTGOMERIE  
ON BEHALF OF MANGAWHAI CENTRAL LIMITED  
(FRESHWATER AND TERRESTRIAL ECOLOGY)**

**17 December 2021**

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## **INTRODUCTION**

### **Qualifications and experience**

1. My name is Richard Neilsen Montgomerie.
2. I am the director of Freshwater Solutions Limited (Freshwater Solutions), a specialist freshwater environmental consultancy.
3. I hold the qualifications of Master of Science in Freshwater Ecology from Otago University.
4. I have worked as a freshwater scientist and environmental consultant throughout New Zealand and in Europe since 1998. I have held senior positions at Kingett Mitchell Limited, the Water Research Company (UK) and Golder Associates.
5. I specialise in monitoring and assessing the ecological effects associated with a wide range of activities including land development, discharges to water, land use change, water takes, damming and diverting water. I have managed a diverse range of environmental effects assessment projects throughout the Auckland Region.
6. I am familiar with the application site ("Site") and the surrounding locality.

### **Code of Conduct**

7. I confirm that I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note (2014) and I agree to comply with it. In that regard, I confirm that this evidence is within my 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.

## **BACKGROUND AND SCOPE OF EVIDENCE**

8. Mangawhai Central Limited ("MCL") engaged me to advise on freshwater and terrestrial ecological values and effects in relation to Plan Change 78 ("PC78") and the potential development at 83 Molesworth Road.

9. As part of this engagement, I managed the ecological assessment associated with the AEE reporting for PC78 and have visited the site on several occasions to survey the freshwater and terrestrial habitats on the site.
10. The scope of my evidence is:
  - (a) terrestrial ecology; and
  - (b) freshwater ecology relating to Wetland 3 and its tributaries (Wetland 3 is identified in **Annexure A** to my evidence).
11. Freshwater ecology (except as it relates to Wetland 3) is covered in the evidence of Dr Martin Neale.
12. In my evidence, I:
  - (a) Provide an executive summary of my key conclusions;
  - (b) Summarise the relevant aspects of PC78;
  - (c) Summarise the PC78 Site's values with respect to: (a) terrestrial ecology; and (b) freshwater ecology relating to Wetland 3 and its tributaries;
  - (d) Assess the potential ecological effects on terrestrial habitats and Wetland 3 and its tributaries; and
  - (e) Address relevant appeal and s274 points.

## **EXECUTIVE SUMMARY**

13. PC78 seeks to alter the Operative Kaipara District Plan Chapter 16 by (among other things): adjusting the pattern of development identified on the Operative Estuary Estates Structure Plan; increasing the intensity of residential development; reducing the Operative Structure Plan's landscape plantings; creating a new approximately 30 ha sub-zone 8 'natural environment' – and associated plan provisions – for the *protection* and *enhancement* of areas of native bush, wetlands (including the manuka gumland (Wetland 3), which is a focus of my evidence), streams and coastal margin vegetation; replacing the Operative Chapter's proposed online

stormwater management devices; and removal of the Operative Chapter's proposed road from within Wetland 3.

14. The Site vegetation is dominated by rank pasture with infestations of gorse, four wetland areas of varying size and state, three areas of shrubland/forest vegetation and two smaller areas of shrubland. The largest patch of native vegetation is located within the gumland wetland (Wetland 3) as shown in **Annexure A attached** to my evidence.
15. With the proposed stormwater treatment, in my opinion PC78 is unlikely to result in any adverse ecological effects associated with altered water quality or hydrology within Wetland 3. However, given the high ecological values of Wetland 3 and its potential sensitivity to water level and water quality changes I have recommended that water level and water quality be monitored through a specific stormwater management plan for that catchment. I have also recommended implementation of an ecological management plan. These recommendations are reflected in the PC78 sub-zone 8 provisions which provide for ecology management plans and stormwater management plans. The monitoring data should be used to manage the wetland so that its ecological values, including black mudfish, are maintained and enhanced. The state and ecological values of Wetland 3 will benefit from the protection and enhancement proposed as part of PC78, especially through the sub-zone 8 provisions.
16. In addition, under the proposed PC78 structure plan the road through Wetland 3 (as proposed in the Operative Plan) will not be built. I support this change as it will avoid fragmenting the wetland and bush area, improving the connectivity for flora and fauna and providing an opportunity to improve the hydrology of the wetland that is likely to have positive effects on the flora and fauna.
17. The significant enhancement planting (and weed and pest control) associated with PC78, principally through the provisions applying to sub-zone 8, will have positive terrestrial ecology effects. Sub-zone 8, the purpose of which is to protect and enhance existing natural environment features, applies to nearly a quarter of the overall PC78 site. In my opinion there are no adverse ecological effects associated with the proposed decrease (as

between the Operative Plan and PC78) in landscape and native plantings *per se*, but rather it represents a reduction in the future potential terrestrial ecological values of the Site. The areas not proposed to be planted under PC78 are predominantly improved pasture that currently support very limited ecological values.

18. In my opinion PC78 strikes an appropriate balance (in ecological terms) of protecting areas of higher ecological values within and close to the Site, enhancing degraded habitat, creating new habitat, and urban development of poor-quality habitat with little ecological potential (e.g. improved pasture areas). PC78 is consistent with the requirements of the National Policy Statement for Freshwater Management 2020 and the New Zealand Coastal Policy Statement 2010 with respect to ecological matters within the scope of my evidence.

#### **PC78 SUMMARY**

19. Below I summarise key aspects of PC78 relating to ecology.
20. PC78 seeks to alter Chapter 16 and its structure plan. Specifically, the PC78 proposal seeks to adjust the pattern of development identified on the Operative Estuary Estates Structure Plan (including roads, reserves, development areas, stormwater management areas and plantings).
21. PC78 would increase the intensity of residential development in the urban zoned areas and extend the urban zoned residential area into that currently zoned as countryside living (currently sub-zones 5 and 6).
22. The Operative Structure Plan's landscape plantings will also be reduced. This is the most significant change, in terms of potential ecological effects, in the outcomes between the operative Structure Plan and PC78. PC78 also inserts a new sub-zone 8 'natural environment' to address the bush and wetlands (among other features) as a distinct zoned spatial area, replacing the 'green network' annotation of the Operative Structure Plan. Sub-zone 8 provides for the protection and enhancement of areas of native bush, wetlands, (including the manuka gumland (Wetland 3)) streams and coastal margin vegetation. Sub-zone 8 applies to nearly a quarter of the overall PC78

site.<sup>1</sup> In addition, PC78 proposes to replace the proposed online stormwater management devices identified in the Operative Plan, and remove the proposed road from the Wetland 3 and manuka gumland areas.

## **ECOLOGICAL VALUES POTENTIALLY AFFECTED BY PC78**

23. The Site is located within the Northland portion of the Rodney Ecological District and the Auckland Ecological Region. The Rodney Ecological District spans the boundaries of the former Auckland and Northland Department of Conservation Conservancies.
24. Goldwater et al (2012)<sup>2</sup> carried out a reconnaissance survey of the Rodney Ecological District. The part of the Site included within ROD014 was an area of wetland (Wetland 3) adjoining the estuary at the northern end of the property.
25. The Site vegetation is dominated by rank pasture with infestations of gorse, four wetland areas of varying size and state, three areas of shrubland/forest vegetation and two smaller areas of shrubland. The largest patch of native vegetation is located within the gumland wetland (Wetland 3). There is also a smaller area of kānuka shrubland along the western boundary of the property and a small area of mixed exotic/native shrubland alongside the northern boundary.
26. Policy 6.7.1.7 of the Kaipara District Plan (2013) requires the significance of indigenous vegetation and habitats to be assessed using the criteria in the Northland Regional Policy Statement. The gumland area (Wetland 3) would be considered a significant habitat triggering multiple criteria. Wetland 3 also qualifies as a natural inland wetland according to the National Policy Statement for Freshwater Management (2020).
27. The coastal margin vegetation comprises a narrow strip of mangroves, adjoining a similar sized band of mixed native/exotic shrub and weeds which adjoin pasture. At the north-eastern end of the property, there is a more extensive mangrove forest which includes a lateral mangrove embayment.

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<sup>1</sup> Sub-zone 8 is 29.75 hectares, and the total PC78 site is approximately 130 ha.

<sup>2</sup> Goldwater, N., Graham, P., Holland, W., Beadel, S., Martin, T., Myers, S. 2012. Natural areas of Rodney Ecological District (Northland Conservancy). Reconnaissance survey report for the Protected Natural Areas Programme.

28. Dr Gary Bramley sets out the avifauna values within the gumland wetland (Wetland 3) and wider site and assesses actual and potential effects on avifauna associated with PC78.
29. Lizard species present in the wider Mangawhai District are likely to include forest gecko, pacific gecko, elegant gecko, copper skink, ornate skink, moko skink, shore skink and the introduced rainbow skink (*Lampropholis delicatula*). The Rodney Ecological District also marks the northern limit of striped skink.
30. The highest quality habitat within the Site for geckos and ornate skink include the mānuka gumland, the kānuka shrubland and other areas of mixed native/exotic shrubland with deep leaf litter. Species such as copper skink, ornate skink and rainbow skink may occupy areas of rank grass across the Site when adjacent to vegetation and other suitable cover such as debris piles around buildings and structures. There was no suitable habitat for moko skink and shore skink within the Site.
31. A lizard survey was undertaken on the Site on 20 November 2018 and no native skinks were found. Four introduced rainbow skinks were found within the initial stages of earthworks footprint and four rainbow skinks were identified in habitat located outside the earthwork's footprint.
32. Outside of the manuka gumland (Wetland 3) and kanuka shrubland lizard habitat values within the Site are very limited.

*Manuka gumland (Wetland 3)*

33. The manuka gumland (Wetland 3), grades from manuka and tree ferns with a limited understory in dry margins, through to a wetland dominated by tangle fern (*Gleichenia dicarpa*) and *Sphagnum cristatum*. The presence of these wetland species are indicative of low fertility habitat, making it highly probable several orchid species are present. The manuka gumland comprises a relatively intact ecological sequence over a range of ecotones. The manuka gumland is identified in sub-zone 8 and consequently will be protected and enhanced by PC78.
34. Watercourse B as shown in **Annexure A**, originates in a shallow gully and drains into the mānuka gumland area (Wetland 3). Watercourse B has the

highest natural character and ecological values of the streams draining the Site. This is identified within proposed sub-zone 8 and consequently will be protected and enhanced by PC78.

35. Watercourse I as shown in **Annexure A** is an artificial channel that has been constructed along the southern boundary of the mānuka gumland (Wetland 3). The main channel is located within proposed sub-zone 8. The uniform channel is well shaded but provides poor quality habitat.
36. The hydrology of the manuka gumland Wetland 3 has been set out in the evidence of Mr Van de Munckhof.
37. The key native fish value within the Site is a population of Black Mudfish in Wetland 3. Black mudfish have a non-migratory life-history, are restricted to wetlands, swampy streams and drains and prefer low-nutrient, acidic peat bogs, peat lakes with clear water and overhanging reeds, rushes or sedges. Black Mudfish have an 'At risk – Declining' threat status.

#### **ASSESSMENT OF PC78**

38. A summary of the outcomes of PC78 with relevance to ecological values and effects are:
  - (a) Urban development, including increasing the density of residential development compared with the operative Chapter 16 structure plan;
  - (b) Removal of the Operative Plan's proposed road within the Wetland 3 and manuka gumland areas;
  - (c) Reduction in the extent of landscape planting - compared with the Operative Plan - around parts of the Site (relating to plantings in areas of open pasture); and
  - (d) Protection and enhancement of nearly 30 ha of native bush, wetlands, streams and coastal margin vegetation through inclusion within sub-zone 8: 'natural environment'.



### *Effects of increased density*

39. The key potential ecological effect associated with the proposed increase in the density of residential development relates to an increase in the level of imperviousness and stormwater runoff, and sediment runoff during earthworks. Stormwater management and controls are set out in the evidence of Mr James Dufty and Mr Van de Munckhof. The potential effects of stormwater on freshwater ecosystems are outlined in Dr Martin Neale's evidence, and I agree with Dr Neale's evidence in this regard.
40. Mr Van de Munckhof has concluded that there is likely to be an increase in the total runoff volume discharged to the gumland wetland (Wetland 3). With the proposed stormwater treatment (and other PC78 stormwater provisions outlined in Mr Van de Munckhof's evidence),<sup>3</sup> in my opinion PC78 is unlikely to result in any adverse ecological effects associated with altered water quality or hydrology within Wetland 3. However, given the potential sensitivity of Wetland 3 to water level and water quality changes I recommended that water levels and water quality be monitored within the wetland through a specific stormwater management plan for that catchment. I have also recommended implementation of an ecological management plan. These recommendations are reflected in the PC78 provisions providing for ecology management plans<sup>4</sup> and stormwater management plans.<sup>5</sup> The monitoring data should be used to manage the wetland so that its ecological values, including Black Mudfish, are maintained and enhanced.

### *Removal of the road from Wetland 3 and manuka gumland area*

41. The Operative Chapter 16 structure plan identifies the formation of a road through the northern portion of Wetland 3/manuka gumland where a farm track is located. Under the proposed PC78 structure plan this road will not be built and instead that part of the Site will be accessed by a road located north of (and outside) the wetland and bush area. I support this change as it will avoid further fragmenting the wetland and bush area, improving the

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<sup>3</sup> For example provisions relating to the use of stabilised roofing materials.

<sup>4</sup> PC78 16.10.8.1 j) provides the following matter of discretion: "Ecology management plan for the Sub-Zone 8 areas, including weed and pest control and indigenous revegetation (where appropriate) and any required mechanisms for ownership and maintenance of the area." See also the related assessment criteria at 6.10.8.2 i).

<sup>5</sup> PC78 16.10.8.1 ee) provides the following matter of discretion: "stormwater management plan for the hydrology of Wetlands 1, 2 and 3". See also the related assessment criteria at 6.10.8.2 ee).

connectivity for flora and fauna and providing an opportunity to improve the hydrology of the wetland that is likely to have positive effects on the flora and fauna. The route may still offer opportunities for a walking and cycling track (refer to the PC78 Structure Plan), however this has significantly reduced ecological impacts compared with establishing an approximately 20m wide road reserve through this feature.

*Reduction in landscape planting*

42. PC78 would significantly decrease the amount of revegetation of the pasture areas with landscape and native plantings, compared to that provided for under the Operative Plan. My understanding is that the extensive plantings proposed under the Operative Chapter 16 structure plan were primarily aimed at increasing the landscape and amenity values of the area and were not principally proposed to mitigate or offset potential adverse ecological effects associated with the proposed change in land use. In my opinion the proposed reduction in landscape and native plantings under PC78 (compared with the Operative Plan) is therefore a reduction in the potential for net ecological benefits compared to the Operative Plan.
43. In my opinion there are no adverse ecological effects associated with the proposed decrease in landscape and native plantings per se, but rather it represents a reduction in the future potential terrestrial ecological values of the Site. The areas not proposed to be planted under PC78 are predominantly poor-quality pasture that have very limited ecological values.

*Ecological protection and enhancement*

44. In my opinion PC78 appropriately preserves/enables the ecological opportunities that the proposed development of the Site creates, including:
  - (a) Protection of the manuka gumland (Wetland 3) through zoning as sub-zone 8, monitoring and managing water level within the wetland, a weed control programme, and enhancement planting to preserve the integrity of the more intact natural character within the swamp interior to benefit native fish, lizards and birds (refer for example Rule 16.10.8.2(ee, i)).

- (b) Supporting natural regeneration processes in the kanuka shrub block by implementing a planting/weed control programme to benefit native fish, lizards and birds. (Refer for example Rule 16.10.8.2(i)).
- (c) Establishment of a 30m coastal marine area yard, and a 10m yard with streams, wetlands, or any sub-zone 8 area (Rule 16.8.2.3), to provide a buffer between any future development and the sensitive coastal margin, and the margins of streams/wetlands and other ecological features. This will protect and enhance the important site-specific ecological values at the interface between streams, land and coastal margin. Such corridors will also function to improve the connection between the discrete stands of mangrove forest and manuka gumland habitat allowing fauna to disperse through these areas.
- (d) Requiring a Remedial Management Plan associated with Wetland 3 and the manuka gumland (PC78 16.7.5) addressing a range of matters (all of which I support from an ecological perspective), including:
  - (i) Weed and pest control to restore ecological quality.
  - (ii) Restoration of the hydrology of the wetland by replacing sections of track with boardwalks and placing subsurface drainage so that water can flow freely.
  - (iii) Planting to reduce edge effects and weed invasion.
  - (iv) Measures restricting or prohibiting the presence of dogs.
  - (v) Redesign of coastal culverts to reduce coastal erosion, while also ensuring the protection of any mudfish in drains within the wetland.
  - (vi) Realigning the track to increase the setback from the coastal margin in areas where it is exacerbating cliff erosion.

45. In my opinion, PC78 strikes an appropriate balance (in ecological terms) of protecting the higher ecological values (Wetland 3, coastal margin and estuary), enhancing degraded habitat, and creating new habitat (refer to Dr

Neale's evidence), and urban development of poor-quality habitat with little ecological potential (e.g. improved pasture areas).

46. Given the protection of wetland and stream features through their zoning as sub-zone 8 (providing for their protection and enhancement) and other approaches outlined in my evidence and the evidence of Dr Neale and Mr Tollemache, PC78 is consistent with the direction in the National Policy Statement for Freshwater Management 2020<sup>6</sup> and the New Zealand Coastal Policy Statement 2010<sup>7</sup> as they relate to freshwater and terrestrial ecology within the scope of my evidence.

## **RESPONSE TO ISSUES RAISED IN NOTICES OF APPEAL AND S274 NOTICES**

47. I have reviewed and considered the notices of appeal and s274 notices to the extent they relate to matters within my area of expertise. I note that most parties that raised concerns about ecology and the environment were focused on potential effects on the estuary. These matters have been addressed by Dr Shane Kelly. Parties' concerns regarding potential effects on fairy tern have been addressed by Dr Gary Bramley.
48. Concerns were noted in Mr Rothwell's s274 notice around the proximity of the proposed PC78 development to the 'wetland fen' (Wetland 3, manuka gumland). As I have outlined in my evidence, the gumland wetland will be protected and enhanced. In addition, a 10m minimum building yard requirement is required under PC78 from any wetland (and stream or area of Sub-Zone 8).<sup>8</sup> In my opinion, the proposed protection and enhancement of this wetland is appropriate. The development enabled by PC78 will not, in my opinion, compromise the ecological gains that will come from the protection and enhancement of this wetland.

Richard Neilsen Montgomerie  
Freshwater Solutions Limited

17 December 2021

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<sup>6</sup> For example Policies 6, 7, and 9.

<sup>7</sup> For example, Wetland 3 is almost entirely within the coastal environment, and PC78's protection of this feature and the flora and fauna in it is in line with Policy 11 of the NZCPS (biodiversity).

<sup>8</sup> PC78 16.8.2.1.

**ANNEXURE A – TERRESTRIAL FEATURES; AND WETLAND 3 AND ASSOCIATED WATERCOURSES.**

