

Before the Freshwater Hearings Panel convened by the Chief Freshwater
Commissioner

In the matter of Freshwater parts of the Proposed Otago Regional
Policy Statement 2021

**Summary of Evidence of Jayde Couper on behalf of Otago and Central South
Island Fish and Game Councils**

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Introduction

- 1 My full name is Jayde Edward Couper. I prepared a statement of evidence on the Freshwater Parts of the Proposed Otago Regional Policy Statement 2021 (**pORPS**) dated 28 June 2023 (**EiC**). My qualifications and experience are set out in my EiC.

Executive summary

- 2 As a whole, there is strong evidence of degradation in multiple waterways around the Otago region. Analysis of Otago Regional Council's (ORC) 2021 state of the environment reporting¹ shows that water quality in the region falls below at least one of the NPS-FM bottom lines at 63% of all sites². The pattern of water quality degradation is not however uniform across the region. Typically, high or mountainous waterways under native forest cover tend to have higher water quality, while low elevation waterways that drain pastoral or urban areas tend to have lower quality. Concerningly the report states that across the region the 20-year trends were predominantly degrading for all water quality variables apart from ammoniacal nitrogen.
- 3 Since the production of my previous evidence, I have become aware of updated ORC state of the environment reporting, this was largely presented³ and summarised⁴ as appendices to Tom Dyers FPI evidence. Unfortunately, all the parameters presented in the 2021 report have not been made available in either of the reports which makes analysis and comparison with previous data difficult. Analysis of Mr Dyers summary of flowing waters⁵ shows 64% of sites failing at least one bottom line⁶. I would expect that including lake sites would only minorly change this percentage as the proportion of testing sites on lakes is low and a large number of sites,

¹ Ozanne R - State and Trends of River and Lake Water Quality in the Otago Region 2000-2020.

² Please note that these calculations carry over the assumptions by the author of the above citation. These are:

- A. The author notes that there is no NPS-FM bottom line for Dissolved Reactive Phosphorous, the "D" band was used as a substitute.
- B. The author lists an E. coli national bottom line; however, it does not appear that there is one in the NPS-FM. I assume that the thresholds for primary contact are used (exceeds A, B or C bands)

³ FPI EiC – Tom Dyer Appendix b – Note, *does not include data on lakes*.

⁴ FPI EiC – Tom Dyer Appendix a Note, *does not include data on MCI, ASPM or algae*.

⁵ FPI EiC – Tom Dyer Appendix a

⁶ Using the same assumptions as above in footnote 2, When DRP and E coli are removed from analysis, the number of sites failing at least one bottom line falls to 51%.

particularly in the more coastal FMU's/rohe are not meeting at least one bottom line. Comparison of the lake water quality data has also been made more difficult by the addition of multiple testing sites at different depths on the large central lakes.

- 4 An important example of the intricacies of reporting against NPS-FM bottom lines is around water clarity. Clarity reductions can be caused by land uses as well as naturally occurring processes. This is partly accounted for by the use of sediment classes⁷ which recognise the climate topography and geology of the catchment. If we assume all clarity failures were due naturally occurring processes the percentage of sites that failed at least one bottom line would drop from 64% to 54%. I have included clarity in my analysis as the NPS-FM makes it clear that “the onus is on the relevant regional council to demonstrate that it is naturally occurring processes that prevent the national bottom line being achieved”⁸
- 5 The percentages of flowing waterways that failed at least one bottom line was variable between FMU/rohe, although there is a general trend of the FMU/rohe that are closer to the coast having a higher percentage of sites that do not meet NPS-FM bottom lines:

Table 1: Number of flowing water test sites within each FMU/rohe and the proportion that fail at least one bottom line.

FMU	Rohe	Number of sites	Percent of sites that fail at least one bottom line
Clutha	Upper Lakes	22	23%
Clutha	Roxburgh	5	80%
Clutha	Dunstan	14	36%
Clutha	Manuherekia	9	67%
Clutha	Lower Clutha	14	86%
North Otago		17	82%
Dunedin and Coast		8	100%
Taieri		17	71%
Catlins		4	100%
Otago Total		110	64%

- 6 All the above analyses rely on currently available and reported data and it is important to note that a number of NPS-FM parameters are not currently

⁷ NPS-FM e Appendix 2C Tables 23 and 26

⁸ NPS-FM 3.32 (2)

reported on. Notable parameters that are not currently reported, to my knowledge are dissolved oxygen, cyanobacteria and ecosystem metabolism. I am aware of at least one site in the region where dissolved oxygen levels fall below national bottom lines.

- 7 Although there are some difficulties in comparing the data available between all the reports available on water quality, there is strong evidence that a large proportion of water bodies around the region do not meet the bottom lines of the NPS-FM. Information on the degree to which water extraction is affecting waterways is harder to find as the ORC has not produced any state of the environment information about water quantity⁹. My understanding which has been largely informed by the Skelton report¹⁰ and the decision of the Environment Court on Plan Change 7¹¹, aligns with the evidence of Sandra McIntyre for Kai Tahu that says her understanding is that “there are still concerns about over-allocation in a number of catchments across the region” and that “the RPW framework does not recognise over-allocation, largely prioritises consumptive uses over instream values, and does not adequately consider effects on the freshwater system beyond the vicinity of the abstraction point”¹².
- 8 There also appears to be little ORC reporting on the state and extent of wetlands. Wetlands perform many important functions, as carbon sinks, biodiversity and recreation hotspots and for the mitigation of sediment, nutrient and faecal contaminant load on downstream water bodies, the attenuation of floods and the buffering of low flows. Despite these values it is estimated that only around a quarter of the wetlands that existed in Otago before human occupation still remain¹³. Unfortunately, data from Manaaki Whenua Landcare Research suggests that between 1996 and 2018, the Otago Region lost a further 400 hectares of wetlands, the majority of which was converted to exotic grassland¹⁴.

⁹ FPI section 42 a – paragraph 122

¹⁰ Skelton, Peter (2019) Investigation of Freshwater Management and Allocation Functions at Otago Regional Council - Report to the Minister for the Environment. Wellington: Ministry for the Environment.

¹¹ Plan Change 7 decision, interim decision and annexures

¹² FPI EIC – Sandra McIntyre para 20-22

¹³<https://www.forestandbird.org.nz/resources/world-wetlands-day-forest-bird-release-maps-showingextentwetlands-crisis> (data sourced from the Ministry for the Environment)

¹⁴ <https://www.stats.govt.nz/indicators/wetland-area> and associated datasets, sourced by Manaki Whenua.

- 9 Due to the varied and valuable functions of wetlands and their ongoing loss, it is important to have strong protections for those wetlands that remain. The supplementary evidence for the Freshwater Planning Instrument (FPI) process on the implications of the NPS-IB by Felicity Boyd has recognised there is a considerable risk that some wetlands will “fall through the cracks” due to not being mapped or due to the prevalence of exotic pasture species. In my opinion the changes suggested are useful protecting the values of wetlands and recognising the challenges they face.
- 10 The three factors just discussed, water quality, quantity and the loss of wetlands are not the only issues that are facing freshwater in Otago. Numerous other effects such as those associated with land use change, climate change, introduced species, damming/ hydro power and urban development also affect the health of waterbodies. These effects cannot be looked at in isolation as the issues they cause can compound together creating additional pressure on and reducing the resilience of our waterbodies.
- 11 There are varying pressures and differences in ecological health across the FMUs/rohe. Coastal FMUs like North Otago, Dunedin and Coast, Taieri, and Catlins (primarily the northern half) face greater challenges with water quality degradation compared to the less intensively farmed Central FMUs/rohe. Groundwater quality concerns are specific to FMUs/rohe with present groundwater, most notably in the lower Clutha and North Otago FMUs/rohe. Water quantity poses a more significant issue in areas with more limited water resources, particularly in water-short regions like Dunstan, Roxburgh, and Manuherehia rohe, although comprehensive summary reporting is lacking.
- 12 In my supplementary evidence regarding the implications of the National Policy Statement for Indigenous Biodiversity, I provided an opinion on the use of the term “irreversible”. To summarise my thoughts, I believe that the term could cause issues as determining if an effect is reversible would require experts to interpret the potential effects of an activity into the distant future which is likely to be difficult in most cases. Consequently, I recommend wording that looks at the degree to which an activity degrades the aspects of the environment that we value.

30 August 2023

Jayde Couper