

**BEFORE THE FRESHWATER HEARINGS PANEL CONVENED BY THE CHIEF
FRESHWATER COMMISSIONER**

Under the Resource Management Act 1991

In the matter of the proposed Otago Regional Policy
Statement 2021

**STATEMENT OF EVIDENCE OF THOMAS JAMES DYER (WATER QUALITY
INFORMATION) ON BEHALF OF OTAGO REGIONAL COUNCIL**

28 June 2023

BUDDLE FINDLAY

Barristers and Solicitors
Wellington

Solicitor Acting: **David Allen / Victoria Brunton**
Email: david.allen@buddlefindlay.com / victoria.brunton@buddlefindlay.com
Tel 64 4 462 0423 Fax 64 4 499 4141 PO Box 2694 DX SP20201 Wellington 6011

CONTENTS

1. QUALIFICATIONS AND EXPERIENCE	1
2. CODE OF CONDUCT.....	1
3. SCOPE OF EVIDENCE	1
4. DEVELOPMENT OF THE PORPS VISION STATEMENTS.....	2
5. ONGOING PROGRAMME TO INFORM THE DEVELOPMENT OF THE OTAGO REGIONAL WATER PLAN	3
6. RELEVANCE OF THE ONGOING SCIENTIFIC PROGRAMME TO THE PORPS	4

1. **QUALIFICATIONS AND EXPERIENCE**

1.1 My name is Thomas James Dyer

1.2 I hold the position of Manager Science at Otago Regional Council (**ORC**). I have 14 years of experience in management and leadership of engineering and science programmes of work. I hold a Bachelor of Science majoring in Physical Geography.

2. **CODE OF CONDUCT**

2.1 I confirm that I have read the Environment Court's Code of Conduct for Expert Witnesses contained in section 9 of the Environment Court Practice Note 2023. This evidence has been prepared in compliance with that Code. In particular, unless I state otherwise, this evidence is within my area of expertise, and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

3. **SCOPE OF EVIDENCE**

3.1 I lead the team that commissioned and prepared the report – 'State and Trends of Rivers, Lakes, and Groundwater in Otago 2017 – 2022' and the literature review - 'Guidance on time frames of water quality responses to the implementation of good management practices'. My team also contributed to the development of a report to the Land and Water Plan Governance Group – Agenda Item 1A: Setting Target Attribute States.

3.2 In preparing my evidence I have reviewed the proposed freshwater planning instrument parts of the Proposed Otago Regional Policy Statement (**PORPS**) 2021.

3.3 The purpose of my evidence is to provide the most recently available scientific evidence held by the ORC on the magnitude of change that will be achievable for some in-water quality parameters. This provides some context for consideration of the timelines for achieving the visions for the various Freshwater Management Units (**FMUs**) as included in the PORPS.

3.4 Scientific evidence at the time of submissions on the PORPS indicated that the freshwater visions for the Catlins and Clutha Mata-au Upper Lakes rohe FMUs were unlikely to be met within the timeframes as proposed under the PORPS. The ORC's submission was therefore confined to the Catlins and

Upper Lakes rohe FMUs and my evidence is likewise limited to these two FMUs.

- 3.5 My evidence describes the ongoing scientific work programme established to support the development of the ORC's proposed Land and Water Regional Plan (the **Plan**) which will implement and give effect to the PORPS.
- 3.6 My evidence does not provide recommendations about the vision timeframes for the Catlins and Upper Lakes. Rather the intention is to provide transparency of information to the Hearings Panel and all submitters in a manner that will assist the Hearings Panel in making decisions on the relevant provisions, including timeframes, in the freshwater parts of the PORPS.

4. DEVELOPMENT OF THE PORPS VISION STATEMENTS

- 4.1 The PORPS outlines vision statements for each FMU and Rohe. The vision statements include proposed timelines to achieve a set of goals. The relevant timelines are outlined in the following table.

FMU - Rohe	PORPS Freshwater Vision Timeframe
Clutha Mata Au – Upper Lakes	2030
Clutha Mata Au - Dunstan	2045
Clutha Mata Au - Roxburgh	2045
Clutha Mata Au – Lower Clutha	2045
Clutha Mata Au - Manuherekia	2050
North Otago	2050
Taieri	2050
Dunedin & Coast	2040
Catlins	2030

- 4.2 The s42A Hearings Report outlines the process for developing the PORPS visions and timeframes. The report also outlines the range of divergent views held by submitters on PORPS vision timeframes.
- 4.3 In line with the National Objective Framework (**NOF**) outlined in the National Policy Statement for Freshwater Management 2020 (**NPSFM 2020**), the visions from the PORPS have been used to develop values, objective statements, and draft Target Attribute States (**TAS**) that are to be included in the Plan.

5. ONGOING PROGRAMME TO INFORM THE DEVELOPMENT OF THE OTAGO REGIONAL WATER PLAN

- 5.1 I have attached to my evidence a Land and Water Plan Governance Group Report: 'Setting target and interim target attribute states' (**Attachment A**) that sought policy direction to inform the TAS setting in the Plan in early 2023. The report provides indicative TAS's at an FMU level. The TAS shown in the report were provided for the purpose of policy direction setting at a point in time. These will continue to change as the Plan is developed.
- 5.2 ORC's Science Team has been working to inform the development of the Plan. To date this work has included a current state and trends report, nutrient modelling, hydrological modelling, specific provisions and special topics advice memorandums and reports. Many of these documents are still in development.
- 5.3 From that body of work there are two documents currently available that may support potential refinements to the PORPS through the freshwater hearings process.
- 5.4 The most recent report 'State and Trends of Rivers, Lakes, and Groundwater in Otago 2017 – 2022' (**Attachment B**) was finalised in June 2023. This report outlines the current state of water quality in Otago's Rivers, Lakes and Groundwater. The information provided within this report includes current state water quality grades, baseline grades and where available, 10 and 20 year trends. This information is summarised at an FMU and Rohe Level.
- 5.5 A further report (**Attachment C**) titled - Advice Memo: 'Guidance on time frames of water quality responses to the implementation of good management practices', is a literature review that focuses on nutrient lag times. A nutrient lag time is the time delay between a change in nutrient input and a corresponding change in water quality. For example, if a land user reduces the amount of fertilizer applied to a field, it may take years or decades for the excess nutrients to be flushed out of the soil and groundwater before reaching a stream or lake. The literature review draws upon international and national research, as the best available information to provide context for the likely rate of change in water quality in Otago.
- 5.6 Additionally, a report that outlines the results of nutrient modelling in Otago is in development. This document will likely become available in August

2023. The report estimates the scale of change in nutrient run-off achievable from applying potential land use mitigations. It will provide an estimate of how effective the Plan could be in achieving a given TAS, this information may be useful when considering PORPS timeframes.

6. RELEVANCE OF THE ONGOING SCIENTIFIC PROGRAMME TO THE PORPS

6.1 The three now available reports discussed above (Attachments A – C) were not available when the PORPS was developed and they have been developed primarily for the Plan. However, for transparency and to provide as much information to the Hearings Panel as possible, the ORC submitted on the freshwater process to highlight this newly available information. The information is relevant to consideration of the timeframes outlined in the PORPS visions.

6.2 While I encourage the Hearings Panel to read the abovementioned reports in their entirety, an example of the utility of this information when considering the PORPS vision timeframes is set out below in relation to Dissolved Reactive Phosphorus (**DRP**) as follows:

(a) **DRP**

(i) Median attribute as measured at Catlins at Houipapa, a current attribute state of C Grade (Attachment 2);

(ii) the TAS proposed (Attachment 1) is A Grade, and

(iii) the likely nutrient lag time is 7+ years (Attachment 3).

6.3 The proposed Plan mitigations would likely apply some time after 2025, and the PORPS vision from the Catlins FMU is 2030 which, when considering the above information, demonstrates the challenges in achieving the visions in the timeframe identified in the PORPS.

6.4 As above, and in accordance with the ORC's submission, the purpose of this evidence is not to provide recommendations about the vision timeframes in the PORPS but rather the intention is to provide transparency of information to the Hearings Panel and all submitters to enable the Panel and submitters to test the appropriateness of the vision timeframes in making decisions on the relevant provisions in the freshwater parts of the PORPS.

Thomas James Dyer

28 June 2023

**ATTACHMENT A – LAND AND WATER PLAN GOVERNANCE GROUP –
AGENDA ITEM 1A: SETTING TARGET ATTRIBUTE STATES**

**ATTACHMENT B – STATE AND TRENDS OF RIVERS, LAKES, AND
GROUNDWATER IN OTAGO 2017 – 2022.**

**ATTACHMENT C – ADVICE MEMORANDUM: GUIDANCE ON TIMEFRAMES
OF WATER QUALITY RESPONSES TO THE IMPLEMENTATION OF GOOD
MANAGEMENT PRACTICES**