

Otago RPS – FPI parts – Hearing 5th September 2023

Marine Richarson – Opening statement

1. I provided evidence related to the freshwater values present in the Otago Region, on behalf of the Director-General of Conservation¹. I focused on aquatic habitats and fish species. These speaking notes summarise my evidence and provide further comments to assist the Panel.

Summary of evidence

2. With 32 extant taxa, Otago has the highest native freshwater fish richness of all regions in Aotearoa New Zealand. Otago hosts the highest amount of endemic non-diadromous galaxiid species of the country, with some of them only found in one or two out of the five Otago FMUs. It also hosts fish species which are highly mobile within and across catchments, with life cycles featuring both marine and freshwater phases, which are more widely distributed at the national scale. In my view, these unique fish assemblages – both region-wide and at the FMU and rohe levels – must be explicitly acknowledged in the pORPS. To that end, I support the adoption of an overarching vision for the Region, complemented by FMU-specific visions that account for their uniqueness.
3. Otago fish species present diverse life cycles and ecological requirements. They are also highly susceptible to anthropogenic threats, although their responses to pressures vary. Human impacts do not occur in isolation, and the effects of interacting pressures can be complex. This complexity warrants pORPS policies and methods that enable coherent management strategies for multiple spatial and temporal scales.
4. Otago hosts significant freshwater macroinvertebrate taxa, such as kōura and kākahi, which should also be considered in policies and methods framing freshwater management in the Region.

A note on climate change and shifting baselines

5. In my opening statement to the Land and Freshwater Chapter dated 2 May 2023, I made the point that in my view climate change is not the highest current threat for freshwater biodiversity and ecosystems, although its effects compound and worsen the impacts of current threats. I indicated my support for a planning and policy framework that would address current pressures related to land usage, practices, and management, that would be made worse in a changing climate context.
6. However, I must stress that I do not consider climate change to be a future problem. Climate change-related issues have already arisen, such as the increase in frequency and intensity of extreme weather events. I submit to you that this is our new normal – which might warp our

¹ EIC of Dr Marine Richarson for the Director-General of Conservation dated 23 June 2023. EIC dated 23 November 2022 and my speaking notes for the ECO chapter and Land and Freshwater chapter in respect of non-freshwater matters are also before the Freshwater Hearing Panel in accordance with the Director-General's memorandum dated 28 June 2023.

perception and understanding of what 'normal' should be like. What is understood today as pristine or well-preserved natural character might just be a remnant of what used to be.

7. There is a tendency to gradually shift what we accept as norms for the condition of the natural environment, often due to a lack of past information or a lack of experience of past conditions². This phenomenon, called 'Shifting baseline syndrome', can have significant consequences, as it leads to continually lowering our accepted threshold for environmental conditions and increasing our tolerance for progressive environmental degradation. Shifting baseline syndrome may also change our expectations as to what is a desirable state of the natural environment (i.e., one that is worth protecting), and might lead to the establishment and use of inappropriate baselines for conservation, restoration, and management. This phenomenon also worsens over time: members of each new generation accept the situation in which they were raised as being normal.
8. For this reason, settling for the status quo is, in my view, not acceptable. The aquatic ecosystems of the Otago Region have by now undergone decades of degradation. Being ambitious in setting objectives and associated timeframes for these systems' recovery is a necessity, with their protection the bare minimum achievable.

Dr Marine Richardson

² Soga, M. and Gaston, K.J., 2018. Shifting baseline syndrome: causes, consequences, and implications. *Frontiers in Ecology and the Environment*, 16(4), pp.222-230.