

WISE RESPONSE SUBMISSION ON THE DRAFT NATIONAL POLICY STATEMENT FOR FRESHWATER MANAGEMENT UNDER THE "ACTION FOR HEALTHY WATERWAYS" PROGRAMME

Main contributors:

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SUBMISSION

1. The framework for this submission follows that of the draft NPS FW. We indicate our support or concerns where we think it seems most appropriate within that framework. While we are generally supportive of the draft proposals, mainly under "Part 1 Preliminary Provisions" we wish to offer several high-level suggestions around approach and how to give this new NPS a better chance of buy in and successful implementation. As we have not reviewed the discussion document in detail, we would be pleased if some of these aspects have already been considered.

Part 1 Preliminary Provisions

2. The Wise Response Society commends and endorses the purpose and general thrust of this Draft National Policy Statement for Freshwater Management.

3. We agree that both the quality and quantity freshwater in our natural waterways are issues of **national significance** throughout New Zealand and that both are deserving of review in relation to the degradation of water quality and cases of over-allocation that has occurred, particularly over the last 20 years, coinciding with the intensification of agriculture in several regions of the country.

Te Mana o te Wai

4. Essentially what the concept of the Te Mana o te Wai acknowledges is that our predominantly **mechanistic approach** to freshwater management is falling short and the we must therefore reintroduce a more holistic (organic) approach. We also consider it represents a greater acceptance of the urgent need to swing back to understanding and being guided by **biophysical processes** and in some cases, ethical considerations, rather than those largely around economics. If these observations are correct, then they are thoroughly endorsed.

5. On the other hand, we wonder if this cultural concept may not be incorporated in a way that is more tightly tied to the primary compulsory value of preserving and enhancing "**ecosystem health/function**". That way the process of fleshing out of tangata whenua roles and interests at more local levels will remain consistent with and focused on this overriding objective.

6. A danger with NPSs that address specific aspects of resource management is they can inhibit a truly "integrated" response. While clearly considerable thought has been given to interactions with certain other regulations, there are inevitably

other activities beyond its scope but that will influence its effectiveness. Relationships with legislation concerning the likes of forestry, climate change (ETS), coastal marine, renewable energy, and even immigration and housing policies are examples. Essentially, all the indications are that if we don't deal with environmental stresses holistically, we will fail. So we think this NPS should propose a mechanism for Action Plans that will ensure a highly holistic approach is adopted by authorities (see regenerative model example below)..

7. Likewise, we feel a more inclusive concept than that attributed to Te Mana o te Wai is **to ensure our freshwater is in the best possible condition to support a successful transition to a truly sustainable society for the required number of humans and the maximum number and diversity of other life forms.** In this context we note with deep disquiet the statistic that of the global biomass of all the animals and birds alive today, 96% is human-induced, up from 50% in 1970¹.

8. **Without disrupting the central position of the concept of Te Mana o te Wai we therefore recommend that this broader benchmark, with a more specific purpose, may be included in this NPS.**

Regenerative farming model for FMUs

9. **We support the establishment of FMUs** for the entire country even though there are already various landuser groups operating at lower levels. So we think that the brief of these units needs to ensure that there is both urban and rural representation and be widened to include the likes of climate change, biodiversity, pest control, land capability, etc., as well as freshwater. Again, this is because most of these issues, when considered through an ecosystem health or sustainability lens, are interrelated and it seems clear that this is essential for the integrated response sought.

10. In this context it seems that the "**landscape function**" approach proposed by leading exponents of **regenerative/integrated landuse management** would provide a useful guide for such groups to use as a way of stepping back from and reassessing their current operations. They challenge landusers in 5 key areas to come up with sustainable practice, all of which have a direct bearing on freshwater quality:

- a. Solar-energy cycle - maximising photosynthesis to fix as many plant sugars as possible to build soils and increase productivity
- b. Water cycle - capturing and recycling in the land as much rainfall as possible
- c. Soil mineral cycle - mobilising, holding and recycling natural fertility
- d. Self-organisation in ecosystems and biodiversity at all levels
- e. Appropriate management/social systems

11. Using ecosystem function as a guide, they are devising solutions from the ground-up, where regenerative is beyond just "sustainable". **This has the potential to shift the mindset and focus from maximum exploitation down to "bottomlines" over to together building a more resilient and "nourishing terrain".**

¹ Charles Massy, Call of the Reed Wabler, 2017

Water yield from landscape

12. Further on the theme of building resilience, a key concept in regenerative land management is the potential to **increase effective rainfall** (i.e., the proportion of rainfall that infiltrates the land surface - landscape function "b" above). One estimate from Australia is that a 1% increase in soil organic matter in the top 30cm of soil increased the water holding capacity by 14.4 l/m². That additional storage exists each time it rains so has the potential to hugely increase recharge to the subsurface (including aquifers) and prolong base flows in rivers if scaled up.

13. To add to this, it has been clearly demonstrated that **ground cover/cover type** also strongly influences catchment yield. For example the role of upland tussock in capturing mist or the capacity of Pinus Radiata to reduce yield.

14. Therefore, the extent to which these factors (soil infiltration and holding capacity and vegetation cover) can be **optimised across our agricultural landscapes** has the potential to significantly change the freshwater balance directly in terms of water quantity (including aquifer recharge) and indirectly in terms of quality (as a result of enhanced natural filtering).

15. **We would therefore like to see both the wording in this NPS more sympathetic to these dynamic relationships and to include a specific requirement for Councils to address them in action plans, with appropriate monitoring.**

16. We anticipate that new freshwater planning process proposed for the **RMA Reform Bill (Stage 1)** would be able to support such a requirement.

Point of business pragmatism

17. In addition to the need to reduce adverse water quality impacts on freshwater, there are a number of **other major pressures coming on landusers** that could individually or severally make existing enterprises (such as intensive dairying) in the medium to longer term, uneconomic. Examples of pressures include meeting GHG emissions targets, the decline in fossil energy efficiency (i.e. energy return on investment), dietary trends, disruptive technology like synthetic protein, etc.

18. Our concern is that, while these pressures may help shift the industry in the right direction, they may not of themselves, **bring farmers or the sector to a "point of pragmatism"** about the best long-term changes to make to their operation **now**.

19. Clearly, if landusers realise that the **safe environmental "operating space"** for them in the future will not allow them to generate value in the form they do today, and therefore it's best to switch to different operations now (potentially with government assistance), then it will make it a lot easier to achieve the goals of this NPS.

20. We therefore propose that the Government run a **series of workshops** that brings this question to a head for landusers generally. To create sufficient objectivity amongst landowners, we think that the fundamental landscape functions employed in the regenerative model (or similar) would need to be employed.

² Glen Morris, Soil Scientist, Page 140 in Charles Massy

21. For farmers to be able to objectively review their businesses within such a workshop programme, it is essential that **grand-parenting rights to emit** do not unfairly distort incentives in a way that enables some operators to continue what are otherwise unsustainable operations and inhibit others from adopting sound ones.

22. If not in this NPS, we recommend that strong incentives be incorporated at the most appropriate policy under the Action on Healthy Waterways initiative.

Ecological literacy

23. Fundamentally, the challenge to **successful adoption of the Objective and Policies** in this NPS is going to be achieving "ecological literacy" in a sufficiently wide cross-section of the community to accept that a sound economy and secure society are dependent on sustaining our ecosystems and being willing to align landuse practice with natural ecosystem processes (i.e. the hierarchy that this NPS espouses). The trends in freshwater are testimony to the fact that we currently have conflict in many areas.

24. **Two ingredients are essential** therefore:

- i) that clauses are explicit when outcomes must be achieved and that
- ii) processes around the likes of setting values for FMUs or limits, identifying primary contact sites and implementation, involve the public so they can understand their importance.

Thus, we think the requirement for community involvement could be made more explicit.

25. **Section 1.6 Definitions:** the definition of efficient allocation needs to take into account the holistic "ecosystem health" objective as well. For example, "inefficiency" can be more acceptable in the case of a leaking primary irrigation channel that recharges groundwater for other users or requiring high quality water for watering the garden.

26. **Section 1.7 Application:** Limiting the consideration of the marine receiving environment to the "coastal marine area" artificially precludes consideration of the overall impact of a contaminant. We know for instance that (like GHG emissions) N and P flux rates already exceed the safe operating space within planetary boundaries. Neglecting that responsibility to other nations and future generations for GHG emissions is surely not something we would wish to repeat for nutrients!

27. To implement the NPS as proposed (especially if a more integrated regenerative approach to landuse optimisation is adopted), regional councils must not only be provided with the necessary capacity, but also for many it will require a move away from **predominantly reactionary processes** around mitigating adverse impacts of proposals to much more proactive community facilitation and information support. This will need careful planning and resourcing.

28. A key support for FMUs will be an **integrated land management model package** (that takes into account physiographic factors), where participants can test the effect of applying different landuse/hydrological/ecological/economic planning scenarios.

29. **Appendix 1A:** We suggest that the concept of "**ecological function**" be included alongside "ecological processes" in the explanation of ecosystem health. It emphasizes the connected and interdependent nature of ecological processes and how they come together (i.e. a wholeness) to deliver stable ecosystems and ecosystem services.

Part 2 Objective and policies

30. We agree that the specified objective and policies must be included in policy statements and plans, and we endorse these as specified in Part 2 of the Draft Statement.

Part 3 Implementing objective and policies

Subpart 1 Approaches to implementing Objectives and Policies

31. We also endorse Part 3 of the Draft Statement, regarding implementation of these objectives and policies, and in particular the concept of integrated management and the need for regional councils to revise their regional policy statements to the extent needed to provide for this, as outlined in Part 3.4 of the Draft Document.

32. We think it would help if the term "integrated approach" was more clearly described. What is being integrated and by whom? What would an entirely integrated landscape look like and what would be the benefits? The concept is crucial, and has been in the RMA since inception but largely overlooked. Councils clearly need more guidance on how to develop policy behind this concept.

Subpart 2 National Objectives Framework

33. We further endorse Subpart 2: National Objective Framework and the identification of Freshwater Management Units (FMUs) with identification of their full range of values and current attributes, as well as the environmental outcomes and target attributes sought, all in consultation with interested parties, including Tangata Whenua.

34. Key to the success will be ensuring that the limits are set to genuinely achieve their purpose, as far as possible all reports benchmark the natural state, there are no loopholes and that wherever possible, input limits are employed rather than output limits for greater certainty. This is part of acknowledging the primacy of ecosystem health/function, and possibly the need for changes to landuse, in some cases accompanied by change in financial circumstance. Farm plans will help farmers address such matters and understand the nature of their risk and exposure.

35. Appropriate and representative monitoring sites also need to be identified and confirmed with similar consultation, and the monitoring methods must be consistent with Item 3.13 of the Discussion Document.

36. We are particularly supportive of the introduction of a dissolved nitrogen (DIN) limits (Table 5) as they will enable more reliable means of assessing and managing algal blooms that can harm freshwater biota, rather than relying on the

proxy attribute of periphyton growth. . Its omission from our monitoring programme has unnecessarily perpetuated uncertainty in management decisions

37. The limits on resource use must be identified and action plans prepared as outlined in Item 3.10 (1 to 6) of the Draft Document.

38. Environmental flows and levels, as well as "take limits" must be developed and set, on the basis of the identified environmental outcomes for each FMU, or individual water bodies within a FMU where appropriate, as outlined in Items 3.11 and 3.12 of the Discussion Document.

39. Any deterioration detected in any attribute state, or a failure to achieve a stated criterion, must result in the preparation of a relevant action plan for reversing or, if not possible, at least halting the deterioration.

Subpart 3 Specific requirements

40. The several specific requirements outlined in Subpart 3, are endorsed, particularly the management and monitoring of Primary Contact Sites (Item 3.18), and Assessing and Reporting (Item 3.21).

Mitigation hierarchy and habitat loss

41. The mitigation hierarchy needs reviewing. The offsetting philosophy assumes a no-net-loss and preferably net gain outcome. Because we are in the midst of massive ecosystem decline we think the objective should be to generate net gain.

42. The mitigation hierarchy attached to land use and development results in slowing down decline, not necessarily preventing it. Thus the seeking of "net gain" should be the basis of strategic and resource consent planning decision-making, as is done currently in the United Kingdom for the English application of Biodiversity Net Gain³.

43. The goal in the draft NPS appears to be to ensure there is no cumulative loss of habitat over time. This does not require the restoration of lost ecosystem values that have already occurred, and feel needs to be stronger.

Wetlands

44. We don't consider offsetting is adequate in the way it is currently approached in NZ. For example, stream ecosystem valuations (SEVs) are poorly implemented in Wellington and Auckland, due to a combination of factors including: inadequate ecological assessment of initial designs, poor implementation of master plans, poor monitoring, and poor consent enforcement. The combination of factors mean the majority of projects using SEV are unlikely to deliver anticipated ecological outcomes.

45. Wetlands deliver to water health water health benefits while at the same time contributing to carbon sequestration and storage, and buffering against climate change impacts such as flooding and erosion. We consider wetland restoration should be actively pursued by using developer credits. In some catchments, the only

³ <https://www.gov.uk/government/consultations/biodiversity-net-gain-updating-planning-requirements>

way to achieve water quality goals while managing such things as flooding will include wetland restoration.

Subpart 4 Exceptions

46. Regarding the Exceptions (Subpart 4) associated with the specified six large hydro schemes, only those aspects directly associated with these schemes, i.e., management of water flows, are stated to be included in such exceptions, but presumably only where they are not constrained by specific resource consents. Controls on water flows or water quality in any of these six large hydro schemes that are governed by resource consents, either under the RMA or special legislation, must surely be honoured.

47. A specified example is the Lake and River Management Guidelines associated with the Manapouri Power Scheme that are formally Gazetted, under terms of the Manapouri–Te Anau Development Amendment Act, 1981, where lake management details of both lakes and associated rivers are specified.

48. Minimum flow details in the upper Waiau River connecting the two lakes, were agreed to: 115 cumecs except under special circumstances and, with agreement of interested parties: 80 cumecs. Also the diversion of specified dirty water flows from the Mararoa River through the Manapouri Control Structure, regardless of the level of Lake Manapouri, was agreed to, as well as the periodic lakeshore monitoring, and these issues were included in the Resource Consents issued by Environment Southland (see Lake Guardians 24th Annual Report).

49. Compensation flows from the Manapouri Control Structure down the Lower Waiau River (16 cumecs in the warmer five months, 12 cumecs in the cooler five months, and two transitional months) were agreed on during the protracted discussion and negotiations with the Working Party established by ECNZ in the early 1990s, and were specified in the Resource Consents (and there were no objections registered against the ECNZ's application) issued by Environment Southland in December, 1996, under the Resource Management Act, 1991, for a 35-year period.

50. There was a proviso, however, that any unforeseen issues could be raised at any time (and the Waiau Working Party was retained for this purpose). Also the need for periodic managed flows between the Manapouri Lake outlet and the Manapouri Control Structure, to remove eutrophic water, when present in this section of the river, and also to remove periphyton, when present in the Lower Waiau River, that were also agreed to between the Manapouri, Te Anau and Monowai Lake Guardians and the ECNZ, and were adopted by the current operators, Meridian Energy, should continue to be honoured. Clearly, these Resource Consents and other formal agreements, as discussed above, that may not be specified in the Consents must continue to be honoured under this proposed NPS to keep faith with the communities who worked to secure them, usually for the wider public good and on sound ecological grounds.

51. The Lake Wanaka Preservation Act, 1973, and the formal control procedures on low levels of Lake Hawea, and constraints on variation in the levels of artificial Lake Dunstan must also be observed as part of the Clutha Hydro Scheme. There may

be other formal constraints on some of the other four hydro-electric schemes that should be specified in the ensuing legislation.

52. It should also be recognised that protecting the continued use of water to generate power may perversely make it more difficult to diversify into other forms of renewable energy that could reduce the adverse impacts on hydro of achieving the freshwater management objective and goals.

53. The other two exceptions specified: for Naturally occurring processes (Item 3.23) and Transitional (3.24), as well as Timing (Part 4), are endorsed.

Part 4 Timing

54. We do not feel we are in the position to make a firm recommendation on timeframes other than to say that these objectives and policies should be given effect as soon as is practicable. To this end there may be scope to finalise policy and deliver desired outcomes earlier with certain parts of the hydrological system. And the longer these processes take the more likely they are to lose momentum or be altered.

55. And the level of resourcing will be a key determinant of what is a feasible timetable.

NPS Appendices

56. Regarding the four Appendices, these provide essential information and direction as follows:

Appendix 1A: Compulsory values: The criteria listed for: 1. Ecosystem health; 2. Human contact; 3. Threatened species; and 4. Mahinga kai, are all relevant and are endorsed.

Appendix 1B: Other values that must be considered: The 'contents' list is endorsed as are the Descriptions of the 'other values'.

Appendix 2A: Attributes requiring limits: The values given for Phytoplankton (Trophic state) for lakes; Periphyton (Trophic state) for rivers; Total nitrogen (Trophic state) for lakes;; Total phosphorus (Trophic state) for lakes; Dissolved inorganic nitrogen for rivers; Dissolved reactive phosphorus for rivers; Ammonia (toxicity) for rivers; Nitrate (toxicity) for rivers; Dissolved oxygen for rivers; Suspended fine sediment for rivers and streams; Escherichia coli (E. coli) for lakes and rivers; and Cyanobacteria (Planktonic) for lakes and lake-fed rivers, have each been specified for relevant and defined 'Attribute bands', including 'National Bottom Lines.' These values have apparently been set by qualified freshwater ecologists and are therefore endorsed.

Appendix 2B: Attributes requiring action plans: are listed as: Macroinvertebrates for Wadeable streams and rivers for two different 'Attribute units'; Fish in wadeable rivers; Submerged native plants in lakes; Submerged invasive plants in lakes; Deposited fine sediment in wadeable rivers and streams; Dissolved oxygen in rivers; Lake-bottom dissolved oxygen in lakes; Mid-hypolimnetic dissolved oxygen in

seasonally stratifying lakes; Ecosystem metabolism in rivers; and Escherichia coli (E. coli) in primary contact sites in lakes and rivers (during the bathing season). Again, the standards have each been specified for relevant and defined 'Attribute bands', including 'National Bottom Lines', and the values have apparently been set by qualified freshwater ecologists and are therefore endorsed.

Appendix 2C: Sediment Classification Tables. Here values are given for both suspended and deposited sediments, in 12 sediment classes and with three environmental variables, of Climate (six categories), Topography (Source of the flow: five categories) and Geology (seven categories). Again, the detail is appropriate and this classification is endorsed.

Appendix 3: National target. This describes target details for 2017 (current), 2030 and 2040, for an increase in the proportion of specified rivers and lakes that are suitable for primary contact (from currently 71% suitable, to 80% and then 90%), and also to improve water quality across all five categories specified on the basis of E. coli and cyanobacteria content of the water. Such an approach is clearly aspirational but is strongly endorsed.

Appendix 4. Temporary exception for specified freshwater management units. This is to make provision for any period when an exception is justified for a FMU. This provision is endorsed.

Thankyou for the invitation to submit. We should like to have the opportunity to be heard if that is offered.

Signed. Alan F. Mark, FRSNZ, KNZM,
Chair, Wise Response Society Inc.

Appendix A: Background to the Wise Response Society Inc.

Purpose of Society:

1. Wise Response is an Otago-based but New Zealand-wide, non-partisan Society, launched in 2013, with the purpose of persuading the New Zealand Parliament, Government and New Zealand society in general, to confront and respond effectively to any confirmed threats arising from the question:

"As demand for growth exceeds earth's physical limits causing unprecedented risks, what knowledge and changes do we need to secure New Zealand's future wellbeing?"

2. Chairperson Sir Alan Mark conducted a nation-wide tour that year with 11 public meetings from Auckland to Invercargill to explain the Society's purpose and strategy, and gain support. The Society strength is in the wide range supporters who participate in online discussions around the "limits" theme, many being experts in their professional fields are able to provide multidisciplinary input into our initiatives. Our Patron is Sir Geoffrey Palmer QC.

3. In April 2014, we presented our 5,000-signature petition to Parliament, that recommended they undertake a Risk Assessment of New Zealand, in five subjects as follows:

- i. **Financial security:** the risk of a sudden, deepening, or prolonged global financial crisis.
- ii. **Energy and climate security:** the risk of continuing our heavy dependence on fossil fuels.
- iii. **Business continuity:** the risk exposure of all New Zealand business, including farming, to a lower carbon economy.
- iv. **Ecological/Environmental security:** the risks associated with failing to genuinely protect both land-based and marine ecosystems and their natural processes.
- v. **Genuine well-being:** the risk of persisting with a subsidised, debt-based economy, preoccupied with maximising consumption and GDP and increasing inequality.

4. The Appeal sought a commitment to a quantitative, cross-party risk assessment of how and exactly where New Zealand is exposed, as a rational, integrated basis for planning a more secure future. The petition was referred to the Finance and Expenditure Select Committee, with a hearing on July 1, 2015. The majority response was negative, claiming Government was adequately addressing the issues of concern, but the three minority parties (Labour, NZ First, Greens) offered strong endorsement.

Typical activities

5. In October 2014, members Sir Alan Mark and Prof Peter Barrett presented a resolution to the Royal Society Fellows AGM, which resulted in the Society producing and publishing two commissioned reports in 2016, on the Implications and the Mitigation of Climate Change in New Zealand.
6. Another significant initiative was to hold two meetings in Wellington with about 25 NGOs, to facilitate development of a Position Statement and Action Plan on climate change, under the name Climate Consensus Coalition Aotearoa (CCCA). Given the political vacuum at the time, this was to propose a goal and process by which to develop a New Zealand Plan to give effect to the spirit and intent of the Paris Accord of Dec. 2015. The total of individuals and the membership of organisations which formally endorsed the CCCA numbered approximately 330,000 from about 100 organisations.
7. In August, 2017 we made presentations of the CCCA Action Plan to MPs at Parliament, through GLOBE-NZ members (arranged and chaired by Dr Kennedy Graham) and an invited audience of all MPs in the Beehive Theatre.
8. Our Society also makes regular submission on a range of policy change issues. Examples include the Emissions Trading Scheme, the Resource Legislation Amendment Bill, Regional Policy Statement of the Otago Regional Council (and mediation with Dr Royden Somerville QC and Will Anglin as Counsel which has since been appealed to the Environment and High Courts), New Zealand Energy Efficiency and Conservation Strategy, the Productivity Commission, the Child Poverty Reduction Bill and the Tax Review Group, and most recently, the Zero Carbon Bill with particular focus on methane.
9. The Society also aims to raise climate change/environmental awareness through public meetings. In November 2017 we arranged a seminar on Integrated Landscape Management. In Jan. 2018, the Society held a public meeting on: "Climate Change issues: from Bonn COP23 and Beyond", with Central and Local Government responses, addressed by the Hon James Shaw, Minister of Climate Change, Mr Dave Cull, President of Local Government New Zealand and Hon Clare Curran, MP for Dunedin South, with some 400 attendees. This has been followed by public meetings on: "Tackling our Climate Emergency Head-On: Carbon Accounting" and "Impacts of the Mining/Minerals Industry", timed to coincide with the national Minerals Forum in Dunedin in May 2019.
10. In 2018 we participated in the National Science Challenge to report on "Transformation of land-based industries" and in Sept - Oct ran a 6 week course for U3A on the "Finding a Sustainable Transition Path to Zero Net Carbon Emissions for New Zealand".
11. We have also host three interns from the Otago University to undertake projects concerned with sustainability. Further information is available at our website: www.wiseresponse.org.nz