31 October 2019

To: consultation.freshwater@mfe.govt.nz

NZ Association of Scientists Submission on

Action for healthy waterways: A discussion document on national direction for our essential freshwater

This submission is from the New Zealand Association of Scientists (NZAS) and reflects the views of the Association. We are an independent association of researchers who work and advocate for science in New Zealand, increase public awareness of science and expose pseudo-science, debate and influence government science policy, improve working conditions for scientists, including gender and ethnic equality, promote free exchange of knowledge and international cooperation, and encourage excellence in science. The Association membership includes physical, natural, mathematical and social scientists. www.scientists.org.nz

We commend the overall goal of the discussion document's proposals: clarifying that the overarching value to be maintained and protected both nationally and regionally is the health of freshwater ecosystems and signalling clear intent via practical steps to achieve this. We also commend and support the work and recommendations of the advisory groups and particularly the Scientific and Technical Advisory Group (STAG) within their Terms of Reference (ToR).

We note that the proposed policy package contained copious detail, yet lacked a clear framework beyond specific policy documents and the conceptualisation of ecosystem or ecological health. During nationwide consultations, there was observable difficulty answering good questions about these details from the rural sector. This situation leads to contentious, polarised discourse, which typically obstructs or limits the use of research and evidence to solve problems effectively.

NZAS is not the appropriate body to comment on details, but we note our support for the recommendations of the STAG and the submission of the relevant body, the New Zealand Freshwater Sciences Society addressing the extensive detail and definition of freshwater ecosystem health.

The purpose of this submission is to raise awareness of and propose solutions to issues we see with the intersection of this package and other national directions, and that relate to our mission – particularly the intersection of science and policy. We therefore address consultation questions 7, 8, 9 and 79.

Overall, we express concern about the lack of a framework, which points to issues with the role of science and research expertise in the design of the package, evident in the partitioning and Terms of Reference of the advisory groups. The limitation of STAG's ToR to focus on the health of freshwater ecosystems misses the important point that freshwater ecosystems exist within larger catchment ecosystems. As a result, the advisory groups have lacked a pathway or expertise for the consideration of either the science of land use within catchments, or the social science related to human decision making and values from the levels of individuals to governance. Lag times associated with both land use and societal processes are essential to consideration of whether reforms can deliver on the proposed timescales, and remain stable across 3-year electoral cycles for central and local government.

These issues can be remediated in further development of the policy package and its interaction with Resource Management Act (RMA) reform and other national directions by considering the following.

1) For over 25 years, recognition of Post-Normal Science[1] (PNS) has grown in areas such as climate change and large-scale watershed management. The characteristics of problems requiring PNS include high stakes, high uncertainty, urgency and values in dispute. Mechanisms to address PNS include[2] explicit management of uncertainty; coordination of diverse perspectives to mix science with business, politics and society; and extension of the scientific peer community to include social, political and economic dimensions. Thus, the policy package addresses a problem clearly defined as PNS, yet these three mechanisms appear missing from the process, including the advisory group structure and discussion documents. These mechanisms can be added as a next step, as they are generally recognised as complementary to the advisory processes used to form the policy package. A logical process consistent with PNS would be the formation of the Commission recommended by multiple advisory groups, designed in parallel to the proposed Climate Commission, and presumably sharing some sectoral membership and representation of Te Ao Māori. **To design and achieve this, invited dialogues or roundtables provide a useable model of scientists interacting with an extended peer community to ensure the problem and solutions are well framed.**

2) An obvious and well-developed approach consistent with PNS for addressing complex issues[3], that can achieve enhanced effectiveness through RMA reform is Adaptive Management, including a scientific assessment process[4]. Adaptive management and assessment processes on appropriate cycles can reduce the need for excessive detail and/or predictive modelling prior to implementation and enhance transparency. Such assessments provide a specific approach to satisfy requirements for review in s79 of the RMA and have been pioneered in plan changes managing nutrient loads to lakes in the Taupo[5] and Rotorua[6] catchments. **We therefore suggest incorporating assessment cycle in the National Policy or Environmental Statements, or RMA reform, to strengthen the transparent enforcement of objectives, building on review requirements in s79 of the RMA.**

3) There remains a need for improved engagement with a full view of Te Mana o te Wai within Te Ao Māori, consistent with the report of the Kahui Wai Māori and the recent report of the Waitangi Tribunal on Wai 2358. **We recommend considering implementing these objectives**

as part of the two recommendations above, giving regard to recognition of diverse perspectives using a PNS framework and transparency using well-staged adaptive management and assessment cycles.

Last, after incorporating the suggestions above, it will also be important to consider the costs and workforce planning required to deliver the scientific and technical requirements. In addition to the usual process of costing, a residual problem that needs to be considered in RMA reform is how much regional ratepayers should bear the costs of science primarily meeting the demands of elected central government. *The correct funding of localised costs with national benefits is an important but consistently overlooked issue, and may also reflect unfunded demands on stakeholders including communities, NGOs and iwi/hapū to engage with detailed and locally specific proposals.* Realistic understanding of timeframes for discourse also deserves recognition in framework development.

Taken together, these recommendations are important steps to improve the consistent and transparent use of evidence, as well as maintain and improve respect for science and scientists in the management of New Zealand's freshwaters – a taonga.

Sincerely

Prof Troy Baisden (President) on behalf of the NZAS Council

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[1] Funtowicz SO, Ravetz JR 1993. Science for the post-normal age. Futures 25(7): 739-755.

[2] Petersen AC, Cath A, Hage M, Kunseler E, van der Sluijs JP 2011. Post-Normal Science in Practice at the Netherlands Environmental Assessment Agency. Science, technology & human values 36(3): 362-388.

[3] Kay JJ, Regier HA, Boyle M, Francis G 1999. An ecosystem approach for sustainability: addressing the challenge of complexity. Futures 31(7): 721-742.

[4] Holling CS 1978. Adaptive environmental assessment and management. In: International Series on Applied Systems Analysis. Brisbane, Wiley.

[5] Policy 5, p 3-189 in Regional Plan Variation 5 inserted as 3.10 in Waikato Regional Plan. https://www.waikatoregion.govt.nz/assets/WRC/Council/Policy-and-Plans/Rules-and-regulation/WRP/Chapter-3-Water-Module-Operative-Waikato-Regional-Plan-to-include-NESPF-amendments-as-at-9th-August-2019.pdf (Accessed 30 October 2019)

[6] Method LR M2 in notified version of Plan Change 10. https://cdn.boprc.govt.nz/media/508998/n-lake-rotorua-nutrient-management-plan-change-10-version-4-for-notification-29-february-2016-copy.pdf (Accessed 30 October 2019)