We are glad to see the reforms being proposed under Essential Freshwater, and we are mostly supportive of what is proposed. Our freshwaters are in a dire state. For too long we have treated the waters without respect and without acknowledging the importance of our freshwaters for their physical, cultural, and spiritual significance. We are glad that this is to be corrected. It will be a journey that will bring us closer to nature.

We make the following comments on the sections in Essential Freshwater, Action for Healthy Waterways, September 2019.

1. Section 5.6 Wetlands
In the Resource Management Act a “wetland” includes permanently or intermittently wet areas, shallow water, and land water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions.

There is a major problem with this definition. It excludes wetlands that still have the hydrological components of a wetland but barely “support a natural ecosystem of plants and animals that are adapted to wet conditions”. This means that damaged wetlands, including peatlands, may not be considered to be a (natural) wetland. Nevertheless they are restorable to a fully functioning wetland. Damaged (but restorable) wetlands are in a precarious position in New Zealand, and are extremely valuable as so few wetlands remain and the damaged ones need to be protected and restored to good health. (As a side benefit, peatlands are also huge carbon sinks.)

The RAMSAR definition of a wetland should be adopted. This definition focuses on the presence of water rather than on the presence of plants and animals that are adapted to wet conditions. Note that New Zealand is a member of the Ramsar Convention of Wetlands.

2. The NPS-FM needs to ensure that damaged wetlands be encompassed in the definition of wetland.

3. We support the identification and delineation of all wetlands using the RAMSAR definition, whether they are fully functioning or damaged.
All such wetlands, whether they are fully functioning or damaged, should be protected.

4. All wetlands over a minimum size should have restoration and management plans defined.

5. Peatlands and other wetlands provide many benefits. In particular, the carbon sink value of peatlands is huge. The carbon sink value of wetlands needs to be assessed and recorded in a
Carbon Store register. Conversely the continued degeneration of wetlands, especially peatlands, similarly needs to be assessed and the carbon emissions recorded in the Carbon Store register.

6. Section 5.8 Nutrient pollution
There needs to be better management of the application of nutrients in urban settings. In particular, nutrients are currently getting into aquifers from excess fertiliser put on parks, golf courses, school grounds and other large grassed fields. We suggest determining optimum fertiliser amounts using similar techniques as farmers use on their farms (eg, OVERSEER). This will help ensure that all the fertiliser is absorbed by the grass and not sink down into the aquifer, and ultimately into a river or drinking water supply.

7. Section 5.8 and 5.10 Water quality
There needs to be full recognition of the presence of toxic cyanobacteria in our rivers. The presence of toxic cyanobacteria is a significant threat to the health of people especially children, and animals, especially dogs. Since 1995 12 dogs have died from toxic cyanobacteria in the Hutt River.
Cyanobacteria needs to be one of the attributes that is measured, distinctly from other (harmless) periphyton.

8. Section 5.9 Sediment
We strongly support the reduction of sediment getting into our streams from plantation forestry and from urban development.

9. Section 5.10 Swimming
The public do not know what the various quality attributes mean. Their information needs are quite simple: is it drinkable? is it swimmable? Swimmability must incorporate the absence of toxic cyanobacteria and the absence of e-coli. It is highly misleading (and actually a lie) to declare a river as swimmable because of low e-coli when there is toxic cyanobacteria present.

10. Section 5.11 Flows
Sufficient water flow is not only needed for ecosystem health but also for swimmability. This should be part of the criteria for deciding water takes.

11. Section 7.2 Wastewater
We support the development of a NPS for Wastewater Discharges and Overflows. This needs to ensure better management of septic tanks. Landowners install septic tanks and then often forget about them, and the septic tank eventually no longer functions properly. It should be compulsory for all septic tanks to be inspected regularly, the inspection report lodged with their Council, and remedial action taken as identified in the report.

12. Section 7.3 Stormwater
We support the elimination of cross-connections between the wastewater network and the stormwater network through which rain water gets into the wastewater network and causes overflows.
It should be a requirement for Councils to systematically eliminate cross-connections in their territories including gulley traps that receive rainwater.
It should be a requirement for landowners to verify, upon sale of their property, that their stormwater does not go into the wastewater network.

13. Section 7.3 Water sensitive urban design
We strongly support Water-sensitive urban design practices. Urban development should be required to follow such practices. It should not be optional. To safeguard our aquifers it is essential that rainwater not be siphoned off quickly to a nearby stream or river. Rather it should be allowed to recharge the aquifer where possible.

14. Section 11.2 Plantation forests
The NES-PF does not sufficiently protect streams in plantation forests and native bush growing in the riparian zone. Riparian zones need to be left undisturbed so the native bush can flourish. This supports the health of the water bodies, reduces sediment getting into the water bodies, and provides an eco-corridor through the plantation forest. Furthermore the width of the riparian zone needs to be doubled to give better protection to the native bush and the water bodies.

Thank you for the opportunity to make constructive comment on this important endeavour – to restore our waters to being treasured and healthy.

Pat van Berkel