APPENDIX G:

Dr Adam Canning

Response Schedule I:

The PNRP does not distinguish between the relative importance of trout fisheries (i.e., regionally vs locally important) nor does it have any policies, rules or methods that are linked to relative importance. Rather it simply has one category that combines both regionally and locally important trout fisheries. Unless there are rules, policies or methods that are also linked to relative importance then there would be no benefit separating the Important Trout Fisheries into Regional and Local importance. As such, the task assigned to Dr Canning was based on objectives and policies in the proposed plan and did not require criteria that assesses relative importance - such boundaries are also highly subjective requiring an expert judgement call. There are no objectives and policies requesting that to be broken down into regional and local importance. Furthermore, angler days, whilst useful, alone they are insufficient to ascertain the importance of trout fisheries. The dataset is based on where anglers say they have been fishing and may not always match with where they actually fish, many sites are not detected or appear to have low angler days because that information was not captured by the survey. Furthermore, the value of a single angler day can differ between rivers as rivers may be valued for different reasons. As an example, in some cases, a river with few angler days can be highly valued because of the solitude it provides. For these reasons, a range of common criteria and expert judgement were used to identify Important Trout Fisheries. Regarding the data held by Council, GW do not hold data on trout populations because this is the statutory role of Wellington Fish and Game Council, not Greater Wellington Regional Council.

The claim that trout have eradicated from the Kaiwharawhara River catchment is incorrect, nor have the Wellington Fish and Game Council (WFGC) permitted the eradication of trout from this catchment. The Kaiwharawhara Catchment provides a unique, highly natural fishing experience that is close to home for many Wellington anglers.

With respect to identifying spawning reaches, the data collected by WFGC was not originally collected for the purposes of identifying 'Important Trout Spawning' reaches rather for sports fishery management purposes, though it is critical to the identification of 'Important' trout spawning habitat. When interpreting redd survey data (the primary method used to identify trout spawning), it is important to consider the following:

Despite the relative ease of this method, it has numerous drawbacks including:

1. There can be large uncertainty between observer counts and actual occurrences (Dauphin, Prévost, Adams, & Boylan, 2010).
2. Redds disappear quickly after initially observed. Approximately 70% will disappear after 30 days of initially sighted (Hassemer, 1992).
3. Redd occurrence is hap-hazard and can differ between weeks and years (Hassemer, 1992; Lapesa, Ginés, & González, 2016; Susac & Jacobs, 1999).
4. Should be conducted weekly during first half of the season or when flows are variable (Hassemer, 1992; Susac & Jacobs, 1999).
5. Egg checking via excavation can damage eggs (Lapesa et al., 2016).

6. Needs clear water with high colour contrast between disturbed and undisturbed gravel (Hassemer, 1992; Lapesa et al., 2016; Susac & Jacobs, 1999).
7. Redds often occur in clusters and could be missed outside of surveyed area (Visser, Dauble, & Geist, 2002).
8. In-water checks are dangerous and walking along river edges can be hazardous.
9. Trout will not always spawn in a reach with suitable spawning habitat every year. A single turbid flow can direct trout from migrating into one tributary towards another.
10. The presence of a redd or many redds does not confer spawning success. A single hen can lay ~500-2000 eggs in one spawning event, if all these eggs hatch and survive then this can be a substantial contribution to the overall trout fishery. On the contrary, a river may have many redds, but a single flood could decimate all the redds.

In light of these uncertainties, it is not prudent to use redd surveys to gauge the *relative importance* of trout spawning reaches. Rather redd surveys provide an indicator of the presence/absence of spawning activity. For these reasons, any trout spawning habitat identified within the catchment of an Important Trout Fishery has been listed as important.

Greater Wellington have not attempted to designate the spatial extent of trout spawning within a river because there is insufficient data to inform spatial extent, a single flood can shift suitable gravels outside the initially described extent, and the protection of trout spawning habitat requires management of upstream impacts which can flow down and impact trout spawning habitat.

Finally, the list of rivers in 'Schedule I Important Trout Spawning' is highly conservative and limited to where to WFGC have current in-person survey data. The true extent of trout spawning habitat is much larger and various work-streams are underway to increase the knowledge of the spatial extent of trout spawning occurrence, these works will likely inform future reviews and decision making.

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