BCWF Questions for February 26 2024 Balfour Public Meeting

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My career spans over 50 years as a fisheries biologist specializing in large lake management and in particular kokanee. I was fisheries manager for Kootenay Lake for 20 years overseeing reconstruction of the Meadow Creek spawning channel and construction of the Redfish, Kokanee Creek and Hill Creek spawning channels. I have written dozens of technical reports on the lakes' fish populations. After holding numerous senior fisheries positions in the provincial government, I was promoted to Provincial Director of Fisheries. On retirement I became BCWF President and am still involved in the organization as well as the West Arm Outdoors Club. My extensive knowledge, background and passion is what motivates me to emphasize the lack of success and need to point out the ongoing failure of the Ministry to recover the Kootenay Lake fishery after over a decade of half-hearted efforts. Today you will hear the Ministry give a positive, if not rose-colored glass view of kokanee recovery. I hope they are correct but I, and others with extensive expert fisheries experience, have some doubts.

INTRODUCTION

The purpose of this summary is to inform the public that for the past 10+ years the Ministry has failed to successfully implement adequate and timely actions to recover Kootenay Lake when solutions were at hand. While it is quite possible that kokanee recovery is underway given the more recent data, there is an equal chance it may not be. The BCWF and local club are skeptical of the Ministry's current optimism on recovery based on past performance and numerous mis-steps (see page 4 for details of some but not all ministry mistakes). Additionally, the Ministry's data presentation is quite selective and glosses over some key questions, specifically whether further reduction of predators remains a priority. The ministry refused to allow the BCWF to speak at this meeting hence this four-page outline of doubts and concerns.

In 2014 the Ministry in charge of fisheries management contracted Redfish Consultants to develop an Action Plan for lake recovery. That draft report was hotly disputed and ridiculed by ministry staff. It took 2 years of extensive editing to finalize the report. Meanwhile Ministry staff continuously ignored the key recommendations in the report. Key recommendations were to; 1) reduce predators, and 2) plant massive numbers of kokanee eggs in Meadow Creek annually. <u>These same measures were successful in recovering the impacted kokanee populations in Idaho on Lake Pend Oreille.</u>

One of many reasons for doubt was that in 2016 the ministry predicted kokanee recovery by 2019 which didn't happen and you are now hearing 4 years later that it is happening---maybe? Instead of taking expert advice and solving the problem over 10 years ago the ministry stumbled along with a status quo management strategy that failed on several counts. Finally in 2022 the Ministry accepted the original recommendations: removing predators and kokanee eggs plants averaging about one million per year.

Obviously, we all hope we are wrong, that we do indeed see recovery; if so, how long before full recovery? These questions have been raised by the BCWF at the ministry advisory committee and have been ignored or disputed. The following are key concerns of why the local club and BCWF are doubtful of the Ministry's outlook and timelines on recovery.

1. Concern: Natural Kokanee egg deposition insufficient

The ministry data on kokanee egg deposition doesn't provide the public with context as it only emphasizes the last decade results. This is deceptive. Prior to the collapse over a decade ago, egg deposition ranged between **150-250 million** eggs. Today we see the 2019 deposition was 20 million and four years later it increased to 42 million. In 2020 deposition was 38 million and predicted to be 55 million in 2024. That sounds promising. However, in the following 2 years, - 2025 and 2026 – based on the number of fry that were produced in 2021 and 2022, we know very low numbers of adults will return to spawn and egg deposition will be much lower - around 20-30 million. Meanwhile, predator numbers remain high and they continue to eat kokanee. Bottom line---recovery might be underway but it might not. The ministry has been wrong every time during the last decade. (See page four.)

QUESTION: Based on the Ministry's data, how many cycles will it take to see historical numbers of 1 million kokanee spawners? The answer is **a minimum of 2 cycles or 8 years**. This could have been avoided if the ministry had implemented the 2014 report recommendations. It has only been in the last 2 years that the Ministry committed to predator reduction and 2023 results of this work were encouraging. However, the 2023 Gerrard spawner numbers remained high and the target of reduction to 50-100 spawners was not achieved as over 300 were confirmed spawning at Gerrard. Similarly last year the efforts to reduce Kaslo River bull trout fell short of the target of less than 50 spawners as 171 returned to spawn. Despite the removal efforts of the Ministry, they did not meet their own predator reduction targets required for recovery, and kokanee predator numbers remain high.

2. Concern: Future plans for Gerrard reductions that are expensive

In addition to First Nations successful gill netting, the Ministry plans to angle for 2024 Gerrards in the Lardeau River to reduce spawner numbers to less than 100. This likely means catching 100-200 spawners by angling. Existing data from 2022-2023 river fishing suggest one fish can be caught every 10 hours of fishing. This means to remove 100-200 trout it will require 1000-2000 fishing hours. The Ministry proposes to do this with paid staff. Given staff salaries, potential overtime, time spent travelling from Nelson, potential hotels and meals, and an expected effective fishing time of about 4-5 hours per day, it will take 200-400 person days of fishing to capture 100-200 trout (Even this is an unrealistic target given unpredictable weather and river conditions). At a minimal cost of $400/day this means a public expenditure of at least $80,000-$160,000 to capture 100-200 trout. **This is not cost effective.** Removal of spawners at the Gerrard spawning grounds through a combination of removal methods (e.g. netting, etc.) would be far more cost effective. It is important to note that without the targeted Gerrard removals in the last two years spawner numbers would again be increasing similar to the collapse in 2013.

The Ministry had Dr. McAllister, Associate Professor, UBC, develop a model for Kootenay Lake kokanee and Gerrard rainbow trout. The output of that model showed that Gerrards needed to be reduced and kokanee populations rebuilt through stocking of eggs. At that time the Ministry ignored both of these results. Juvenile Gerrards in the lake today are surviving at a higher rate despite lower numbers entering the lake. This is problematic going forward and confirms the necessity of continued predator removal.

***QUESTION: Why does the ministry insist on fishing themselves rather than use a permit to allow public volunteers with compulsory reporting at far less cost?.* And, why not focus on capturing spawners at Gerrard where they are concentrated in a 300 m stretch of river?**

3. Concern: The other predator - Bull Trout - reduction plan?

Bull trout are as abundant as rainbow trout with about 3,000 spawners per year compared to 200-500 Gerrard spawners; however, Gerrards are far more productive so let's assume equal numbers in the lake. Currently the ministry is pre-occupied with low bull trout numbers in the southern streams, specifically 2023 Midge Creek low bull trout redd counts. This observation is potentially leading to a knee jerk response to reduce fishing limits for bull trout. Why and how does this fit with predator removal? The 2023 data also shows high numbers of bull trout in the Kaslo river system. Southern bull trout stocks are near the southern end of their range and are likely limited by warm stream temperatures and climate change associated shifts (e.g. lower flows, higher temps, longer heat periods, etc.). Bull trout are virtually non-existent further south in Northern Idaho and Oregon. On the other hand, strong stocks are found in the northern cold streams of the lake but the Ministry doesn't monitor these streams except for partial monitoring at Meadow Creek. The data presented is skewed and does not show the full picture.

QUESTION: If the ministry is committed to predator reduction for kokanee recovery why cease bull trout removals when the data shows low exploitation in the fishery and strong stocks doing well?

The answer is a full-on removal is necessary to achieve recovery, not half measures or no measures as has occurred over the last decade. The reality is that the lake fishery is comprised of a mix of weak southern stocks and strong northern stocks which means the weaker stocks are persecuted disproportionately by the fishery hence lower numbers. (E.g. If you have 10 southern fish and 100 northern fish one southern harvested BT represents 10% of the total while 1 northern fish harvested represents 1%.) So the fishery will drive the southern stocks lower no matter what the Ministry does and their intentions are misguided. Huge removals of the strong northern stocks are required, not "saving" the southern stocks. Bull trout are notorious strayers so even if the southern stocks disappear to achieve kokanee recovery these systems will repopulate through straying. There is also at least 3-4 years of juveniles in streams and resident stream bull trout that can and will repopulate those streams once kokanee recovery is achieved.

QUESTION: Does the Ministry intend to reduce bull trout in 2024 and what measures are planned?

The answer is maybe but on a very limited scale, so **could they be wrong again**? The strong northern stocks are being ignored. This approach could well end up driving the kokanee back down to low numbers. Insufficient predator suppression through half-hearted efforts will predictably lead to lack of success in kokanee recovery.

SOLUTIONS: WHAT NEEDS TO BE DONE AS PROPOSED BY THE BCWF and the WAOC.

- Implement an independent review of the Ministry's recovery actions on Kootenay Lake, including long term economic impact assessment.
- Provide stronger incentives for anglers to harvest the predators.
- Continue netting of Gerrards at the Duncan River outlet and Duncan Dam channel.
- Remove Gerrards off the spawning grounds rather than angle for them in the river. The target should be < 100 spawners in 2024.
- Implement a permitted public fishery on the Lardeau River with mandatory reporting.
- Aggressively remove strong stocks of Bull trout in the Duncan and Lardeau tributaries. The target should be removal of 1000 spawners.
- Plant 5-10 million eggs in Meadow Creek to compensate for the weak cohorts in 2025 and 2026.

- Change regulations to allow an angler to use two rods on Kootenay Lake.

Examples of mistakes or lack of actions by the Ministry over the last decade:

- The Ministry has been aware for a long time what the implications are of too many predators in Kootenay Lake. A model developed for the Ministry by Parkinson and Korman(1994) predicted a kokanee collapse if predator numbers in the form of Gerrard yearlings were increased (stocked) by 40,000 from the estimated 65,000 that are produced naturally in the Lardeau River at that time. Most recent estimate place the Lardeau as producing 35-75,000.
- In 2009 the Ministry expressed concern about increased predator numbers on its web site when contemplating fishing regulation changes. So despite claiming uncertainty of cause of the kokanee collapse they did express concern about building predator numbers years before the collapse!
- In 2005 the Ministry changed the fishing regulations to be more conservative with the rationale being conservation of Gerrard Rainbow Trout conservation. **Big mistake, absolutely wrong**.
- The 2014 draft recovery plan was heavily edited with removal of predators deleted.
- The acoustics data for 2015 predicted a spawner escapement of only 30,000 Kokanee but this data was ignored and the Ministry "experts" predicted an escapement of 350,000 based on Ministry modeling. This estimate was then revised downward to 150,000. The actual number that returned to spawn was **< 20,000 kokanee.** This hardly gives confidence to the latest Ministry predictions.
- ✓ The BCWF opposed the 2014 Ministry's proposal to have kokanee harvest set at 2 fish per day in 2015. Ultimately the Ministry capitulated and set the harvest at zero.
- In 2016 the Ministry increased harvest level from 2 to 4 rainbows > 50cm/day yet continued to oppose predator removals. They also removed use of barbed hooks to reduced angler success. Today you can use barbed hooks thus leading us to question if the ministry knows what it is doing.
- In 2015 the BCWF recommended that 5 million eyed eggs be planted in Meadow Creek. Only 1.4 million were collected that year. Note that disagreement on where to plant eggs continues.
- The BCWF has made numerous positive suggestions to the Ministry on how to recover the fish stocks. These suggestions continued to be rebuffed by the Ministry. The BCWF recommended egg plants in 2016 of 10-15 million into Meadow Creek spawning channel
- At two previous Balfour public meetings Ministry staff have presented rose-coloured opinions of the lake's fish populations and their opinions have fallen well short of the facts. Excuses such as disease, inadequate lake fertilization, and mysis shrimp and other unproven theories have been presented with a strong reluctance to agree that predation has been the primary cause of the kokanee collapse. For over a decade the ministry has failed the local fishing community.
- In 2017 a fence was set on the Kaslo River and used to pass upstreaming spawning Bull Trout to spawn despite knowing these predators were suppressing kokanee. It was a huge mistake not killing these spawners. Not until 2023 were Kaslo River bull trout killed.
- Instead of reducing Gerrard spawners and thereby new recruits, the Ministry relied on the BCWF head recovery project (2000-2023) to resolve the problem and failed to implement effective measures to reduce the predators. BCWF advised that head recovery alone would not solve the problem. Three years later and there is limited evidence of any recovery. .
- The Ministry implemented and paid for the My-Catch program in 2023, and catch results were poor
- In 2023 ministry staff salvaged juvenile bull trout at Meadow Creek during channel scarification while other staff were attempting to kill bull trout elsewhere. **Why the contradiction**
- In 2023 the ministry would not remove Gerrard spawners from the spawning grounds but spent hundreds of hours fishing for the 23 Gerrards they caught in the river. Ineffective and costly results.
- To date the Ministry has not stated target plans for removals – why?.

All of these examples and several more not listed of Ministry mistakes or inactions causes the club and the BCWF to have doubts on the Ministry's latest prediction that kokanee recovery is underway.