ENVIRONMENTAL DYNAMICS INC.

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EDI Project No: 23Y0100

Alsek Renewable Resource Council
Box 2077
Haines Junction, YT. Y0B 1L0

Attention: Casandra Wheeler, Executive Director – Alsek Renewable Resource Council (ARRC)

RE: 2023 Kathleen River Snorkel Survey Summary and Project Update

Summary

Due to concerns regarding a decline in angler success for lake trout in the Kathleen River system the ARRC approached EDI with an interest in methods for assessing the population of lake trout in the Kathleen River system.

The goal of the Kathleen River snorkel survey project was to gauge the success of snorkel survey methodology at providing a cost-effective means of assessing the population status and trends of the lake trout population know to be present seasonally in Kathleen River system. Additional aims of the fieldwork were to determine if lake trout were spawning in the Kathleen River system and determine when lake trout enter and exit the system.

Kathleen River snorkel surveys identified a peak lake trout count of approximately 620 individuals in mid-September 2023 (Table 1).

Table 1. Summary of 2023 Kathleen River snorkel survey results.

Survey Date	Surveyed area	Total Number of lake trout observed (n)	Survey Comments
August 12, 2023	to Lower Kathleen Lake	6	First trial survey from bridge to Lower Kathleen Lake
August 30, 2023	to Rainbow Lake	63	Established focus areas for surveys
September 13, 2023	to Rainbow Lake	620	Lots of individuals observed throughout
September 30, 2023	to Rainbow Lake	607	No individuals in lower surveyed section
October 14, 2023	to Rainbow Lake	10	No individuals in lower surveyed section

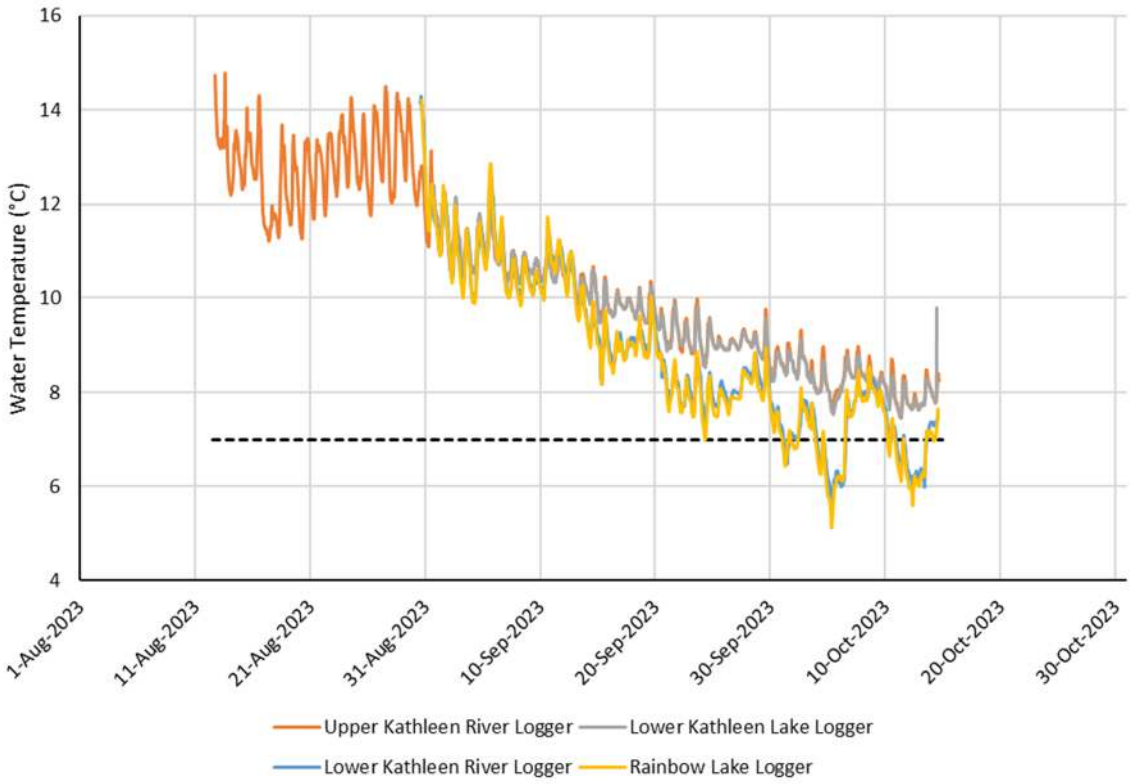

Figure 1. Water temperature in the Kathleen River system during 2023 snorkel surveys. Seven degrees Celsius (7°C) is highlighted as a dashed line on the figure.

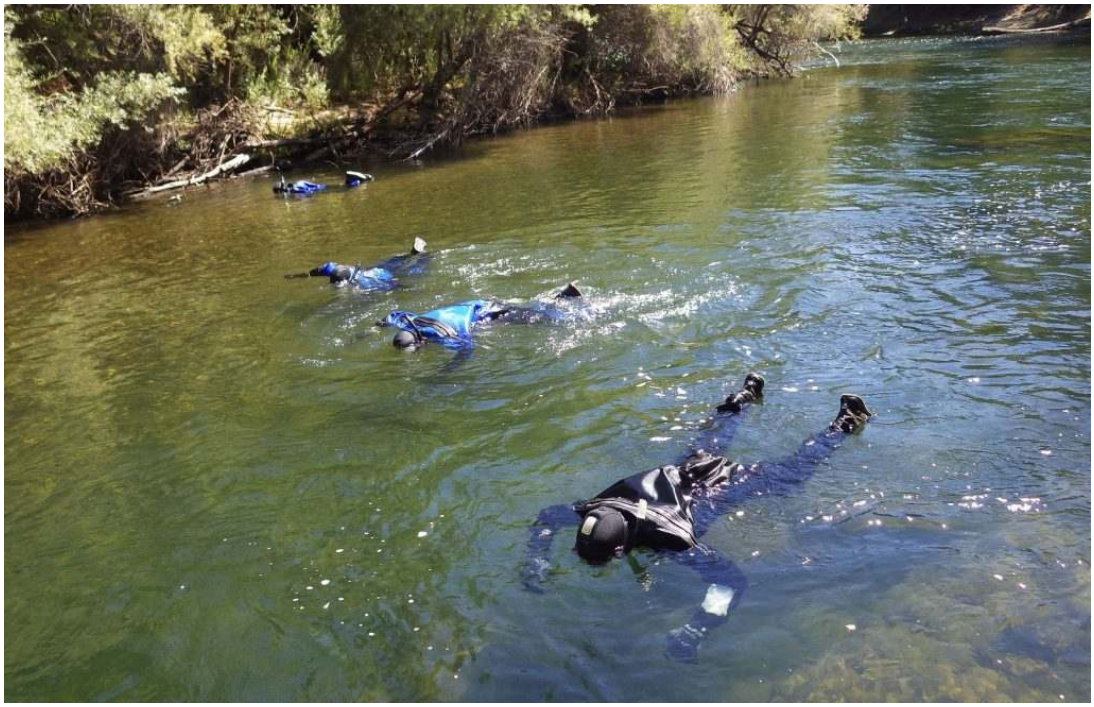

Photo 1. Example of typical snorkel survey methodology (photo from: https://fishbio.com/dog-days-summer-snorkel-surveys/)

Photo 2. Lake trout observed during 2023 Kathleen River snorkel surveys.

Photo 3. Lake trout and some round whitefish observed during 2023 Kathleen River snorkel surveys.

Photo 4. Additional lake trout observed during 2023 Kathleen River snorkel surveys.

Photo 5. Schooling Arctic graying observed during 2023 Kathleen River snorkel survey.

Photo 6. Large schools of round whitefish were commonly observed throughout the Kathleen River system during 2023 snorkel surveys.

Photo 7. Example of rainbow trout with a likely angling induced injury near its eye.