Innavik Hydroelectric Project

Mercury Assessment

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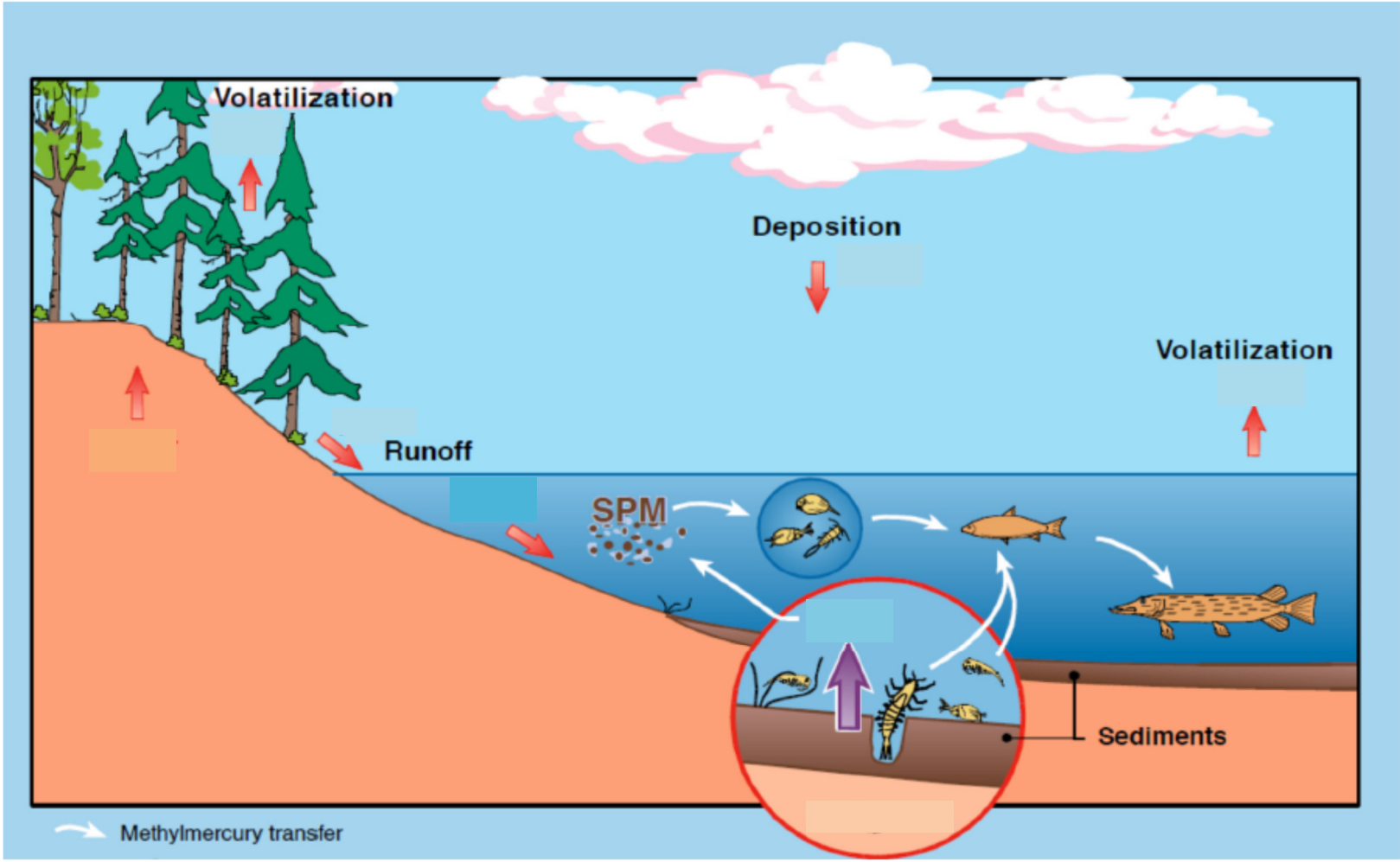
Mercury in natural environment

Mercury (neutral form)

Mercury (adverse form)



Adapted from Schetagne, Therrien and Lalumiere, 2003

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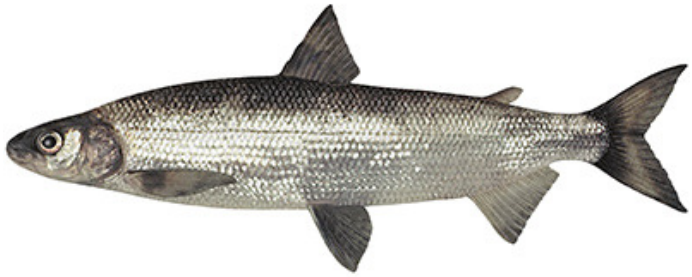
4 of 7 species of fish sampled in the region of Inukjuak in July 2019 were analysed for Mercury.

2 species that do not eat fish (NF) and 2 species that eat fish (F).

Brook Trout (NF)

Lake Whitefish (NF)



Lake Trout (F)

Landlocked Atlantic Salmon (F)

Pictures from MFFP, 2018

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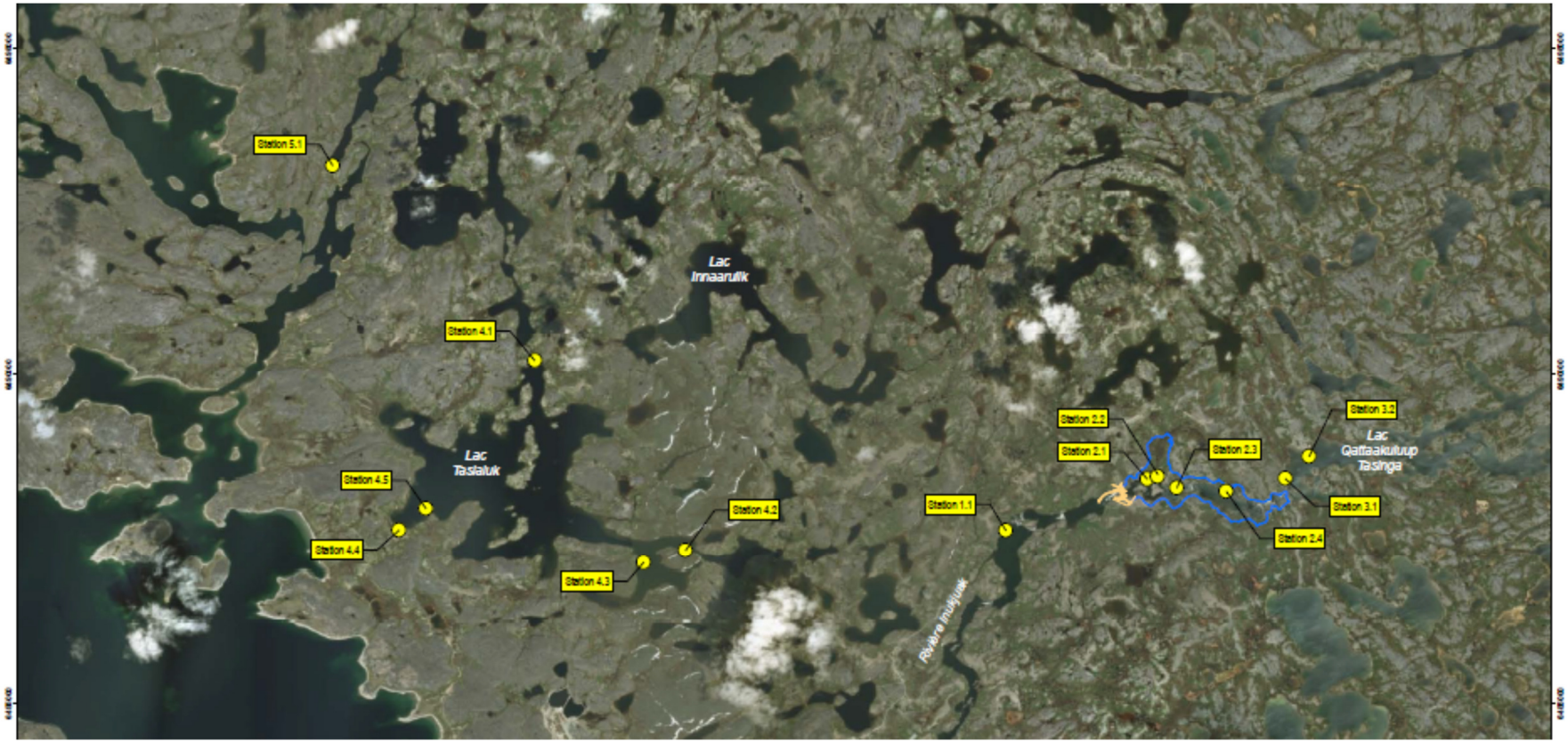
3 Bodies of water sampled : Inukjuak River (including Lake Qattaakuluup Tasinga), Lake Tasialuk, lake North of the village).



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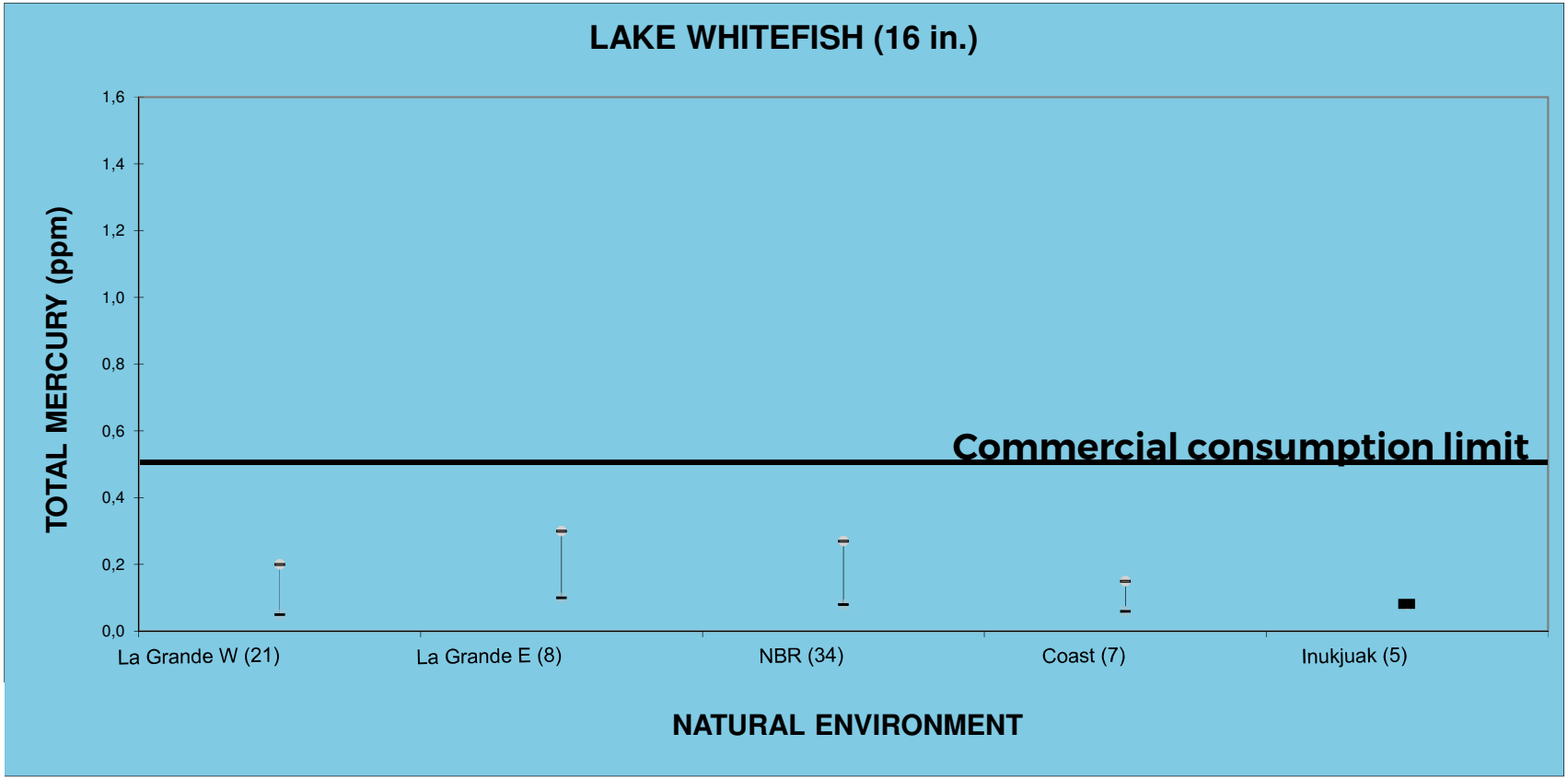
Range of average total mercury concentrations in 16 in. Lake Whitefish of natural lakes and rivers (number in parenthesis) of 5 Boreal/Nordic regions.

Average length in 2019 sampling = 14 in.



From Schetagne *et al*. and Inukjuak 2019 sampling

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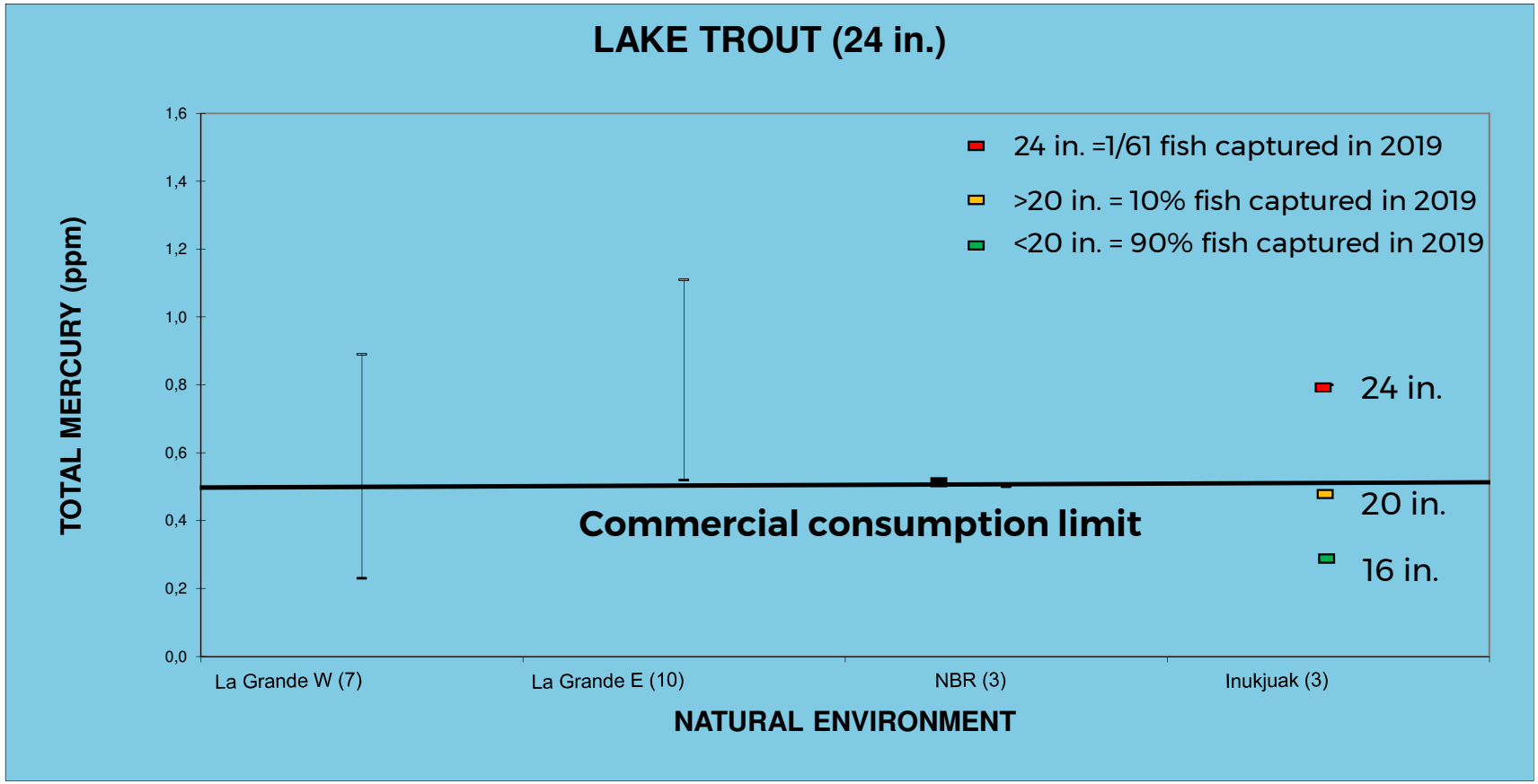
Range of average total mercury concentrations in 24 in. Lake Trout of natural lakes and rivers (number in parenthesis) of 4 Boreal/Nordic regions.

Average length in 2019 sampling = 16 in.



From Schetagne *et al*. 2003; Inukjuak 2019 sampling

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Brook Trout

Average length in 2019 sampling = 13 in.

Average mercury concentration :

- 0.10 ppm at 12 in.
- 0.16 ppm at 16 in.

Landlocked Salmon

Only one capture in 2019 sampling.

Length = 10 in.

Mercury concentration : 0.06 ppm.

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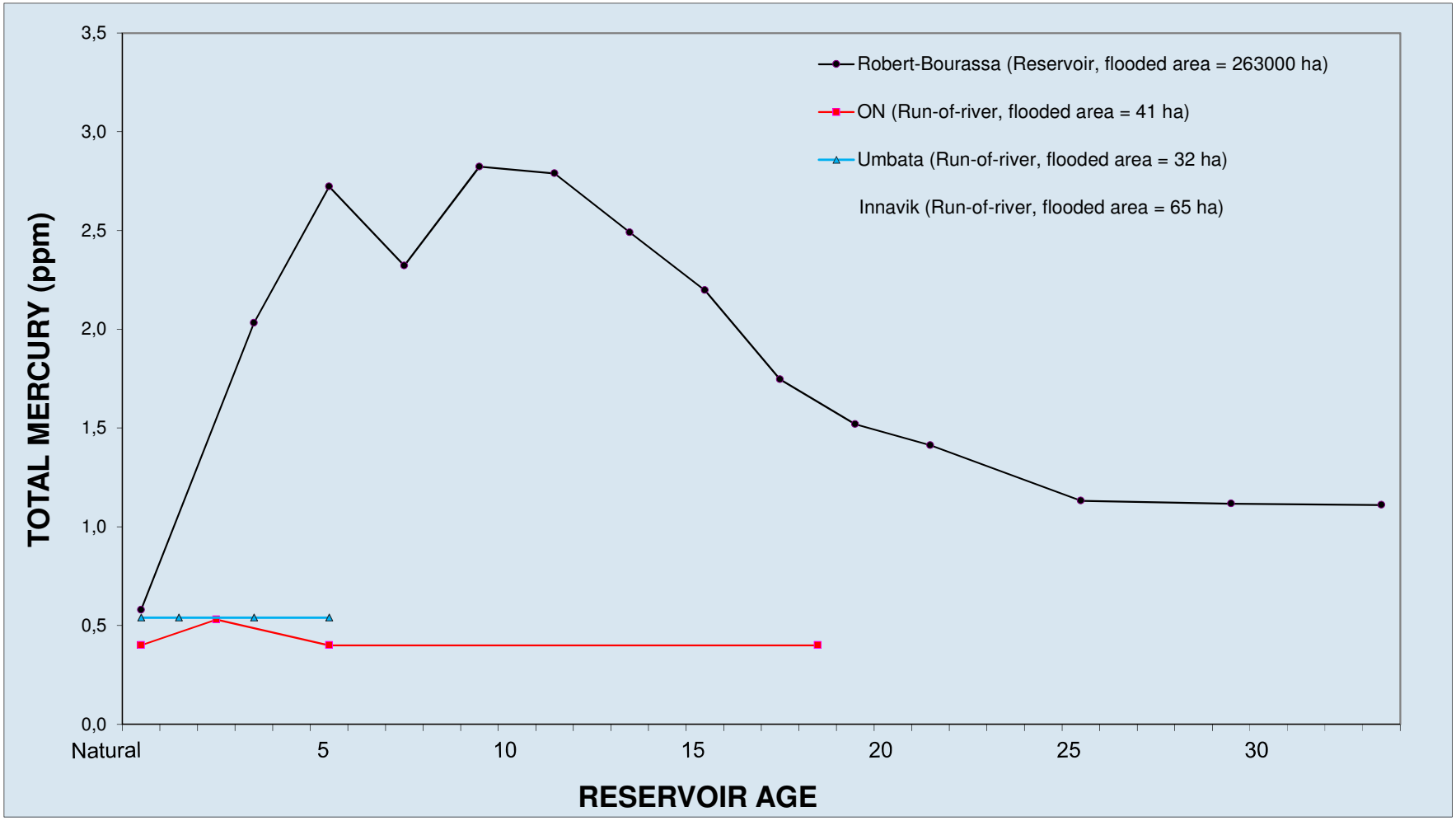
Comparison between reservoir and run of the river hydroelectric project for 16 in. Walleye



From Schetagne *et al*. 2003; Beals, Harris and Therrien 2015

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Mercury in fish monitoring following the construction

Years after the construction: 3, 5, 7, 10 (if needed) and 15 (if needed).

Monitoring years: 2025, 2027, 2029, 2032 (if needed) and 2037 (if needed).

Area sampled:

- Upstream of the generating station (headpond and lake Qattaakuluup Tasinga).
- Downstream of the generating station.
- Reference lake.

Sampling done in the summer.

Target of 30 fish from each area and each of 2 species of fish (Lake Whitefish and Lake Trout):

- total of 180 fish each year of monitoring.