SUMMARY

Author(s) and title (for reference) :

THERRIEN, J. 2005. *Suivi environnemental du réservoir Robertson (1990-2005). Évolution des teneurs en mercure dans la chair des poissons*. Rapport de GENIVAR Groupe conseil inc. à Hydro-Québec, Territoires Nord-Est et Réseaux autonomes, 57 p. et annexes.

English title :

Environmental monitoring of the Robertson reservoir (1990-2005). Evolution of the mercury level in the flesh of fish.

Abstract :

In 2005, the environmental monitoring study for the Robertson reservoir area included an analysis of stomach contents and mercury levels in the flesh for main fish species. Overall, this study represents the sixth year of monitoring and the fifth since impoundment 10 years ago (i.e. 1995).

Fish dominates the diet of smelt in the reservoir (67 %) and in Ivry Lake (100 %), while benthos dominates in Lake Monger (85 %), in brackish waters. Sticklebacks are the only fish species found in their stomachs. The diet of brook trout is composed mainly of benthos in lakes (71 %) and fish in the reservoir (57 %). This discrepancy is mainly explained by the larger average size of trout captured in the reservoir. The main prey species in the reservoir are the sticklebacks, as was the case before impoundment. In 1999, it was smelt. The diet of Artic charr is composed mainly of benthos in the reservoir (72%) and fish in lakes (60-90%). This is explained by the fact that normal artic charr are now absent from the reservoir. Finally, the diet of landlocked salmon is composed mainly of fish in both reservoirs and lakes (82% and 74%, respectively). Smelt was the main prey item until 2003, whereas it became stickleback in 2005.

For the four species monitored in the Robertson reservoir, average mercury levels at standardized length increased by a factor of 2.7 to 4.9 since impoundment. The average mercury levels at standardized length stopped increasing in 2003 for the dwarf artic charr, and in 1999 for the brook trout. For brook trout, the average levels are similar from 1999 to 2005 and the growth seems to have an influence on the small mercury level increase observed between 2003 and 2005. For rainbow smelt, a significant decrease was observed in 2005. The maximum level was reached in 2001, six years after impoundment. For landlocked salmon, the average maximum level was reached four years after impoundment (1999) and decreased significantly thereafter.

Downstream of the reservoir, in the brackish waters of Lake Monger, the average mercury levels of fish for 2005 are lower than those of most other natural freshwater lakes in the region, for both smelt and brook trout. For the landlocked salmon, they are similar.

According to the results of 2005, the number of monthly meals recommended by the fish consumption guide, produced in 2001 for the Gros Mecatina region, is still appropriate for the reservoir. However, it is now too restrictive for the Monger Lake.

Key words : Mercury, fish, Robertson reservoir, environmental monitoring

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