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## **The Proposed Pollution of Two Lakes in Central Newfoundland**

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***Comments on the Environmental Impact Statement for Aur Resources' Duck Pond project by R. John Gibson***

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A copper-zinc-lead mine is being developed in central Newfoundland (Aur Resources' Duck Pond project near Buchans). The major concern is that a lake in the area, Trout Pond, is planned to be eliminated as a viable ecosystem, by using it as the "Tailings Management Area", starting in the summer of 2006, plus an unnamed headwater lake on a tributary to Gill's Pond Brook. The Trout Pond drainage area is 2.2 km<sup>2</sup>, and is part of the Harpoon Brook drainage basin, a major tributary of the Exploits River. Trout Pond is 1.3 km in length, has a maximum width of 400 m, and maximum depth of 2.5 m, and area of 0.5 km<sup>2</sup>. It is a headwater lake, with no inlets. Currently the lake has a healthy population of resident Atlantic salmon and brook trout. Salmon in the lake were sampled of fork length ranging from 140 mm to 410 mm, and brook trout ranging from 120 mm to 300 mm. The outlet stream is productive, and at an electrofishing station in 2000 there was estimated 242 g/100 m<sup>2</sup> of salmon and 149 g/100 m<sup>2</sup> of brook trout. Trout Pond also provides habitat for waterfowl, such as osprey, mergansers and loons, and several species of ducks, and the furbearers, beaver, otter, mink and muskrat.

There are planned dams of 8 m height at both ends of Trout Pond valley, raising the lake water level from the present 257 m to 265-270 m, possibly leaching methyl mercury into the lake. In order to

facilitate placement of the dams Trout Pond is to be pumped down approximately 1 m in depth. Highly toxic materials would be pumped into the lake, killing the present ecosystem. The water in Trout Pond would contain dissolved metals, elevated suspended solids, other contaminants and low pH. There will be a tailings production of 2.15 million dry tonnes. Tailings will be pumped to the lake at 53 t/h of solids when operating. All process wastewater from the concentrator (204 m<sup>3</sup>/h) will be discharged as part of the tailings flow into the tailings pond. Waste water from the underground mine (137 m<sup>3</sup>/h) will be combined with the tailings flow and discharged to the tailings pond. Drainage water from the open pit will be pumped to the tailings pond and discharged directly into it. Waste water or “grey water” mixed with the tailings stream will be discharged into the tailings pond. Also runoff from the stockpile of acid releasing rock will be pumped to the tailings pond (50 m<sup>3</sup>/h), and surplus acid releasing rock will be disposed of in the tailings basin. In addition, the normal volume of precipitation and natural seepage, seen in the present discharge of Trout Brook, would be added to the lake. The average thickness of the tailings deposit in the basin at closure would be 3 to 4 m, with a water cover of 1.5 m. There would be seepage of 0.2 m<sup>3</sup>/h to Trout Pond Brook, and 0.1 m<sup>3</sup>/h to Gills Pond Brook, rising at closure to 0.8 m<sup>3</sup>/h to Trout Pond Brook, and 0.7 m<sup>3</sup>/h to Gills Pond Brook. During operation (the 6.2 year expected operation of the mine) copper and zinc levels were expected to increase due to treated effluent being released into Harpoon Brook. The lethal thresholds for salmon parr have been found to be 48 µg/l for copper and 600 for zinc; the effects of copper and zinc are additive, and it has been shown in laboratory experiments (Sprague et al. 1965) that salmon parr detect and avoid levels much lower (0.02 toxic unit). It is stated in the EIS (p. 203) that “The biophysical effects assessment concluded that the most serious effects during construction would be due to sedimentation and the removal of Trout Pond from the watershed, which could affect water quality and freshwater fish in the Harpoon and Exploits watersheds, and to a lesser degree in the Tally Pond watershed.” At decommissioning the outflow dam of Trout Pond would remain, retaining the toxic materials, and requiring permanent maintenance.

As part of ‘mitigation’, fish will be removed from Trout Pond prior to its use, and transferred to another lake. If the fish are transferred to another water with fish of a different genetic makeup or is at carrying capacity the exercise would be detrimental. If the idea is to turn the lake into a fishless lake to help change regulations it is unlikely that all fish could be caught. If the lake to which it is planned to transfer fish has its own fish community, there is no new fish habitat created. There would be ‘compensation’ for lost habitat by removing a dam on Harpoon Brook and on East Pond and by ‘improving’ spawning habitat in East Pond. Removing

dams which are fish obstructions falls under present legislation, and their demolition should not be used as an excuse for lost habitat. Although an impoundment above a dam would be replaced by fluvial habitat, the previous habitat also was fish habitat, so does not replace lost habitat. If access is improved for East Pond, juvenile fish, which can travel several kilometers upstream, would migrate from downstream, recruitment would be adequate, and improved spawning area would not be required. Is East Pond at carrying capacity? If so spawning habitat may not be limiting.

Incredibly, it is stated in the EIS (p. 268 and Table 6.6) that, “the residual environmental effects of the project on fish and fish habitat are assessed as minor. The proposed project is therefore not likely to have significant adverse environmental effects on fish and fish habitat.” In fact the effects would be major, because a lake ecosystem plus its population of salmon and brook trout, and other fauna, would be eliminated, and the downstream reaches from Trout Pond are likely to be seriously contaminated. Salmon parr can detect well below (2%) lethal levels of copper and zinc, so possibly would not migrate up Harpoon Brook. The Exploits River is a valuable salmon river, and would be negatively affected. It must also be taken into consideration that lakes have positive modifying effects on fish production downstream (Gibson 2002).

Evidently a lake can be rescheduled (Schedule 2, in a 2002 review of the Metal Mining Effluent Regulations) as a tailings impoundment area if it has been polluted historically. This may be reasonable, but to reschedule a pristine natural water body as an industrial waste dump is completely contradictory to the Fisheries Act. Nevertheless, the Department of Fisheries and Oceans (DFO) has accepted that “the project is not likely to cause significant environmental effects”, and has requested to Environment Canada that Trout Pond be added to Schedule 2. This would set a dangerous precedent for any mining company or organization to pollute a waterway if it were cheaper to do so than otherwise dispose of toxic wastes. The mining company in this case should be asked to construct a separate holding area for treatment of tailings, as was required for the Heath Steele mine in New Brunswick forty five years ago in a similar situation, and Louvicourt mine in Quebec is currently required to do.

The Fisheries Act is very clear that deleterious substances not be discharged into fish bearing waters or that fish habitat be destroyed. Weakening the Fisheries Act has the potential danger that economic considerations would influence political decisions to over ride scientific and environmental considerations, with ‘compensation’ as a public relations strategy, ineffective in practice, as we saw in the Star Lake project (Gibson et al. 1999). If DFO allows the Trout Pond ecosystem to be destroyed it would effect a giant step backwards, and in general would weaken public

confidence in the ability of Canadian government departments to enforce the Fisheries Act and conserve our national resources.

#### References

Gibson, R.J. 2002. The effects of fluvial processes and habitat heterogeneity on distribution, growth and densities of juvenile Atlantic salmon (*Salmo salar* L.), with consequences on abundance of the adult fish. *Ecology of Freshwater Fish* 11: 207-222.

Gibson, R.J., J. Hammar, and G. Mitchell. 1999. The Star Lake hydroelectric project – an example of the failure of the Canadian Environmental Assessment Act. p. 147-176. *In*: Ryan, P.M. (ed.) Assessments and impacts of megaprojects. Proceedings of the 38th Annual Meeting of the Canadian Society of Environmental Biologists in collaboration with the Newfoundland and Labrador Environment Network, St. John's, Nfld. Canada, October 1-3, 1998. Canadian Society of Environmental Biologists. Toronto. X + 233 pp.

Sprague, J.B., P.F. Elson, R.L. Saunders 1965. Sublethal copper-zinc pollution in a salmon river – a field and laboratory study. *International Journal of Air and Water Pollution* 9: 531-543.

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