

The Sandy Pond Compensation proposal.

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Vale Inco are building a hydrometallurgical processing plant on the south side of Long Harbour, Placentia Bay. The company proposes to deposit toxic slurry wastes, of 375,000 tonnes per year, in Sandy Pond, a nearby lake. All life would be extinguished in the lake. Two adjacent small lakes would also be affected. This would be cheaper for the company (\$62 million) than building a tailings impoundment (\$490 million). Vale Inco posted over \$13 billion (US) in net profits in 2008. The federal Departments of Fisheries and Oceans and of Environment have given permission for these waters to be destroyed under the auspices of Schedule 2 of the Metal Mining Effluent Regulations, a retrograde amendment made in 2002, allowing mining companies to destroy pristine lakes, under the condition that there be adequate compensation.

Sandy Pond has a surface area of 37.83 ha, and a mean depth of 7.5 m, with a maximum depth of 16.5 m. Fish species in the lake are brook trout, *Salvelinus fontinalis*, rainbow smelt, *Osmerus mordax*, and American eel, *Anguilla rostrata*. Sandy Brook, the outlet stream, would be dewatered, resulting in the additional loss of 14460 m² of fluvial habitat. Two small adjacent lakes, Pond 26 (Moore's Pond), of 4.10 ha, and Pond 27, of 1.62 ha, would be dewatered.

Compensation for the destruction and alteration of fish habitat was calculated as 18.11 ha of lacustrine habitat to be created. This would be done by: (1) creating a pond 2 – 8 m deep, by impounding a nearby valley; and (2) expanding and rehabilitating existing infilled ponds. "Vale Inco NL would relocate/transfer all appropriate species to the newly created habitats" (AMEC 2008).

With (1), two small ponds, P31 and P32, are in the valley to be impounded, and contain small brook trout. The impoundment would provide an additional 15.0 ha. "The present outflow stream from the valley flows intermittently and traverses underground for a portion of its length to Rattling Brook". "...drainage from the small valley is minimal to maintain stream habitat". "...the low-head barrier will have fish passage along the downstream face to allow those fish within the valley to access any available existing stream habitat". As stated in the two previous sentences, stream habitat will be minimal, so fish movements up or downstream would be unlikely.

With (2), "a number of small shallow and bog ponds have been slowly infilling with organics and vegetation. ... These ponds/pools will have shorelines expanded and excess vegetation removed to regain lost water and depth." Therefore a total of 5.0 ha of pond habitat can be expanded/rehabilitated. Since these shallow ponds were filling in naturally, what is to stop them filling in again?

The calculation requiring only 18.11 ha of lacustrine habitat as compensation of the destruction of Sandy Pond is based on the DFO document, Bradbury et al. 2001. The document describes how to assign ratings to habitat features for each fish species. Ratings are: high 1.0; medium 0.67; low 0.33; nil 0.00. For example, for brook trout, depths from 0 to 5 metres have a rating of 1.0, substrate of rubble to gravel has a rating of 1.0, but silt 0.33. Pelagic habitat has a rating of 0.33. An average of the habitat ratings gives the Habitat Suitability Index. This Habitat Suitability Index is then multiplied by the area in question to give Habitat Equivalent Units. The ratings for preferred habitats are derived

from an extensive literature review for fishes in Newfoundland and Labrador (Bradbury et al. 1999).

We believe the compensation proposal is naïve and inadequate for a number of reasons. We accept that the habitat ratings generally are based on good observed data, although somewhat coarse, but they may not be applicable in all situations. For example, brook trout are generally more abundant in littoral regions of lakes, and over coarse substrate. Littoral regions of a lake are the most productive region of the lake and have greater biodiversity than the pelagic region. However, the brook trout of Sandy Pond apparently have evolved an ecotype to use the pelagic region. Local knowledge (e.g. Andrew Murphy) tells us that Sandy Pond is known for its large trout of 3 – 5 lbs, which feed on the dwarf smelt. The trout are lighter coloured than the usual colouration of trout, similar in colouration to sea trout, although resident. This indicates that these trout use the pelagic region of the lake. Smelt are essentially schooling pelagic fishes inhabiting mid-waters of lakes. Therefore, since the pelagic zone is the major habitat of the smelt, and the source of food for the piscivorous trout, the pelagic zone of Sandy Pond should be given a much higher rating than was given in the INCO EIS (AMEC 2007). In this latter report brook trout were given a habitat suitability of 0.11 for the pelagic zone, and the smelt 0.33. Additionally ratings for eel should be higher since eels inhabit successfully all habitat types, from fast water riffles to lake bottoms (Bradbury et al. 1999; Gibson 2007). The area of littoral zone in Sandy Pond is 13.91 ha, and the profundal zone 23.92 ha.

Addition of habitat equivalent units for the three species in an un-numbered table (p.109) after Table 9.32 in AMEC 2007 give 323,090 m² for the littoral regions, and 184,182 m² for the pelagic regions, with a total of 507,262 m² habitat equivalent units. It is not clear how this is boiled down to 18.11 ha of lacustrine habitat requiring compensation.

In 2006 fish samples taken gave: 49 brook trout (80 – 320 mm); 5 eels (690 – 910 mm); and 22 smelt (88 – 126 mm). An attempt was made to make population estimates in September-October 2007. Sixty nine brook trout were marked, with one possible recapture. If this were a recapture, which it may not have been, a population estimate of 303 brook trout was made. Similarly, 161 smelt were marked, with one possible recapture, giving a population estimate of 3,603 smelt. No eels were caught. In fact with no definite recaptures no population estimates can be made. It was suggested that angling pressure had depleted the brook trout population. However, at that time of year the brook trout would be spawning, or had finished spawning, so possibly were in other parts of the lake, or were in deeper water with cooling temperatures. Cooler water temperature would possibly explain the lack of eels in the catch.

Two adjacent ponds to Sandy Pond, Pond 26 (4.10 ha) and Pond 27 (1.62 ha) will be dewatered. Pond 27 contains brook trout. Pond 26 had no fish, a situation commonly found in recently glaciated areas. Because Pond 26 had no fish it is “not considered as fish habitat”. This is despite the fact that conditions are good for stocking of a salmonid for angling, or for lake rearing of salmon smolts for supplementing a salmon run, the success of which has been demonstrated by G. Power and students at Matamek, Quebec (Rimmer and Power 1978), and by DFO (Pepper et al. 1985). The potentials of Pond 26 should not be ignored.

The intention is to “relocate/transfer all appropriate species”. Presumably this means the brook trout, smelt and eels. There are no suggestions as to how these species would interact in the newly created habitat of the smaller ponds. It is likely the brook trout and the smelt have been selected for genotypes to most efficiently use Sandy Pond, and it is unlikely the community composition and large size of trout would persist in the new ponds. American eel has been listed as ‘a species of concern’ by COSWEC. The eel populations of the Sandy Pond watershed would be eliminated, and would be unlikely to persist in the new ponds, since access would be limited. In the newly created acidic waters mercury would be leached for several years, and with microbial interactions methyl mercury would move up the food chain, making the fish unhealthy to eat for a number of years.

The loss of Sandy Pond would result in major losses of habitat and biological diversity, and degradation of recreational opportunities. The proposed compensation is inadequate. In fact we believe the exercise is a public relations strategy, similar to the “compensation” for the recent losses of Star Lake and Trout Pond.

In general, we deplore the ability of corporation lobbying, for their economic advantage, to influence the mandates of federal Departments. The Department of Fisheries and Oceans should ensure conservation and enhancement of our fisheries resources for the benefit of the citizens of Canada, and resist attempts to sully their mandate.

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