



MOUNT WASHINGTON MINE-SITE—'We fail to realize that the natural world is not a collection of objects to be exploited but a community of subjects to be communed with. To enter into this communion experience means that we have to change that we have to undergo a transformation of consciousness.'

There is a ground swell occurring, a renewed interest in the Tsolum River Watershed. It is coming not so much from politicians, or from organized environmental groups, but from the people themselves who live and work in the Watershed. And this is how it should be. For unless a movement springs from a grassroots level, it can very easily get bogged down in bureaucratic wrangling.

In the 1950's, the Tsolum boasted great runs of salmonids: runs of Pink Salmon in excess of 150,000; Coho runs in the thirty thousands; Chums and cutthroat in the lower regions of the river; and Steelhead Trout in the 17-23 pound range. The river was rich in small invertebrate life, mostly free from silt, and ran through a splendid forest of fir, hemlock and cedar.

The decline of this fabulous river—as with many of our Island rivers—began in the mid-fifties with the clear-cut logging that occurred along almost its entire length and breadth. The logging eventually brought flooding to the river, movement of gravel, silting and smothering of eggs and invertebrate life, and finally with extremely low flows in the late summer months the consequent depletion of oxygen and increased temperatures.

Coupled with the disaster of clear-cut logging, was the lowering of the water levels due to extraction by irrigation and household use. As well, toxic farm fertilizers have left their impact on the river. When the air base was constructed at Comox, vast quantities of spawning gravel were removed directly from the stream bed to construct the concrete runways. The river fast became a resource for every purpose other than that which nature originally intended.

And then to cap it all, Mount Washington Copper moved into the upper watershed, just to the east of Mount Washington Ski area and along side of McKay Lake, and in 1964 commenced its open pit mining of copper and precious metals. Exceedingly short-lived, the company went into receivership in 1966, leaving in its trail the un-reclaimed pits where pyrite ores lay exposed to water and oxygen. This ore, with a high content of sulphur, quickly formed sulphuric acid by coming in contact with the oxygen and water. The acid released the copper (with the assistance of certain bacteria which thrive on this acid habitat). From the exposed ore (overburden) copper leachate formed and moved into the watershed via Pyrrhotite Creek. McKay and Murex Creeks until finally it reached the Tsolum River, and eventually the Puntledge where together they form the Courtenay River, and so on into the great Courtenay Estuary.

Copper is the dreaded enemy of young salmonids (coho fry and smolts, along with pin and chum, steelhead and cutthroat fry), and it is a scientific fact that the amount of copper that finds its way yearly into the Tsolum watershed kills young salmon and deters adult salmon escaping back to the river to spawn.

For ten years the government(s) has attempted a cure of this acid mine drainage (AMD), costing the taxpayers of the province 1.5 million dollars to date. The cure has been elusive. Today, there is as much copper in the river as there was ten years ago. When the government began its remedial action in 1988, it followed the number one option recommended by SRK (Steffen Robertson & Kirsten, a Vancouver firm)

and gathered all of the overburden into one great pile (referred to as the East part of the North Dump), mixed it with lime and then covered it with one meter of till (a glacial deposit consisting of gravel and clay). It was a beautiful piece of work and formed a giant raincoat over the ore pile.

Although the experiment has attracted worldwide attention, it has not worked. Overlooked at the time was the effect ground water had in producing leachate as it moves through the fractured pit floor. The hope was that the acid mine drainage could be cured at its source. SRK had several other options, which were not looked at seriously at the time.

One of these options was "Treatment". That is how most mine operations deal with their leachate. For example, Westmin. They simply treat

the leachate with lime which precipitates the copper. They deposit the sludge formed from this operation down an abandoned mine shaft. So there is no problem. But the remoteness of Mount Washington and the winter conditions make the construction and maintenance of a treatment plant impractical and extremely expensive. And besides, there are no vacant mine shafts.

But it appears now that a treatment plant will be the ultimate solution to the Mount Washington problem. Engineers talk of locating the treatment plant lower down the mountain, say in the vicinity of the dry-land sort near the Duncan Main, not far from Wolfe Lake. The leachate would have to be piped down the mountain to this site. We are looking at a cost of approximately \$6 million. That may seem like a lot, but SRK estimated that at present the community is losing approximately \$2 million a year from the Tsolum River resource (fish plus jobs plus recreational value). So far, \$60 million has gone down the drain.

To prepare for the final solution to this great river, much work needs to be done during the interim. And there are many members of the community who are willing to make the preparation and study that is needed, and indeed are already doing so. Although by far the greatest quantity of copper enters the Tsolum via Pyrrhotite Creek flowing directly from the old mine site. There is indication that some copper enters the system via McKay and Murex Creeks.

These streams have to be carefully monitored so that there will be no mistake as to where all of the copper is coming from. In addition, the Tsolum itself must be carefully studied : continued copper monitoring is necessary ; the monitoring of stream flow , water depth , temperature and dissolved oxygen during the critical low flow period from May to October must be intensified; the comparison of actual water extraction with water licences must be studied ; siltation monitoring , salmon enumeration , et cetera , must be continued.