

# Many contributed to Tsolum woes

*Editor's Note: This is the first in a two-part article on the Tsolum River Watershed, written by Father Charles Brandt, who chairs the Tsolum River Enhancement Committee of the Steelhead Society.*

by Father Charles Brandt

There is a groundswell of 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 '50s, 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- to 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 clearcut 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 clearcut 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 airbase was constructed at Comox, vast quantities of spawning gravel was 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, Mt. Washington Copper moved into the upper watershed, just to the east of Mt. Washington ski area, and along side of McKay Lake, and in 1964 commenced its open pit mining of copper and precious metals.



Even covered with till, the abandoned Mt. Washington minesite pollutes the river

from 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 pink 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 10 years, governments have attempted a cure of this acid mine drainage (AMD), costing the taxpayers of the province \$1-1/2 million to date. The cure has been illusive. Today, there is as much copper in the river as there was 10 years ago.

When the government began its remedial action in 1988, it followed the number one option recommended by SRK (Steffen Robertson and 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 groundwater had in producing leachate as it moves through the fractured pit floor.

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. Westmin simply treats the leachate with lime, which precipitates the copper. They deposit the sludge formed from this operation down an abandoned mineshaft. So there is no problem.

But the remoteness of Mt. Washington, and the winter conditions, make the construction and maintenance of a treatment plant impractical and extremely expensive. And besides, there are no vacant mineshafts.

Exceedingly short-lived, the company went into receivership in 1966, leaving in its trail the unreclaimed 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