



Father Brandt contemplates the Tsolum River - its glorious past, its death as a fish stream, and hopes for the future

# Reclaiming a River

By Father Charles A.E. Brandt

**T**he saga of the Tsolum River continues to unfold. 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 50'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 clearcut logging that occurred along almost its entire length and breadth. The logging eventual-

and then covered it with one metre 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. And although the experiment has attracted worldwide attention, it has not worked.

In the meanwhile, other options are being explored and studies carried out. The realization and fulfillment of any option, of course, will be the necessary funding from the provincial and federal ministries, and funding from the industry and the community.

Besides the SRK report there are the AGRA and the Golder reports suggesting abatement and treatment options, such as the use of wetlands to absorb copper, water storage feasibility to augment sum-

Tsolum River Watershed Protection Society; and the Black Creek Ratepayers Association - all are making contributions and have a deep concern for this river.

**F**inally, the Watershed Coordinating Assembly is now functioning well in the Comox Valley. It has been handed the task of bringing about a solution to the degeneration of local watersheds.

The Tsolum watershed is high on their list of priorities.

The Assembly is not a new authority, but rather it calls for the cooperation of all parties whose goals are interdependent. By working together to solve a problem each party will gain more than it could by traditional bargaining techniques where a gain for one party is seen as a loss for the other.

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 air base was constructed at Comox, vast quantities of spawning gravel were removed directly from the streambed to construct the concrete runways. The river fast became a resource for every purpose other than that which nature originally intended.

**A**nd then to cap it all, Mt. Washington Copper moved into the upper watershed, just to the east of Mt. Washington ski area and alongside 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 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 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 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.

**F**or 10 years the government has attempted a cure of this acid mine drainage (AMD), costing the taxpayers of the province \$1.5 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 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



Drainage from short-lived copper mine was final blow to the Tsolum River

mer flows; a hydrogeologic study of the mine site to identify sources of copper and sources and amounts of water; grouting feasibility; tiered wetlands in the mine pit.

Testing is needed to determine the effectiveness of the existing till cover. A treatment plan in conjunction with wetland treatment may be the solution to the Mt. Washington problem.

A treatment plant would buy time for 10 years, allow time for the research and studies necessary for a final solution, and allow the river to be kick-started through salmonid and habitat enhancement in the lower watershed.

**T**o 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.

The Tsolum itself must be carefully studied as it is now being done through the Tsolum River Task Force with monies from DFO; continued copper monitoring is necessary; the monitoring of stream flows, 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; downstream enumeration of smolts; means of increasing rivers flows, etc. It is necessary to continue these studies.

The Tsolum Ecology Centre leased from the DFO is being used as a base for this ongoing monitoring and preparation for the mine reclamation.

Project Watershed is already contributing greatly towards a solution to the Mt. Washington problem with their accent on watershed stewardship.

As well, the Tsolum River Task Force, the Comox Valley Chapter of the Steelhead Society through its Tsolum River Enhancement Committee; the

**W**e are on the eve of a new millennium. We are at the terminal phase of the cenozoic era, a geological period of 65 million years. The new era will be the ecozoic era, the age of the earth. We have brought about vast changes on a geological and biological order. The four great components of the earth - the landsphere, the watersphere, the airsphere and the lifesphere - are being decisively and permanently altered in their composition and their functioning by the more recent sphere, the mind-sphere, you and me: altered, that is, in a deleterious, almost irreversible manner.

The ultimate custody of the earth belongs to the earth. The earth will solve its problems, and possibly our own, if we will let the earth function in its own ways.

We need only listen to what the earth is telling us. We are an autistic generation. We don't hear the voices.

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 in order to move out of our deep cultural pathology that has allowed this degradation to take place.

So with the Tsolum River. If only we had listened to the earth. We thought we knew best what was good for the river and for ourselves. But it is not too late.

The river will never again be what it was intended to be.

But with our new insights, and by working together as a community and by our willingness to change, we can allow the river to once again flow clean and sweet to the estuary and become the rightful home to those creatures whose home it rightfully is.

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