

## E C O L O G Y

## 'If only we had listened to the earth'

BY FR.CHARLES BRANDT

VANCOUVER ISLAND—

When it comes to listening to what the earth is telling us, we are an autistic generation. The saga of the Tsolum River is a good example of our failure to listen to the earth.

In the 1950s, the Tsolum boasted great runs of salmonids: runs of pink salmon in excess of 150,000; coho runs in the 30,000s; chums and cutthroat in the lower regions of the river; and steelhead trout in the 17-23 pound range. The river, which was rich in small invertebrate life and mostly free from silt, ran through a splendid forest of fir, hemlock and cedar.

The decline of this fabulous river began in the mid-'50s with the clear-cut logging that occurred along almost its entire length and breadth. The logging eventually brought flooding, movement of gravel, silting and smothering of eggs and invertebrate life and, finally, with the extremely low flows in the late summer months, the depletion of oxygen and increased temperatures.

Coupled with the disaster of clear-cut logging was the



*Pictured in this 1995 photo is the Mt. Washington mine site near Courtenay, B.C.*

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 of British Columbia has attempted a cure of this acid

mine site to identify sources of copper and sources and amounts of water; and the use of tiered wetlands in the mine pit.

The implementation of any option, of course, will require the necessary funding from the provincial and federal governments and funding from the

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 licenses

bringing about a solution to the degeneration of local watersheds. The Tsolum watershed is high on its list of priorities.

We 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 of 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—altered in a destructive, almost irreversible manner—by the more recent sphere, the mindsphere. 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 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 commun-

lowering of the water levels due to extraction for irrigation and household use. As well, toxic farm fertilizers left their impact on the river.

When an air base was constructed at Comox, vast quantities of spawning gravel were removed directly from the stream bed to construct the concrete runways.

To cap it all, Mt. Washington Copper moved into the upper watershed, just to the east of Mt. Washington ski area and alongside McKay Lake. In 1964 it commenced open-pit mining of copper and precious metals.

Exceedingly short-lived, the company went into receiver ship 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 sulfur, formed sulfuric acid which released the copper (with the assistance of certain bacteria that thrive in this acid habitat).

From the exposed ore, copper leachate formed and moved into the watershed via Pyrrhotite Creek, McKay Lake and Murex Creek. From there it reached the Tsolum River and eventually the Puntledge River where they join to 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. It is a scientific fact that the amount of copper

mine drainage, costing the taxpayers of the province \$1.5 million so far.

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 of the Vancouver firm Steffen Robertson & Kirsten (SRK). It gathered all of the overburden into one great pile, mixed it with lime and 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.

Overlooked at the time was the effect the ground water had in producing leachate as it moved through the fractured pit floor. The hope was that the acidic mine drainage could be cured at its source.

SRK had several other options which were not looked at seriously at the time.

In the meanwhile, other options are being explored and studies carried out. For instance, there are the AGRA and the Golder reports suggesting abatement and treatment options, such as the use of wetlands to absorb copper; the feasibility of water storage to augment summer flows; doing a hydrogeologic study of the

industry and the community.

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

Engineers talk of locating a lite treatment plant lower down the mountain. The leachate would have to be piped down the mountain to the site to be treated, at a cost of several million dollars. This may seem like a lot, but SRK estimated that at present the community is losing approximately two million dollars a year from the Tsolum river resource (fish plus jobs plus recreational value). So far, \$60 million has gone down the drain.

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.

Fortunately there is now a ground swell of renewed interest in the Tsolum river watershed. It is coming not so much from politicians or from organized environmental groups as from the people themselves who live and work in the watershed.

The Tsolum itself must be carefully studied as is now being done through the Tsolum River Task Force.

must be studied. Also needed is siltation monitoring, the downstream enumeration of smolts and studying ways to increase river flows.

The Tsolum Ecology Centre is being used as a base for this ongoing monitoring and preparation for the mine reclamation. Project Water shed, with its accent on water shed stewardship, is already contributing greatly towards a solution to the Mt. Washington problem.

As well, the Tsolum River Task Force, the Comox Valley Chapter of the Steelhead Society through its Tsolum River Enhancement Committee, and the Tsolum River Watershed Protection Society—all are making contributions and have a deep concern for this river.

Finally the Watershed Assembly is now functioning well in the Comox Valley. It has been handed the task of

ion 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 once again to flow clean and sweet to the estuary and again become home to those creatures whose home it rightfully is.

Father Charles A.E. Brandt is a member of the Tsolum River Task Force. He lives as a hermit at Black Creek in the Diocese of Victoria.