



## Creating Partnerships to Save the Tsolum River from Copper Leachate

by Jack Minard

On April 28th, 2009 as I sat in a Tsolum River Partnership meeting at the Ministry of Environment offices in Nanaimo on Vancouver Island, I let my mind wander back to the beginnings of how we got here.

In 1967, a copper mine on Mt. Washington on Vancouver Island, BC went bankrupt after only four years of operation. The site was abandoned, leaving an open scar on the hillside above the Comox Valley and the Tsolum River.

Through the 1980s, fish stocks declined in the river. The abandoned mine site was generating toxic copper leachate. In 1988, a partial cap was placed over a consolidated pile of volatile rock, at a cost of \$1.5 million. Still the river declined in health. The partial cap was declared a failure, and the Tsolum slipped into oblivion. By 1993, the river was barely able to support any fish or other aquatic life. After several years of half-hearted talk and studies, our community rallied around emerging organizations such as Project Watershed and the Watershed Assembly. Community awareness was raised about watershed issues, and in 1997 the Tsolum River Task Force (TRTF) was formed.



During those bleak years for the Tsolum, two champions emerged. Rob McCandless of Environment Canada (EC) and John Deniseger of BC Ministry of Environment were insider champions, instrumental in assisting the community to move forward, even after the presumed failure of the first cover.

In the spring of 1997, funding was received from the former Habitat Restoration and Salmon Enhancement Fund for the Tsolum River Restoration Project to be administered by the Comox Valley Project Watershed Society, with the supervision of the project under the control of the Steering Committee of the TRTF. This led to the formation of the Tsolum River Restoration Society (TRRS) in 1998.

In 1999, the Outdoor Recreation Council declared the Tsolum River the most threatened river in BC.

The year 2000 saw the publication of a report by SRK Consultants on remediation options for the Mt. Washington mine. Everyone in the partnership, from Environment Canada, the landowner TimberWest Forest Corp., engineers Moir Haug and Associates, CPR, and the BC Ministry of Environment to the TRRS agreed that to really do the job and to achieve full remediation, the site itself would require an engineered cover to provide source control. The price tag, however, was insurmountable at an estimated 6-to-10 million dollars. With \$1.5 million already gone to waste everyone was a little gun shy.

In 2000, Department of Fisheries and Oceans (DFO) declared the Tsolum River dead.

The release of the SRK report coincided with the demise of the Task Force although John Deniseger and Rob McCandless continued to champion the project from inside their ministries. Father Charles Brandt, Dave Ferguson, Jackie Sandiford and Wayne White of the TRRS, along with a growing membership, continued to shine the light of public scrutiny on the situation but the project had stalled.

In January of 2001, the TRRS resolved that the Society would not support any further studies: all the data led to "source control," a complete cover of the old mine site. Low flows, habitat restoration, stock enhancement, community awareness, and protection of the watershed would be our focus, while lobbying for source control proceeded.

### Ministry of Environment Dedication

One of the most significant factors in this story was the dedication of the Water Quality Branch of the BC Ministry of Environment. Two data loggers were purchased and began to relentlessly capture water quality data. Surprisingly, results showed a 50-to-60% improvement through 1999.

The 1988 partial cover had begun to work. It took 10 years for the interstitial spaces in the gravel cover to plug up with detritus and the volatile rock under it to give up most of the copper. With dramatically improved water quality suddenly on the radar, interest was again sparked.

However, 2002 showed a slide backwards and EC asked the current landowner, TimberWest, to look at the situation and see what they could come up with. The late and much beloved Dr. Bob Willingdon, TimberWest's hydrologist, set out to help. His work led him to a small wetland that had become isolated from its creek and that could take effluent from the mine site to provide a passive wetland treatment.

In order to complete the wetland project a new partnership was formed. The members included:

- BC Ministry of Environment who monitored water quality and determined goals,
- Environment Canada which funded a comprehensive monitoring program,
- Fisheries and Oceans Canada who participated with sample collection and in situ fish bioassays,
- the Pacific Salmon Foundation which agreed to Chair and administer funding,
- TimberWest Forest Corp. which provided access, machinery, and materials to monitor the effect of the wetland, and
- the Tsolum River Restoration Society which offered volunteers and contractors to assist with sampling and was the community's voice.

In November 2003, the wetland project was completed and the results were immediate and profound with a further 35% improvement.

With water quality improving, the Tsolum River began to get some new attention. Members of the TRRS, not content with the progress however, proposed a "homemade" remediation plan. Our simple plan set out to cover the mine with organic material collected from all over the Comox Valley: utilize local firms, compost organic material, add biosolids from the Mt. Washington Resort and soils from construction and roadworks sites, mix it all together and spread it on the site. We called a meeting with MP John Duncan who took the idea and began to generate discussion amongst the agencies and champions involved.

The plan circulated while the wetland project continued to improve water quality - but that would only last for 5 to 7 years. What then? Nobody wanted to face the possibility of the wetland failing after seven years of improvement. Insects were again flourishing, in-situ bioassays saw all fish survive, and we stood the chance of losing it all again.

With the fear of a momentous backslide, a new BC Liberal Minister of Environment, Barry Penner, granted \$50,000 to create a plan to solve the problem. By 2008, a plan was developed to cover the site once and for all, at an estimated cost of \$4.175 million dollars.

The partnership expanded to include the Mining Association of BC (MABC), the Ministry of Energy Mines and Petroleum Resources (MEMPR), Natural Resources Canada and NVI Mining Ltd.

These new partners gave us technical depth, and that technical depth gave weight to our partnership with the government. The inclusion of MEMPR was key as they were a partner who could hold the money and provide comfort to the government that the money would be well managed. The phased process and peer reviewed final design gave us the credibility we needed to demonstrate we could produce a first class product.

Our insider champions provided internal lobbying for our proposal. MABC expended some of its political capital lobbying on our behalf. One of our Board member's encounters with the Premier and other Cabinet members helped keep the project in front of key decision makers. Our MLA chimed in for us whenever he found the opportunity. The "greening" of government and industry in today's climate of environmentalism also helped in this last effort to get something done.

On April 15, 2008 three provincial Ministers - Barry Penner, Kevin Krueger and Stan Hagen - arrived at the Tsolum River to announce that the province was granting \$4.5 million dollars to fully fund the cover design.

**My mind came back to the room and why we got together that sunny day in Nanaimo.** We were there to set a schedule for commencing work on the engineered cover. The players around the table represented two provincial ministries, two federal departments, the mining industry association, a provincial and a local NGO, and the landowner, TimberWest. Representatives from the contractor, Quantum Murray, led us through the 2009/2010 workplan.

The snowpack this year is light and work will be able to start at the beginning of June. Site leveling and under drain construction could be complete by mid-July with the bitumen seal going on during the last two weeks of July. A protective coat of till will then be placed over the seal before winter. The old mine will be covered in 2009!

All it took was patience, perseverance and the passions of a great many people working together in a collaborative partnership.

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Environmental news from the Georgia Strait, British Columbia, and the world! The Watershed Sentinel is a bi-monthly magazine from British Columbia on the West Coast of Canada. It offers a mix of bioregional and global perspectives on environmental, health, and sustainability topics.

The Watershed Sentinel watches over some of the most stunning landscapes in the world: tall trees, taller mountains, and the expansive ocean and forest. The magazine focuses on how we humans affect these treasures—from our logging and fishing practices to how we treat our air and water—and on the solutions, both large and small, that will eventually create a sustainable society.

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