

## Cheakamus River Restoration

On August 5, 2005 the derailment of a Canadian National Railway (CN) train resulted in spilling sodium hydroxide into the Cheakamus River. The spill killed approximately 90 percent of the fish present in the river. Juvenile Steelhead, rainbow trout and coho were hardest hit followed by adult chinook and pink salmon. CN indicated that it was fully committed to restoring the Cheakamus River to its pre-spill condition.

The Cheakamus Ecosystem Restoration Technical Committee (CERTC) was established in August 2005 to undertake an assessment of the impact the spill had on the Cheakamus ecosystem and to develop and implement restoration strategies. The CERTC is comprised of biologist representing CN, District of Squamish, Fisheries and Oceans Canada, BC Ministry of Environment and the Squamish First Nation.

A public open house was held on February 8, 2006. The objective of the open house was to provide information on and receive feedback on the work undertaken to date, on impact assessment, monitoring programs and recovery plans. Following the open house the Cheakamus Ecosystem Restoration Stakeholder Team (CERST) was established. CERST is a public advisory group consisting of representatives from interested non government organizations and individuals with local knowledge and experience with the Cheakamus River. CERST meets in Squamish every two months and provides input into the development and implementation of monitoring and restoration programs. BCFFF representatives have attended most but not all of CERST meetings.

The CERTC has established a website <http://www.certc.ca/index.shtml> where one can view the minutes of both the CERTC and CERST meetings along with reports on impact assessment, the recovery plan and updates, recovery programs (fish culture program, Cheakamus Ecosystem Recovery Fund, Cheekye Bridge Fish Passage Modification, Swift Creek and Km 8, Km 6.5, Channel re-wetting, Wilson Slough Reunion, Large Wood Debris Demonstration Project and Dave Marshall Salmon Reserve Habitat Enhancement), monitoring programs ( Juvenile Salmonid Out Migration, Off-Channel Mark Recapture Program, Non-Anadromous Reach Fish Sampling, Steelhead/Char Adult Enumeration, Char Adult Radio Telemetry Program, Resident Fish Abundance Monitoring Program, Steelhead Acoustic Tracking of Hatchery Smolts [ Residualization and Ocean Survival], Chinook Coded Wire Tagging).

### **Steelhead**

Steelhead were severely impacted by the spill, up to 90% of mainstream, fry, parr and smolts from the 2003 to 2005 spawners were killed. The impact of such a loss was projected to be reflected in the adult return in years 2009 and 2010. Stakeholder groups pushed for implementation of a steelhead hatchery program to aid in recovery. The Cheakamus is designated as a wild river under the provincial steelhead policy and therefore the Ministry of Environment (MOE) did not wish to consider a steelhead hatchery program as part of the recovery plan. Scientists were not in agreement regarding the wisdom of a hatchery program and the controversy was on. The MOE commissioned

and independent report and the conclusion was that a limited hatchery program would not likely jeopardize the generic integrity of the Cheakamus steelhead population.

Briefly the plan was to obtain sufficient brood stock from years 2006 and 2007 to raise 20,000 smolts from each year. The fry would be raised to smolts in one year so smolts would be released in 2007 (return in 2009) and 2008 (return in 2010). The eggs would be divided into two lots half raised at the Tenderfoot Creek Hatchery (TCH) while the other half to be raised at the Fraser Valley Trout Hatchery (FVTH). All fish would be adipose clipped and smolts from FVTH would be implanted with a coded wire tag. Fifty smolts from each hatchery would be fitted with acoustic tags. As reported in the April 2007 Cheakamus River Steelhead Fish Culture Program Update the acoustic tags meant “The migration of these fish can then be followed from the point of release until they leave Johnstone Strait using the Pacific Ocean Shelf tracking (POST) receivers in the watershed and ocean seabed <http://www.postcoml.org/> Residualization rates, migration routes and loss rates at different areas can then be determined relative to wild fish which were similarly tagged in 2004 and 2005. Full details on the steelhead hatchery program are available at [http://www.certc.ca/recovery\\_programs.shtml](http://www.certc.ca/recovery_programs.shtml) . The final report on the 2007 acoustic tracking of steelhead smolts can be viewed at [http://www.certc.ca/pdf/Steelhead\\_POST\\_tagging\\_2007-final\\_report.pdf](http://www.certc.ca/pdf/Steelhead_POST_tagging_2007-final_report.pdf) .

The steelhead hatchery program was concluded with the release of the smolts from the 2007 brood year. Catch and release regulations for hatchery steelhead have been implemented on the Cheakamus River and the Squamish downstream of the confluence with the Cheakamus from Dec. 1 2008 to July 30 2011.

Undoubtedly the success of the limited hatchery will be judged by the return of marked fish. Certainly implementation of the program and the data collected from the various monitoring programs will provide considerable fuel to the ongoing debate on steelhead hatcheries.

As previously stated the first return from the smolt release of 2007 would be this year (2009). Early indications are that the steelhead return has been well below the average of recent years. We will post an update on the 2009 returns when the information becomes available.