

**SALMON IN THE CLASSROOM INCUBATOR CHILLERS  
Final Report to the Yukon River Panel**

**Project Number:** CRE-66N-08

**Submitted by: Streamkeepers North Society**

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## **ABSTRACT**

Streamkeepers North Society purchased five new aquarium chillers for use in Yukon Schools. These were used to replace worn out chillers used for Stream to Sea classroom salmon incubation projects. They were distributed by DFO to schools in three Yukon communities.

## **INTRODUCTION**

Fisheries and Oceans Canada (DFO) provides salmon eggs and technical support to classroom incubation projects as part of the education program "Stream to Sea", which is available to schools throughout the Yukon. (Most of the eggs are incubated to the "eyed stage" at the McIntyre Creek Salmon Incubation facility, which is operated by the Northern Research Institute.) Aquarium chillers are an important part of the equipment required for successful operation of the incubation projects.

During the classroom incubation, the incubation temperature is monitored daily and the chillers are adjusted to maintain suitable water temperatures for the salmon survival (well below room temperature). Chillers also maintain water at temperatures low enough to ensure that feeding of salmon fry is not necessary during spring break. Reliable chillers are therefore necessary to ensure the salmon survival, and to ensure the appeal of the classroom incubation projects to teachers. Once the fry have emerged, the chiller temperature is adjusted to promote feeding, and students look after feeding the fry and cleaning the tank.

Throughout this process, the students learn about the growth and development of their local salmon species in a hands-on way. Through the incubation period, the students are involved in observing salmon development, and in monitoring and maintaining their artificial habitat. Caring for the salmon helps to foster understanding, respect and stewardship of the salmon and their habitat.

Many chillers used in Yukon Schools have been broken or simply worn out since classroom incubation equipment was first introduced to the schools twenty years ago. Funding was requested to replace the broken chillers with new, quiet, reliable chillers, rather than invest in further expensive repairs to outdated equipment.

### **Project Objectives:**

The objective of this project was to replace worn out chillers with safe, reliable and environmentally acceptable chillers, thereby enabling the effective operation of classroom salmon incubators in Yukon classrooms. Supporting the classroom incubation component of the Stream to Sea program helped to meet the highest

ranking objective in the "Stewardship" envelope of "involving and educating users and non-users to increase their desire to maintain and protect salmon stocks and habitat". School children raising salmon in their classrooms fit into the category of priority projects listed in the 2008 specific R&E priorities include, under "Community Education and Stewardship", "youth-oriented education and hands-on projects (youth up to 18 years)". Goal 3.4 of the JTC Plan is to "Promote public values of the salmon resource". A subsidiary goal is to "educate the public on the values of salmon and salmon habitat" through strategies that include the promotion of school programs for all grade levels. Classroom incubation is an engaging activity that helps students to learn about salmon and their habitat requirements throughout their life cycle. Successful operation of a classroom incubation project requires reliable incubator chillers. This project helped to ensure that these were available in Yukon schools in the 2008-2009 school year.

### **Project Summary:**

Streamkeepers North Society ordered five chillers, designed specifically for classroom salmon incubation purposes, from Aquachill Industries Ltd. (Vernon, B.C.) in June, 2008. These new chillers were used to replace broken chillers (some over 20 years old) which were in need of expensive repairs, and were disruptively noisy even when functioning. The new chillers are equipped with digital thermostats, allowing aquariums to be maintained within 1 degree of the set temperature. This enables classes to maintain incubator temperature at those tolerable for salmon eggs, and to make the development of the salmon in their classes somewhat mimic the timing of the stages of development of wild salmon. Compressor fans are covered with a metal mesh to ensure student safety. New chillers are quieter and make the Stream to Sea incubators much more appealing suitable for use in classrooms

The five chillers\* arrived in Whitehorse in late September 2008. One chiller is being used in Beaver Creek, three are in Whitehorse, and one will be used for chum salmon incubation in Carcross in early January. Chillers were distributed and installed by the DFO Education Coordinator and Yukon school volunteers. Teachers and students are currently monitoring the chiller operations.

\* List of serial numbers of chillers:

S/N 0809956  
S/N 0809957  
S/N 0809958  
S/N 0809960  
S/N 0809961



**New Chiller**

