

**Helicopter Fry Release**  
**From the Whitehorse Rapids Fish Hatchery**  
Restoration and Enhancement Fund Project  
CRE-61N-07

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**Abstract**

A total of 166,154 Yukon River origin chinook salmon fry were reared at the Whitehorse Rapids Fish Hatchery in Whitehorse, Yukon during the 2006/2007 season. Of these, 89,361 were transported by helicopter and released into two remote locations on June 8, 2007. The two remote release locations included sites on Michie Creek and the M'Clintock River. The balance of fry were released at sites accessible by road and/or boat including Wolf Creek and the mainstem of the Yukon River. All locations are tributaries of the Yukon River located upstream of the Whitehorse Rapids Hydro-generating facility. A sample of fry were screened for disease prior to release and all results were negative for pathogens. Fry averaged 3.0 grams in weight at the time of release. A total of 163,522 fry received a coded wire tag and were fin-clipped (adipose fin) and 2,632 were unsuitable for coded wire tag placement but were fin clipped in advance of their release.

## **Background**

The Whitehorse Rapids Fish Hatchery, located in Whitehorse, Yukon, began operations in 1984. The facility, owned and operated by Yukon Energy Corporation with assistance from the Yukon Government and Department of Environment, raises chinook fry that are cultured from eggs and milt taken from fish captured at Whitehorse Rapids Fishway (also located in Whitehorse). The Hatchery was built and operated in recognition that the hydro-dam, owned by Yukon Energy, could impact survival of fry migrating downstream through the turbines.

The facility has produced up to 400,000 fry per year that are released at locations upstream of the Whitehorse Rapids Hydro-Generating Facility. In recent years the facility has been releasing between 100,000 and 170,000 chinook salmon fry annually. The hatchery is currently operated and managed by R & D Environmental Management under contract to Yukon Energy Corporation.

Some of the sites where the fry are released are remote and require use of a helicopter for access. As the production and release of these fry provides a benefit to users and interest groups along the river, the Yukon River Panel, Restoration and Enhancement Fund has been providing funding to the hatchery operators in order to offset costs associated with releasing the fry into remote areas.

## **Chinook Fry Production 2006**

Approximately 190,000 eggs were taken from 32 Chinook salmon females and fertilized with milt from 62 males. This resulted in the production of approximately 166,000 chinook fry. Prior to release most fry received a coded wire tag inserted into their nose cartilage and were marked by clipping the adipose fin. Fry which were deemed unsuitable for coded wire placement were adipose clipped prior to release. On average, the fry weighed 3.0 grams at the time of release.

A random sample of 60 fry was sent to the Pacific Biological Station in Nanaimo, British Columbia, where they were screened for disease. No viral agents or bacterial pathogens were found in any of the fish. More details on the rearing of the Chinook salmon are available in the Whitehorse Rapids Fish Hatchery 2006 /2007 annual report.

## **Release Methods and Locations**

All release locations are tributaries of the Yukon River located upstream of Whitehorse and the Whitehorse Rapids Hydro Facility. For remote sites, fry were transported in an auto-release type bucket that contained approximately 300 liters of water oxygenated by an air-stone and oxygen bottle secured to the bucket. Using a 100 foot tether the bucket was carried by the helicopter to the release locations. The helicopter lowers the bucket in the water at the release location which in turn results in the bucket rotating vertically 180

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degrees and releasing the fry into the water. No ground support is required using this system.

Up to 25,000 fry can be transported in the bucket during each lift. Therefore two lifts were made to Michie Creek and two to M'Clintock River site. A pre-release reconnaissance flight was flown over the locations prior to release. Total helicopter transfer time, including the reconnaissance flight was approximately 5.0 hours.

Fry released at the Yukon River Mainstem and Wolf Creek sites were transferred in a large insulated plastic fish tote (approximately 1.25 cubic metres). Water in the tote was oxygenated during the transfer. The fry release at the Wolf Creek Campground is an annual public event designed to educate the public about the chinook fry program.

The following table shows the number of fry released at each location and the coordinates of the remote release sites.

Table 1: Chinook Salmon Fry Release sites and Numbers Released at Each Site in June 2007

<b>Location</b>	<b>Coordinates</b>	<b>Number of Fry Released</b>	<b>Release Method</b>
Michie Creek	N 60 ° 41.70' W 134 ° 12.35'	50,590	Helicopter
M'Clintok River	N 60 ° 44.48' W 134 ° 27.64'	38,771	Helicopter
Mainstem Yukon River	N 60 ° 37.34' W 134 ° 53.49'	35,609	Truck/Boat
Wolf Creek	Campground Upstream	41,184	Truck

All fry transfers went very well with no loss of fish.

### **Recommendations**

On the day of release an aerial reconnaissance survey was conducted over the release sites to ensure the helicopter pilot knows exactly where to release the fish and to check for any obstructions, debris that might interfere with the release. This practice should continue.

Fry should be released as early in June as possible in order to minimize potential effects/stress on the fish as a result of temperature differential between the water the fish were reared in and the water they are transplanted to (as temperatures in the creeks rise).