

## Memorandum

To: Angus Mackey and Victor Keong, Pacific Salmon Commission

From: Nicholas de Graff, Salmon Stewardship Program Coordinator

Date: May 31, 2019

### **Re: Salmon Stewardship Coordinators for Yukon Schools. Year 7**

This memorandum represents a summary of activities associated with the Salmon Stewardship Coordinators for Yukon Schools program (SSCYS) that was recently completed for the Pacific Salmon Commission in 2018/19 (Contribution Agreement CRE-02-18). The program involved 11 schools in the Whitehorse Area and 7 rural schools throughout the Yukon (Table 1). Approximately 300 students were engaged in various program activities that included presentations, fish dissections and the opportunity of participating in a field trip to release fry that were raised over the winter in classroom aquariums.

The total of 1,400 Chinook eyed eggs were obtained from the Whitehorse Rapids Fish Hatchery and raised in Whitehorse area school aquariums. The proceeds (1,118 fry) were taken back back to the Whitehorse Rapids Fish Hatchery. Fry were eventually adipose clipped at the hatchery then seeded into Wolf Creek, a small tributary that discharges into the Yukon River above the Whitehorse Rapids Dam. In Teslin, eggs were obtained from wild spawning Chinook in the Morley River during August of 2018. This was part of a restoration project lead by the Teslin Tlingit Council to restore salmon in a local creek.

In north Yukon, 415 Chinook eggs were sourced from spawning fish in Blind Creek, a tributary of the Pelly River. These fish were raised in school aquariums located in Faro and Ross River and 118 resulting fry were released back into Blind Creek during May of 2019. Chum eggs (649) were also sourced from wild spawning fish in the Kluane River during October of 2018 and then fertilized and raised to the fry stage in Beaver Creek, Destruction Bay and Haines Junction school aquariums. These fish (535 fry) were released back into the mainstem of the Kluane River in late May of 2019.

Egg to fry survival in the individual aquariums was highly variable ranging from 0 to 100 percent. The majority of classroom aquariums experienced moderate survival rates, averaging about 81 percent. It should be noted that eyed eggs that were obtained from the Whitehorse Rapids Fish Hatchery had good survival rates compared to the previous year. The chum eggs that were obtained were also excellent with the three schools raising them all having high survival rates.

As in previous years the program coordinators encouraged each school to assume more responsibility for the maintenance of the aquariums in an attempt to reduce the overall program costs. Generally, only two visits were made to each school during the scholastic year. The initial visit was to seed eggs into each aquarium that was normally set up by school staff before arrival during the late summer or fall. Subsequent visits through the winter either presented information related to Pacific salmon life history and/or dissected a salmon. The program finished with assisting in field trips that released the fry during the spring. The need for additional visitations were associated with either a chiller malfunction or aquarium maintenance. Feed was either directly delivered to a school or mailed if the school was in a rural location.

Most of the schools that participated in 2018/19 had previously partaken in the program and were very comfortable with the prospect on taking on more responsibility. However, schools with little or no previous experience required more visitations by program coordinators. All schools funded their own transportation costs associated with field trips. The Whitehorse Rapids Fish Hatchery (Yukon Energy Corporation) graciously donated feed and fertilized eggs for the Whitehorse program.



**Figure 1 Ceremony with Elders, teachers, parents and students from the Ross River School participating in a Chinook fry release at Blind Creek River on May 7, 2019.**



**Figure 2 Teachers, parents and students from Christ the King School participating in a Chinook fry release at Wolf Creek on May 16, 2019.**



**Figure 3 Teachers, parents and students from Beaver Creek and Destruction Bay schools participating in a chum fry release at the Kluane River on May 26, 2019.**



**Figure 4 Aquarium and art associated with a classroom aquarium at the Takhini Elementary School.**

**Table 1 List of participating Yukon schools raising salmon in aquariums as part of the Stream to Sea Program, 2018/19.**

Number	School	Species	Stock Origin	Date Seeded	Number Seeded	Date Released	Release Site	Number Released	% Survival
1	Beaver Creek	Chum	Kluane River	25-Sep-18	207	28-May-19	Kluane River	194	94
2	Carcross	Chinook	Whitehorse Fish Hatchery	2-Nov-18	100	09-May-19	WRFH	95	95
3	D-Bay	Chum	Kluane River	25-Sep-18	187	28-May-19	Kluane River	105	56
4	Faro	Chinook	Pelly River (Blind Creek)	13-Sep-18	196	n/a	n/a	n/a	n/a
5	Haines Junction	Chum	Kluane River	25-Sep-18	255	27-May-19	Kluane River	236	93
6	Ross River	Chinook	Pelly River (Blind Creek)	13-Sep-18	219	7-May-19	Blind Creek Bridge	118	54
7	Teslin	Chinook	Morley River (Deadman Creek)	1-Nov-18	155	TBD	TBD	TBD	TBD
8	Christ the King	Chinook	Whitehorse Fish Hatchery	7-Nov-18	100	16-May-19	WRFH	105	100
9	Dukstra Daycare	Chinook	Whitehorse Fish Hatchery	7-Nov-18	100	16-May-19	WRFH	99	99
10	Ecole Tremblay	Chinook	Whitehorse Fish Hatchery	8-Nov-18	200	16-May-19	WRFH	54	27
11	Elijah Smith	Chinook	Whitehorse Fish Hatchery	8-Nov-18	100	16-May-19	WRFH	89	89
12	Goldenhorn	Chinook	Whitehorse Fish Hatchery	7-Nov-18	100	09-May-19	WRFH	89	89
13	Grey Mountain	Chinook	Whitehorse Fish Hatchery	7-Nov-18	100	09-May-19	WRFH	99	99
14	Holy Family	Chinook	Whitehorse Fish Hatchery	8-Nov-18	200	13-May-19	WRFH	170	85
15	Jack Holland	Chinook	Whitehorse Fish Hatchery	8-Nov-18	100	15-May-19	WRFH	44	44
16	Selkirk	Chinook	Whitehorse Fish Hatchery	7-Nov-18	100	13-May-19	WRFH	90	90
17	Takhini	Chinook	Whitehorse Fish Hatchery	7-Nov-18	100	15-May-19	WRFH	92	92
18	Whitehorse Elementary	Chinook	Whitehorse Fish Hatchery	8-Nov-18	100	15-May-19	WRFH	92	92



**TIME JOURNAL REPORTS 2018/19**  
**STREAM TO SEA PROGRAM**  
**CAN-NIC-A-NICK**  
**ENVIRONMENTAL SCIENCES**  
**FOR**  
**PACIFIC SALMON COMMISSION**

**June 1, 2019**

**Salmon Stewardship Coordinator Summary Report – 2018/19 Stream to Sea Project**

## Activities:

School	Teacher (s)	Activity	Date-Hours	Students	Comments
Faro and Ross River schools	Fran Etzel and Frank de Jong	DFO Transplant and Fish Collection Applications	July 5, 2018 2 hours		Submitted to DFO
Faro and Ross River schools	Fran Etzel and Frank de Jong	Purchase and obtain materials for Blind Creek egg take and emails	August 8, 2018 3 hours		Canadian tire, DFO, Home Hardware and Walmart 60 km
Faro and Ross River schools	Fran Etzel and Frank de Jong	Pack gear, grocery shop	August 11, 2018 3 hours		40 km
Faro and Ross River schools	Fran Etzel and Frank de Jong	Drive to Faro	August 12, 2018 4 hours		370 km
Faro and Ross River schools	Fran Etzel and Frank de Jong	Egg take and set up and seed two aquariums with fertilized eggs	August 13, 2018 12 hours		180 km
		Meeting with Dennis Zimmerman and Trix Tanner	September 25, 2018 2 hours		Discuss next years proposal
Beaver Creek, Haines Junction and Destruction Bay	Mr. Preto, Ms. Warren and Ms. Johnson	Driver to communities and set up aquariums	October 9, 2018 12 hours		Drive to Beaver Creek 843 km

School	Teacher (s)	Activity	Date-Hours	Students	Comments
Beaver Creek, Haines Junction and Destruction Bay	Mr. Preto, Ms. Warren and Ms. Johnson	Failed egg-take with students	October 10, 2018 10 hours	30 students, representing 3 schools	Return to Whitehorse 843 km
Permitting for Teslin School and solicitation for all Whitehorse Area schools			October 22, 2018 2 hours		
Beaver Creek, Haines Junction and Destruction Bay	Mr. Preto, Ms. Warren and Ms. Johnson	Successful egg-take and seeded 3 aquariums	October 25, 2018 12 hours	30 students, representing 3 schools	Return to Whitehorse 967 km
Grey Mountain, Christ the King and Holy Family schools	Mr. Hyde, Ms. Stitt and Ms. Gillard	Set up 3 aquariums in Whitehorse	October 30, 2018 6 hours		127 km
Whitehorse Elementary, Takhini and Selkirk schools	Ms. Bouayad, Ms. Levesque and Ms. Gale	Set up 3 aquariums in Whitehorse	October 31, 2018 6 hours		66 km
Teslin School	Ms. Nickel and Ms. Mackenzie	Set up 1 aquarium and arrange for egg delivery the following day	November 1, 2018 7 hours		Pick up water, drive to Teslin 325 km
Carcross School	Ms. Rupcic	Set up 1 aquarium and seed eyed eggs	November 2, 2018 6 hours	2 classes 15 students	Pick up water, eggs and drive to Carcross 145 km



School	Teacher (s)	Activity	Date-Hours	Students	Comments
Goldenhorn School	Ms. Nyman, Ms. Cunningham	Set up 1 aquarium, seed eyed eggs and present to classroom	November 5, 2018 4 hours	2 classes 20 students	Pick up water, eggs, filters and drive to rural school 60 km
Emily Tremblay, Dusk'a Daycare and Elijah Smith	Ms. Roy, Ms. Bradford and Ms. Wilson	Set up 3 aquariums in Whitehorse	November 6, 2018 5 hours		58 km
Grey Mountain, Christ the King, Selkirk, Dusk'a Daycare and Takhini schools	Ms. Gillard, Mr. Hyde, Ms. Gale, Ms. Levesque and Ms. Wilson	Seed eggs into 5 aquariums	November 7, 2018 4 hours	4 classes 40 students	60 km
Emily Tremblay, Whitehorse Elementary, Jack Holland, Elijah Smith and Holy Family	Ms. Bradford, Ms. Roy, Ms. Moore, Ms. Stitt and Ms. Bouayad	Seed eggs into 5 aquariums	November 8, 2018 4 hours	3 classes 25 students	91 km
Elijah Smith	Ms. Bradford	Presentation and adjust aquarium	November 9, 2018 2 hours	1 class 15 students	49 km
		DFO egg take spreadsheet submissions	November 13, 2018 3 hours		Related to issued collection and IT Permits
		Project status summary to PSC	November 19, 2018 1 hour		Related to upcoming YRP meeting

School	Teacher (s)	Activity	Date-Hours	Students	Comments
Holy Family, Grey Mountain, Takhini and Christ the King schools	Ms. Stitt, Ms. Gillard, Mr. Hyde and Ms. Gale	Pick dead eggs, check temperatures and change water/filters as needed.	November 29, 2018 3 hours		75 km
Jack Hulland, Emile Tremblay, Elijah Smith, Dusk'a Daycare, Whitehorse Elementary and Selkirk schools	Ms. Roy, Ms. Bradford, Ms. Bouayad, Ms. Nyman, Ms. Wilson, Ms. Moore and Ms. Levesque	Pick dead eggs, check temperatures and change water/filters as needed.	December 4, 2018 3 hours		81 km
Emile Tremblay	Ms. Roy	Replace chiller	December 10, 2018 2 hours		35 km
Emile Tremblay	Ms. Roy	Check alevins and adjust temperature	December 14, 2018 1 hour		35 km
Jack Hulland and Whitehorse Fish Hatchery	Ms. Moore	Adjust temperature of aquarium, pick up feed and deliver.	December 20, 2018 2 hours		65 km
Jack Hulland School	Ms. Moore	Replace faulty chiller, pick eggs and clean aquarium.	January 2, 2019 2 hours		66 km
		Repair chiller	January 3, 2019 1 hour		

School	Teacher (s)	Activity	Date-Hours	Students	Comments
Jack Hulland School	Ms. Moore	Replace faulty chiller, again!	January 4, 2019 2 hours		65 km
Whitehorse Elementary, Grey Mountain, Selkirk Elementary, Holy Family, Takhini and Christ the King.	Ms. Stitt, Ms. Bouayad, Ms. Gillard, Mr. Hyde, Ms. Gale and Ms. Levesque	Deliver feed and check aquariums.	January 11, 2019 3 hours	20	68 km
Emily Tremblay, Dusk'a Daycare, Elijah Smith, Holy Family and Goldenhorn Schools	Ms. Roy, Ms. Bradford and Ms. Wilson, Ms. Nyman and Ms. Stitt	Deliver feed, mail feed to rural schools, change water at Holy Family and check all other aquariums	January 18, 2019 5 hours		76 km
Carcross School	Ms. Rupcic	Check on fish and adjust temperature of aquarium.	January 30, 2019 3 hours		107 km
Porter Creek Secondary School	Mr. Ratcliff	Pickup aquarium and chiller for storage	January 31, 2019 1 hour		68 km
Jack Holland School	Ms. Moore	Drop off more feed and check on aquarium.	February 4, 2019 1 hour		65 km
Takhini, Dusk'a Daycare and Whitehorse Elementary	Ms. Wilson, Ms. Gale and Ms. Bouayad	Check on aquariums and adjust temperatures.	February 8, 2019 2 hours	15 students	67 km

School	Teacher (s)	Activity	Date-Hours	Students	Comments
Whitehorse Elementary, Grey Mountain, Selkirk Elementary and Christ the King.	Ms. Bouayad, Ms. Gillard, Mr. Hyde, and Ms. Levesque	Check on aquariums and feeder setup.	February 19, 2019 2 hours		72 km
Takhini School	Ms. Gale	Check aquarium and feeder setup.	February 21, 2019 1 hour		63 km
Emily Tremblay, Dusk'a Daycare and Elijah Smith,	Ms. Roy, Ms. Bradford and Ms. Wilson	Check aquariums and feeder setup at Emily Tremblay.	February 25, 2019 2 hours		54 km
Dusk'a Daycare and Grey Mountain schools	Ms. Wilson and Mr. Hyde	Change water and set up feeders for March break	March 7, 2019 3 hours	6 students	53 km
Christ the King, Whitehorse Elementary, Emily Tremblay, Selkirk, Elijah Smith and Takhini schools	Ms. Bouayad, Ms. Gillard, Ms. Levesque, Ms. Roy, Ms. Bradford and Ms. Gale	Change water and set up feeders for March break	March 8, 2019 4 hours		63 km
Christ the King, Whitehorse Elementary, Emily Tremblay, Selkirk, Grey Mountain and Elijah Smith schools	Ms. Bouayad, Ms. Gillard, Ms. Levesque, Ms. Roy, Ms. Bradford, Mr. Hyde and Ms. Gale	Change water, adjust temperatures and check feeders post March break	March 28, 2019 4 hours		79 km

School	Teacher (s)	Activity	Date-Hours	Students	Comments
Emily Tremblay and Christ the King schools	Ms. Roy and Ms. Gillard	Change filters and change water due to issues with water quality	April 9, 2019 3 hours		68 km
Emily Tremblay	Ms. Roy	Change water due to issues with water quality	April 17, 2019 2 hours		47 km
Selkirk School	Ms. Levesque	Change water, filter and replace food.	April 30, 2019 2 hours		48 km
Christ the King Ross River School	Ms. Gillard and Ms. Etzel	Prepare for dissection and field trip.	May 5, 2019 4 hours		
Christ the King and Ross River School	Ms. Gillard and Ms. Etzel	Dissection at CTK and drive to Faro	May 6, 2019 11 hours	25 students (2 classes)	440 km
Ross River School	Ms. Etzel	Ross River fry release and drive to Whitehorse	May 7, 2019 15 hours	30 students, Elders, 5 teachers and principle	494 km Loads of fun
Goldenhorn and Carcross Schools	Ms. Nyman Ms. Rupcic	Pick up fry, moth ball aquariums and deliver to the Whitehorse Rapids Fish Hatchery	May 9, 2019 6 hours		188 km Fry release planned for Wolf Creek.
Selkirk and Holy Family Schools	Ms. Levesque Ms. Stitt	Pick up fry, moth ball aquariums and deliver to the Whitehorse Rapids Fish Hatchery	May 13, 2019 4 hours	Many kids asking about fate of salmon at both schools!	74 km

School	Teacher (s)	Activity	Date-Hours	Students	Comments
Takhini, Jack Hulland and Whitehorse Elementary Schools	Ms. Bouayad, Ms. Gale and Ms. Moore	Pick up fry, moth ball aquariums and deliver to the Whitehorse Rapids Fish Hatchery	May15, 2019 6 hours	Many kids asking about fate of salmon at both schools!	85 km
Elijah Smith, Emily Tremblay, Grey Mountain, Christ the King and Dusk'a schools	Ms. Wilson, Ms. Bradford, Mr. Hyde, Ms Gillard and Ms. Roy	Pick up fry, moth ball aquariums and deliver to the Whitehorse Rapids Fish Hatchery	May 16, 2019 8 hours	Lots of inquiries about moving the fish from students and teachers!	105 km
Elijah Smith	Ms. Bradford	Field trip to Takhini River	May 21, 2019 5 hours	Hike and stream study – 25 students and 4 teachers	117 km
Jack Hulland and Holy Family schools	Ms. Stitt and Ms. Moore	Field trips to Wolf Creek, fry release, dissection and stream insect study. Clean up and dispose of carcasses.	May 22, 2019 7 hours	40 students and 5 teachers	52 km
Takhini and Emile Tremblay schools	Ms. Gale and Ms. Roy	Field trips to Wolf Creek, fry release, dissection and stream insect study. Clean up and dispose of carcasses.	May 23, 2019 7 hours	35 students and 4 teachers	52 km

School	Teacher (s)	Activity	Date-Hours	Students	Comments
Christ the King School	Ms. Gillard	Field trip to Wolf Creek, fry release, and stream insect study.	May 24, 2019 3 hours	34 students plus 3 teachers	52 km
Haines Junction School	Mr. Preto	Drive to Haines Junction, moth ball aquarium and transport fry to Kluane River release site and overnight.	27-May-19 8 hours	8 students (in class discussion)	410 km
D-Bay and Beaver Creek schools	Ms. Johnson, Ms. Warren	Drive to D-Bay, moth ball aquarium and transport fry to Kluane River release site and meet Beaver Creek School. Drive to Whitehorse.	28-May-19 8 hours	30 students, teachers, Elders, CO, RCMP and parents.	410 km
Goldenhorn School	Ms. Nyman	Field trip to Wolf Creek and stream insect study.	29-May-19 4 hours	24 students, parents and 3 teachers	42 km
Reporting	PSC	Prepare final report and expenditures	31-May-19 8 hours		