Chicago Creek Hatchery Operations

Final Report, 2000-2001

Project # 00-06-01

Submitted to: CFDC Nadina and Fisheries Renewal B.C.

Submitted by: Chicago Creek Community Environmental Enhancement Society

Chicago Creek Hatchery Operations
Project #00-06-01

Final Report: March 31, 2001
Compiled by Greig and Jacque Houlden for CCCEES
and
Brenda Donas, Community Advisor, DFO Smithers

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Cover Photo: Watershed Steward Bridie O'Brien and volunteer (in background) assist with Coho egg take at Chicago Creek Hatchery, October 2000.

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1. Project Background :

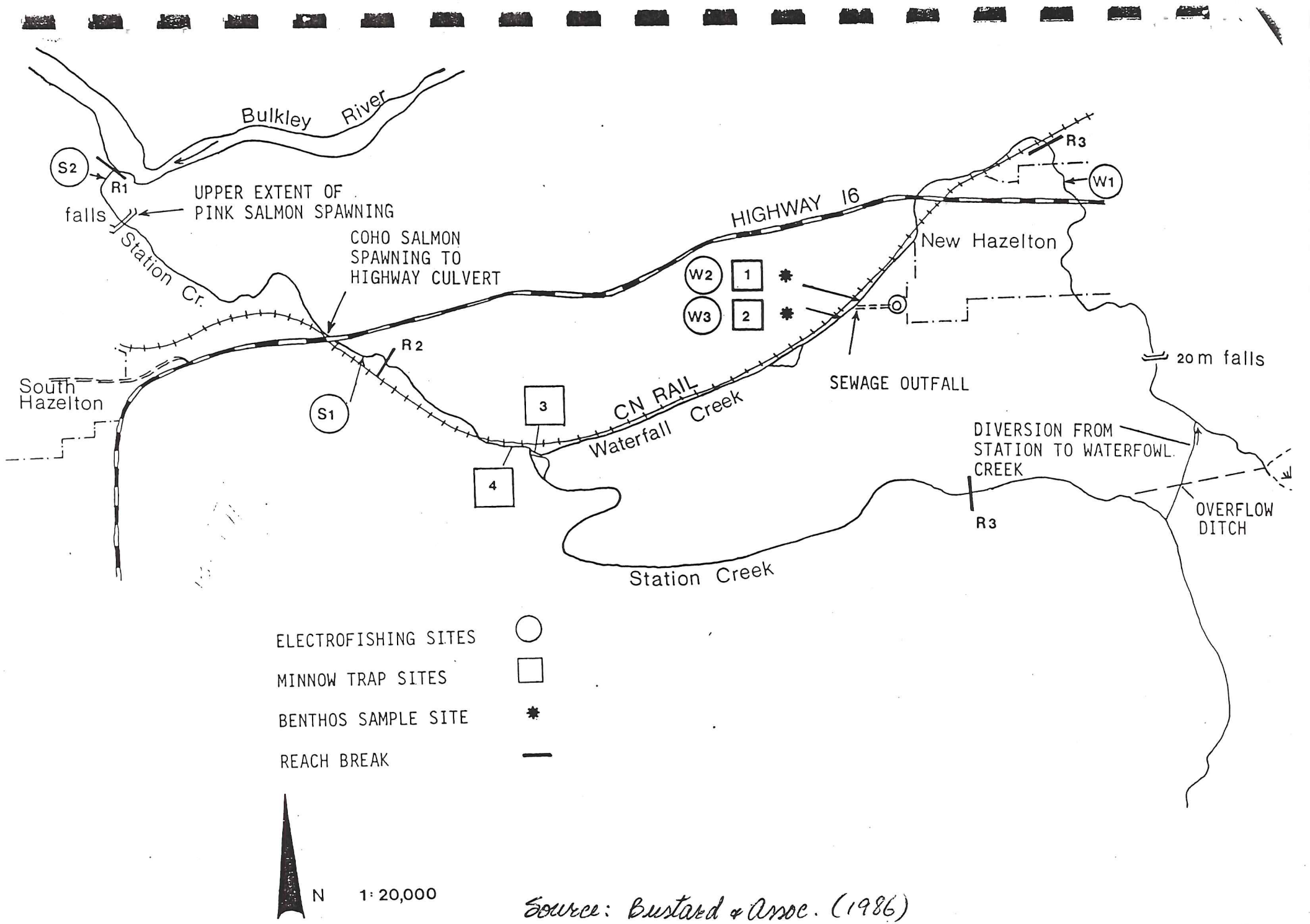
A. Waterfall Creek Stream Rehabilitation Project and New Hazelton Elementary Streamkeepers Program

Coho stocks in the Waterfall/Station/Mission Creek system (a tributary of the Bulkley River) had been wiped out in the late 1970s by improper installation of a culvert on Highway 16 between New Hazelton and South Hazelton. (See map, Figure 1) Since 1990, the Waterfall Creek Stream Rehabilitation Project had attempted to reintroduce Coho to the stream using surplus stocks transplanted from Toboggan Creek, near Smithers. The New Hazelton Elementary Streamkeepers program began in 1993 to assist the Stream Rehabilitation Program with the re-introduction of Coho salmon into Waterfall Creek in New Hazelton and to monitor activities along Waterfall Creek which might affect salmonids.

When the transplant license terminated, the project had to rely on salmon returning to the stream system for brood stock to rear and to maintain the Coho population in the system at sustainable levels. The program still requires the operation of a fish fence at the mouth of the stream system near the Bulkley River (which the Ministry of Highways designates as "Mission" Creek) and the trapping and transporting of adult spawners above the culvert in Highway 16. This situation will continue for the foreseeable future.

After failure of efforts to use an in-stream incubator due to winter freeze-up and the subsequent destruction of the incubator by vandals, Tim and Gladys Lemky offered the use of ponds on their property near South Hazelton, which had previously been used as a trout farm. It became clear that a permanent and reliable installation was required to ensure that a steady population of Coho could be supplied to the Waterfall/Station Creek system. This became more imperative as Coho stocks in the Bulkley River system dwindled and the numbers of Coho returning to the stream system declined.

The project has been recognized by the Federal Ministry of the Environment and the Canadian Wildlife Federation and has received financial assistance from BC 21, the Shell Environmental Fund, the Department of Fisheries and Oceans, the Ministry of Transportation and Highways, and Fisheries Renewal B. C.



Source: Bustard & Assoc. (1986)

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FIGURE 1: LOCATION OF SAMPLE SITES ON STATION AND WATERFALL CREEKS

1. Project Background:

B. The Chicago Creek Hatchery

The Coho enhancement program at Chicago Creek began in 1993-94 to assist the Waterfall Creek Stream Rehabilitation Program and the New Hazelton Elementary Streamkeepers with the re-introduction of Coho into Waterfall Creek in New Hazelton, B.C. After failure of efforts to use an in-stream incubator due to winter freeze-up and the subsequent destruction of the incubator through vandalism, Tim and Gladys Lemky offered the use of ponds on their property near South Hazelton which had previously been used as a trout farm. The Lemkys were in the process of rehabilitating the ponds which were overgrown and unused. Initial efforts involved use of pond-based incubators and external tubs for rearing fry until they could be released into ponds. Later experiments with exterior heath stacks failed.

In 1995, the Chicago Creek Community Environmental Enhancement Society was incorporated with the partial purpose of developing a hatchery on site that was capable of operating year-round and rearing Coho in sufficient numbers to ensure continuity of stocks. Although the ponds and grounds had been restored, the operation experienced ongoing problems with incubator freeze-ups, tub and drain washouts, and tub flotation due to high water table. It became clear that a more permanent and reliable installation was required to ensure that a steady population of Coho could be supplied to the target stream system.

When the creation of Fisheries Renewal B.C. was announced, the Chicago Creek Society joined the Bulkley-Morice Salmonid Preservation Group. In 1998, applications were made to:

1) construct a permanent incubation building on site to rear Coho eggs;

and, 2) re-construct the system of piping and drains which fed water from the ponds to the tubs and troughs and to construct a building to enclose all hatchery equipment and structures.

This hatchery is now completed and, in the first three years of operation, has supplied about 56,000 Coho fry and smolts for release into the Mission/Station/Waterfall Creek watershed.

2. Project Objectives and Accomplishments:

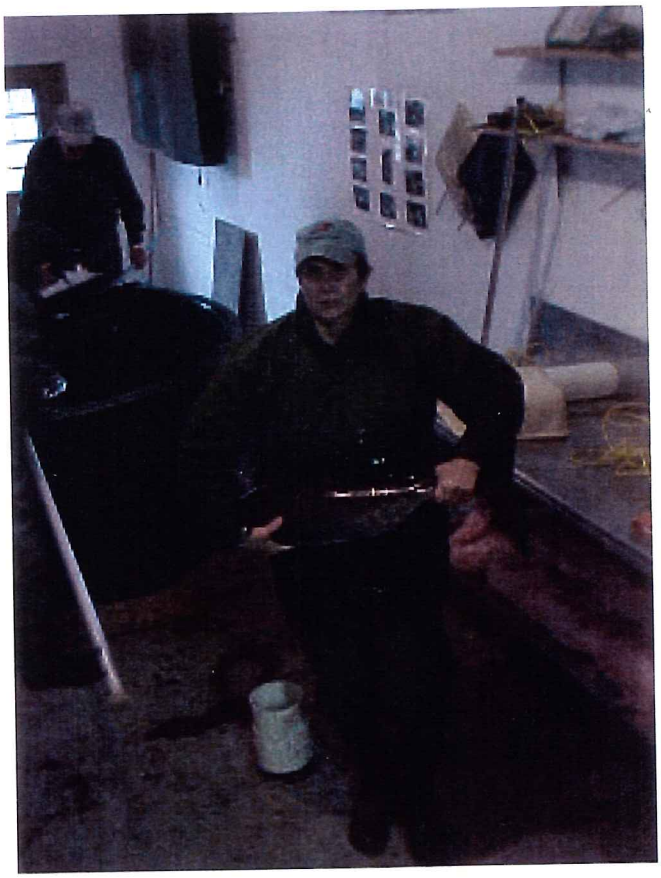
The purpose of the hatchery program is to:

- Return the coho run into Mission Creek to levels such that the available habitat is seeded to capacity.
- Educate local people about the salmon resource through field trips, hatchery tours and annual Open House events at the Hatchery. Local people have the opportunity to learn about fish in a "hands-on" fashion. People volunteer time at the counting fence and at the Hatchery. The people who participate develop a feeling of ownership of the resource. The students from the local elementary schools also participate by monitoring Mission Creek for water quality, fry presence/absence and other indicators of stream health such as aquatic insect surveys. The students also conduct stream clean-ups to help keep the fishes home clean.
- Encourage people to be ecosystem conscientious.
- Encourage land and water users to conduct their uses in a fish friendly manner.
- Provide information to companies/government/activities that negatively impact salmon habitat.

Some of the accomplishments of the Society have been:

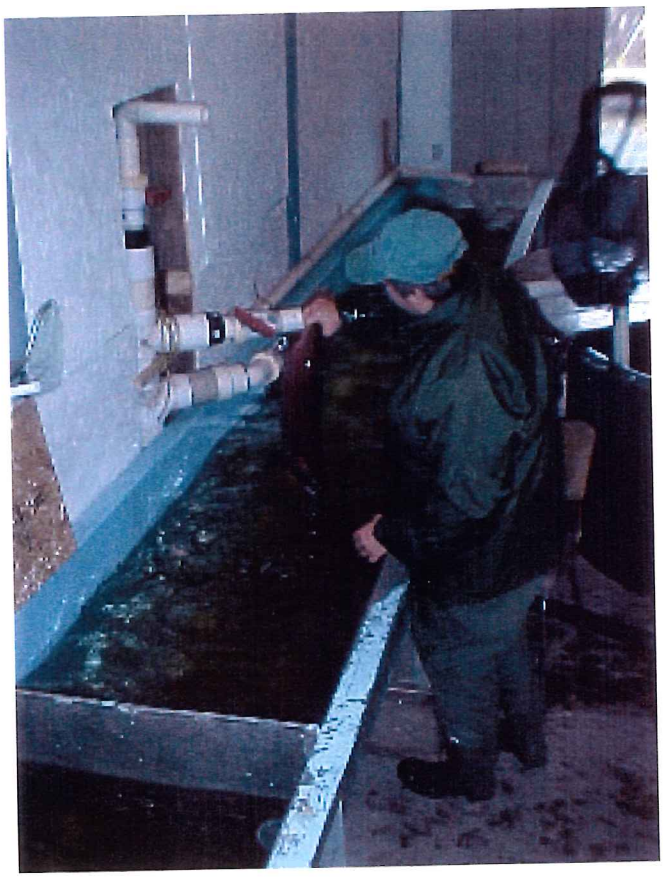
- Adult returns increased from a low of less than a dozen fish in 1994 to 165 coho adults in 1999.
- Natural egg depositions in the upper creek (upstream of the impassable Highway 16 culvert), i.e. 27,000 eggs was the estimated natural egg deposition in 1998 and 90,000 eggs in 1999.
- Supply local elementary schools with coho eggs for the Salmonids in the Classroom program.
- Education of local people through displays and printed materials at the annual Open Houses.
- Participation in the Observe Record and Report program.
- Assist MOTH with ensuring fish have access to the creek upstream of the impassable culvert.
- Foster a stewardship ethic by enthusiastically encouraging people to participate and assisting in their "fishy" education.
-Involvement in the Mission Creek Steering Committee.

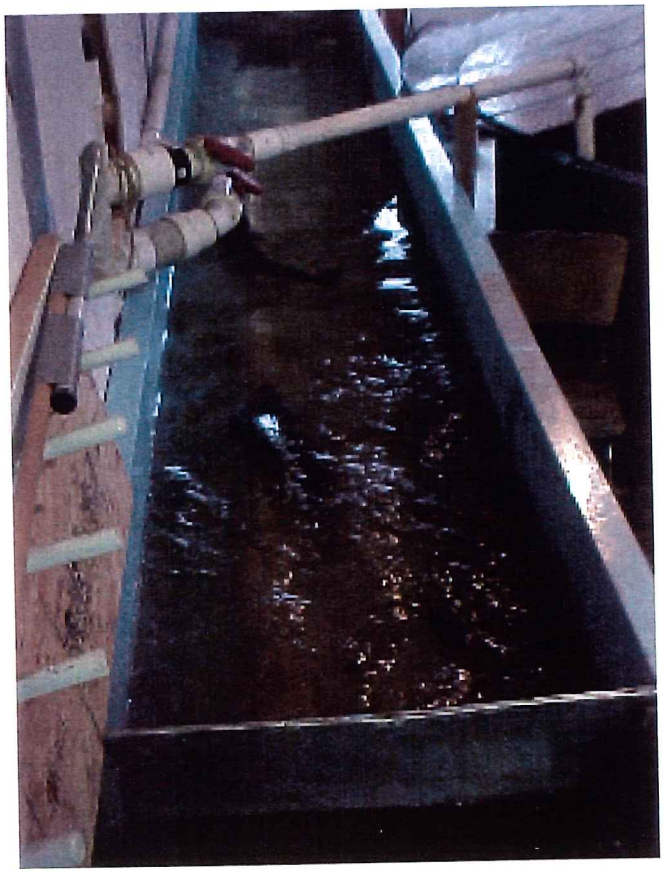
Checking Coho Brood Stock at Chicago Creek Hatchery, October 2000



Left: DFO personnel and hatchery volunteers net adult Coho spawners from the holding tank in Chicago Creek hatchery to see if the females are ready to spawn.

Below: After each fish is checked, it is placed temporarily in the hatchery Cap trough before being returned to the holding tank.





Left: Some of the dozen Coho spawners held at the hatchery for the enhancement egg take prior to being returned to the holding tank. The egg take was done as females became ready between Tuesday, October 24 and Saturday, October 28, 2000.

3. Project Activities:

The Chicago Creek Hatchery program was started in 1993. Originally, due to extremely low adult coho returns to Mission Creek, coho were transplanted from the Toboggan Creek hatchery to the hatchery at Chicago Creek. The transplanted coho eggs were incubated in an incubator termed a "cassette" incubator. The eggs basically sit in-between two window screens that are held together by plastic fasteners. These cassette screens fit into an aluminum frame that has horizontal slots that the screens fit into. The cassette incubator was installed in an earthen pond at the hatchery and the eyed eggs stay in the cassette until they are ready to pond. Usually, we try to take about 25,000 eggs so that we end up with about 20,000 to 22,000 fry.

The fry are "ponded" into troughs and are fed a pelleted diet that contains all of the nutrition they require. When first ponded the fry need to be fed about every 15 to 20 minutes, and they weigh a mere 0.25 grams. Ponding usually occurs about mid-May and by the end of June the fry are about 2 grams in size. Jack Williams is the main fish feeder and he has a special knack for getting the fish growing very quickly.

Once the fry reach a size of about 2 grams, the right maxillary is clipped off. The maxillary is a piece of cartilage that originates near the eye of the fish and curves down towards the upper jaw. We clip the fry so that when they return as adults, we can distinguish which of the coho are hatchery fish. We can then calculate survival from smolt to returning adult. The fish are reared in the earthen pond until the following May. The fish are released as yearlings in mid-May each year. Our favorite release locations are Mission Creek at the Carr's property, Waterfall Creek near the helicopter pad and Waterfall Creek behind the Petro Canada gas station.

Coho return to spawn when they are three to four years old. Most of our coho return at four years of age. During September and October each year, members of the Chicago Creek Community Environmental Enhancement Society install and operate a small fish counting fence near the mouth of Mission Creek. In the early years of this program (1994-1997), there was very little funding available to build, install and operate the fence. Since 1998 the Ministry of Transportation and Highways has contributed funding, as has Fisheries Renewal B.C. The MOTH contributes so that the fence staff can transport adult coho upstream of the impassable Highway 16 culvert. They must do this under DFO Inspector's Order to create passage for fish.

3. Project Activities: (cont'd.)

A portion of the coho adults captured at the Mission Creek fence are transported to the section of Mission Creek (some folks call this portion of creek Waterfall Creek) that flows through New Hazelton. In past years adult coho have been observed spawning at the foot of 11th Avenue and throughout the creek in New Hazelton. Local people have been quite impressed with being able to watch coho adults spawn just about in their back yard!

A portion of the adults captured at the fence are released into Mission Creek just upstream of the counting fence and they spawn naturally. Some adults (our target numbers are about 10 males and 10 females) are transported to the Chicago Creek hatchery where they are held until they are sexually mature. Once the adults are "ripe" the eggs and sperm are taken, eggs are fertilized and put into Heath tray incubators.

The eggs cannot be disturbed until they develop their eyes. Once the eggs develop their eyes, then they can be handled. At the eyed stage, the dead eggs are picked out and the live eggs are enumerated. At regular intervals right through until ponding, the dead eggs are picked out. In late February to early March, the eggs hatch into alevin and by about mid-May the alevin have developed into fry. The process then begins over again for another year.

Egg Take at Chicago Creek Hatchery, October 2000

Left: Sperm (or milt) is removed from an adult male Coho and placed in a bag for later use in fertilizing eggs.

Right: Eggs are removed from a female Coho and placed in a clean plastic tub for fertilization.

Left: Sperm from several males is mixed with eggs from each female to ensure maximum genetic diversity is maintained.

Right: Water is added to complete the process and excess sperm is removed before the eggs are placed in Heath trays and stacked in the Incubation Building.

4. Project Results:

The new incubation building operated successfully in the winter months of 1998-99, 1999-2000, and 2000-2001. Approximately 14,000 Coho eggs were incubated over the term of this contract. (See table) Due to low returns of adult spawners in 2000, we were unable to meet our target goal of 25,000 eggs. Some adult spawners were released into Waterfall Creek to spawn naturally and provide a comparison for estimating natural survival rates by comparison to marked smolts released in future years.

The fry from the 1999 season were reared in the hatchery building until they were maxillary clipped to mark them and were placed in one of the ponds. Approximately 24,000 smolts which have wintered successfully at the hatchery are scheduled to be released into the watershed on May 15 and 16, 2001. Survival rates improved over those estimated in March of 2000 due to the elimination of predators (otter and marten) in the pond over the winter months.

Students from New Hazelton Elementary and South Hazelton Elementary Schools, who study the life cycle of the coho and maintain classroom incubators using Coho eggs supplied by the hatchery, visited the site on May 10, 2000. They are expected to be joined by students from John Field Elementary School for a visitation day scheduled for May 17, 2001.

An Open House was held at the Hatchery on May 13, 2000. Approximately 3 dozen people attended through the day. As well as taking in educational displays, participants assisted in the weight sampling of fry in the cap troughs, and of smolts in the ponds.

In the past year of operation, the Society has maintained its enhancement efforts, despite disappointing adult returns. Membership has increased from 7 to 20 members. With continued success through another full cycle of Coho spawning in the Waterfall/ Station/Mission Creek stream system, we hope to bring this low year in the cycle up to the level of other years.

Recent completion of detailed engineering study of stream restoration sites on Waterfall Creek and possible replacement of the problem culvert under Highway 16 hold the promise of a naturally-spawning, self-sustaining Coho population in the system. This would effectively accomplish the long-term goal of both the Waterfall Creek Stream Rehabilitation Project and the Chicago Creek Society. At this point, we would look to other watersheds in the area as a focus for our efforts.

4. Project Results:

Table of Statistics For Chicago Creek Hatchery, 1993-2001

Year	Number of Adult Coho Counted	Number of Eggs Taken	Number of Yearlings Released	Mark Type or Clip	Size and Time of Release	Comments
1993	3	20,000	4387	Left or Right ventral	May 10/95 @17.8 g	Toboggan transplant. Freeze-up of incubator caused mortality.
1994	6	20,000	5789 rel. as fry, 16,500 rel. as smolts	Right ventral	Oct 12/95 @ 4 g May 6/96 @ 19.9 g	Toboggan transplant. Freeze-up problems, again.
1995	20	18,000	9800	Left maxillary	May 7/97	Mission Cr. stock. Fish disease problems.
1996	20	12,000	9000	Right maxillary	May 4/98	Mission Cr. stock. Pipeline broke.
1997	30	5,000	75 fry	unmarked	July/98 @ 2.0 g	Mission Cr. stock. Disease problems.
1998	65	30,000	11,742	Right max.	May 14/00 @ 20.44 g	Mission Cr. stock. New Incubation Bldg.
1999	161	33,000		Right max.		Mission Cr. stock.
2000	14	14,000				Mix of unmarked and Mission Cr. stock.
2001						

Miscellaneous Hatchery Activities, 2000-2001

Right: Woodshed constructed in Fall of 2000 to hold winter wood supply for Chicago Creek Hatchery.

Left: Fish Fence employees meet Watershed Steward Bridie O'Brien and Village of Hazelton administrator Diane Ready at the site of the Mission Creek Coho Fence.

Right: Chicago Creek Society members, hatchery employees, and volunteers share a pot luck dinner to celebrate the end of another successful year. March 2001.

5. Future Objectives:

Future objectives are to maintain current enhancement efforts to increase coho returns in this low year of the cycle, specifically to:

* Double egg take from 14,000 to 28,000.
* Increase return of adult spawners from 14 to 140.
* Increase natural egg deposition from 4,400 to 150,000.

6. Acknowledgements:

The Society wishes to acknowledge the contributions of the following groups or individuals, for their assistance in the successful completion of this project:

* Department of Fisheries and Oceans for biological advice and technical designs and especially Brenda Donas and Trace Joe for assistance beyond the call of duty;
* Fisheries Renewal B.C. for project funding;
* the Bulkley-Morice Salmonid Preservation Group and Nadina Community Futures for their moral and administrative support;
* Tim and Gladys Lemky, for providing an irreplaceable site and their extensive efforts.
* Jack Williams and Janet Sutherland, for keeping the operations going.
* Greig and Jacque Houlden for keeping the paperwork in order.
* The volunteers and members of the Society who continue to keep the dream alive.

SALMONID RENEWAL PROJECT
PREPARED BY CONTRACTOR/PROPONENT

Performance Report
SUBMITTED TO PARTNER GROUP

Instructions
- *Please submit your final report within 30 days of project completion.*
- *This report should be prepared based on actual results from the past year. The information collected will be used to assess specific and overall achievements of the program.*
- *Feel free to attach additional pages with comments or other information if space is too limited here.*

PART I - IDENTIFICATION

A. Proponent/Contractor Name

CHICAGO CREEK COMMUNITY ENVIRONMENTAL ENHANCEMENT SOCIETY

B. Proponent/Contractor Address

Box 152

South Hazelton, B.C.
V0J 2R0

(250) 842-5164 (phone)
(250) 842-2164 (fax)
(Phone/Fax)

ghoulden@cmsd.bc.ca
(Email)

PART II - PROJECT DESCRIPTION

A. Project Number and Name

Chicago Creek Hatchery (Operations)
#00-06-01

B. Project Location

1260 Chicago Creek Road, South Hazelton, B.C.

C. Project Life

April 1, 2000 *(Start Date* to March 31, 2001 *End Date)*

D. Project Type (*Check all that apply and indicate amount allocated for each category)*

	Type	Amount
Inventory & Mapping		
Stock Assessment		
Stock Enhancement	✓	22,660
Habitat Restoration		
Education & Public Awareness	✓	
Stewardship/Community Planning	✓	
Other (Specify)		

E. Project Results

- 24,000 Coho fry were overwintered to smolt stage for release in May 2001
- 14,000 Coho eggs were incubated to alevin stage by March 2001
- restoration and enhancement efforts were coordinated with other groups working in the Mission/Station/Waterfall Creek system through the Mission Creek Steering Committee
- Public awareness was increased through newspaper articles (attached)

PART III – PERFORMANCE REPORTING

A. Environmental Account

	Actual Results
1. a. Habitat Restoration *Total kilometres of stream treated:*	
b. Stock & Habitat Assessment *Total kilometres of stream assessed:*	
c. Inventory & Mapping *Total linear metres of area mapped:*	
d. Stock Enhancement *Total number of smolts reared:*	24,000
e. Other *Coho eggs incubated:*	14,000

2. What project design and/or assessment standards were used and how were they employed? List relevant certification or other qualification of experts or specialists involved.

- Recommended egg take and enhancement goals (per Department of Fisheries and Oceans biologists, Community Advisor's office) were followed.
- Fisheries Biologist, DFO, Smithers, B.C.
- Fisheries Technician, DFO, Smithers, B.C.

3. Description.

- Project was successful in achieving excellent survival rates from fry to smolt stage.
- Term of the project was altered from our proposal due to term set by BMSPG for previous contract.
- Low returns of adult spawners (traditional low year in cycle) did not allow us to meet egg take/enhancement objectives for this year.
- Further enhancement through <u>at least</u> one more 3-year cycle will be required to bring coho populations up to a level equal to the other 2 years.

B. Economic Development Account

Actual Results

	Head Count	Person Days
1. Employment (*Total # of jobs)*	7	334
2. Volunteer Labour *(Total # of volunteers):*	9	60
3. Employment Equity (may include counting an individual more than once. e.g., a young woman is counted in both a & c)		
a. *Total # women employed:*	2	121
b. *Total # Aboriginal persons employed:*	1	100
c. *Total # youth (aged 15-24) employed:*		
d. *Total # former fisheries workers employed (interpret broadly to include all forms of fisheries related employment):*	1	120

4. Training
# of individuals certified by program:

Program Name	*Head Count*

5. Local Economic Activity	$
a. *Expenditures in Partner Group area:*	21,919
b. *Expenditures elsewhere in BC:*	550
c. *Expenditures in other areas:*	191

6. Description. *In what other ways did local communities benefit from the SRP projects?*

- One ex-fisheries worker was employed for 120 days.
- Two additional female workers (one aboriginal) were employed for a further 121 days.
- Majority of expenditures were made in the partner group area.
- Local supplies, contractors and labor were used extensively.
- Bulkley River Coho stocks were enhanced in a traditionally low year in the cycle.

C. Planning & Partnerships Account

1. Planning
   - This project is part of an ongoing Coho stock restoration program as operated under supervision and advice of the Department of Fisheries and Oceans, Community Advisor's Office, Smithers.

2. Partnerships
- Chicago Creek Community Environmental Enhancement Society, Tim Lemky - President (Registered Society operating Chicago Creek Hatchery).
- Waterfall Creek Stream Rehabilitation Project, Greig Houlden - Coordinator (Stream Rehab. Program).
- Waterfall Creek Streamkeepers, New Hazelton Elementary School, Grade 7 class.

3. Public awareness
- Local newspaper reports (copies attached).
- Visits by classes from 2 local elementary schools.
- Open House was held with about 24-30 members of the public attending.
- Sign erected along Highway 16 and site is open to the public.
- Public displays at the Tourist Booth and Smithers Fall Fair.
- Web site in development at New Hazelton Elementary School.

D. Financial Account

	($)
1. Total FsRBC Project Funding:	22,660
2. Leverage: Other funding	
_____ *(corporation/funding agency)*	
_____ *(corporation/funding agency)*	
Total Funding	22,660
In-kind contributions (Total)	29,672 estimated $ value

***Note: Anticipated DFO Contract traditionally in amount of $3,500 was not received due to budget cutbacks. $500 in fish food plus support personnel and vehicle mileage were contributed.**

3. Description. *Was the project done on time? On budget?*

- Project is ongoing. Objectives were met as closely as possible and within the allocated FsRBC budget amount.

4. Certification by administrative applicant that all terms and conditions of agreement with proponent have been met.

_____ _____

Signature of Administrative Applicant Date

The Interior News
Wednesday, July 26, 2000

Chicago Creek hatchery brings coho back to New Hazelton stream system

By Gretel Miles
The Interior News

In 1990 there were only three coho to be found in the New Hazelton stream system known as Waterfall Creek, Station Creek, Mission Creek and Chicago Creek.

Last year, 165 were counted, due mainly to the efforts of the Waterfall Creek Stream Rehabilitation Program and the Chicago Creek Hatchery.

Once a healthy coho habitat, the streams had become dirty, and a high culvert under a railway bridge proved an impassible barrier to returning fish. But in the past few years adult coho have been seen spawning throughout the reclaimed creek system.

Since 1990, the students in Greig Houlden's grade 7 class at New Hazelton Elementary have worked to restore the stream system, raise community awareness of the coho stream, and written letters to ask the Ministry of Transportation and Highways to solve the problem culvert.

They have raised and released young fish into the streams each spring, and helped move adult coho past the culvert to the upper streams, when they return in the fall to spawn.

In 1990 Tim and Gladys Lemky bought a place at Chicago Creek, near South Hazelton, that had been a trout farm in the 1970s, and in the winter of 1992, their friend, Jack Williams, moved into a trailer on the property. In the spring, he asked the Lemkys about the pools.

"I saw these beautiful ponds, all grown over with willow and wondered if there might still be a few fish in them." Williams, retired, says he needed something to keep busy with, and began to wonder about a fish farm.

The Lemkys were too busy to take on the project, but told Wilson to go for it.

In May 1993, he [illegible] arrangement

Brenda Donas, a Smithers DFO Community Advisor, thought the prospects were good, and helped get the project underway.

Different methods of incubation in streams failed, due to freeze-up and vandalism, so pond-based incubators and external tubs for rearing were tried. Severe weather, tub and drain wash-outs and high water problems pointed to the need for a permanent and reliable arrangement and, in 1995, the Chicago Creek Community Environmental Enhancement Society was incorporated, to develop a year-round hatchery.

Piping and drains for the ponds have been reconstructed and there is now a permanent incubation building on site to hatch eggs in April. In May the fry move to the hatchery building to be "ponded." They are fed until June, when they are big enough to be clipped for identification, then moved to the outdoor ponds in July, and released the following spring.

"Now that we have the proper equipment, we are doing absolutely fantastic," says Donas, who insists her main contribution has been technical support and help cutting through red tape. She notes that Jack Williams, the only paid employee, seems to have a special knack for getting the fish to grow.

The coho are released in mid-May, in locations around the stream system in New Hazelton, and make their way down the Skeena to the sea, returning when they are three years old.

Volunteers, guided by Donas, and with some assistance from Ministry of Transportation and Highways, install and operate a small fish counting fence near the mouth of Mission Creek where it meets the Bulkley.

A DFO Inspector's Order requires that a passage for fish be created, so returning coho are caught and transported to the upper stream, past the culvert barrier, where they spawn, and eggs are collected at this time.

Donas says the culvert is due to be replaced within a few years, and to comply with DFO regulations, a new arrangement will have to be developed by the highways ministry, to allow the fish to get upstream by themselves.

In the meantime, the efforts of the community have led to a restored habitat for coho and a reintroduction of the fish to the New Hazelton waterways.

Volunteers do most of the work, and DFO's Community Program has assisted with funding, as well as some food and equipment.

[illegible] Renewal BC

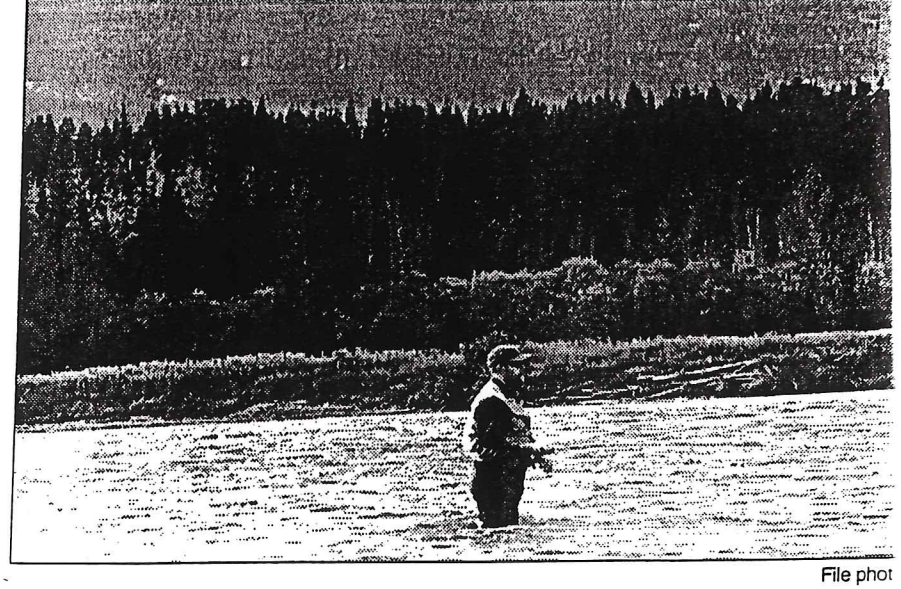
Morice Salmonid Preservation Group, and Nadina Community Futures have given moral and administrative support.

It doesn't take much. Houlden estimates Chicago Creek could get by with just $20,000 a year, but sadly, says the hatchery is low priority for Fisheries Renewal BC. If there are further cut-backs "we probably are going to fall off the table."

The Chicago Creek Hatchery welcomes volunteers, new society [illegible]

News photo by Gretel Miles

TIME TO MOVE: Tracy Joe and Fiona Anderuchow prepared to transfer young coho salmon to another pond, at Chicago Creek Hatchery.



File phot

RESTORE BALANCE: Communities like New Hazelton are working to restore waterways that once supported large numbers of fish, and may once again.

INTERIOR NEWS Wed., Nov 22/00 Page A1

Bringing back the fish

Community works to restore habitat

By Gretel Miles
The Interior News

A steering committee has formed to work on developing a plan that will continue to revive New Hazeltons Mission Creek, so it can become the perfect fish habitat it once was.

The creek, also known as Station Creek and Falls, or Waterfall Creek, was home to a healthy coho population and also has steelhead, Dolly Varden, cutthroat trout, and pink salmon.

For ten years, school and community groups like the Chicago Creek Hatchery have worked to raise community awareness of the waterways and transported coho past an old highway culvert that blocks their return, as well as incubating, rearing and releasing coho to build up the stock.

A meeting of interested groups on October 5 was hosted by Bridie O'Brien, Upper Skeena Habitat Steward. She was hired in May, and is employed by the Northwest Stewardship Society of Terrace and the Gitxsan Watershed Authority and funded by the Department of Fisheries and Oceans, Canada.

Her role is to support fish advocate groups, develop partnerships groups and provide technical support and community education about fish and fish habitat.

All industries, municipalities and other government agencies that conduct activities have a stake in the future health of the fish habitat and were invited to the meeting and O'Brien was pleased with the turnout of 15.

"Everyone was enthusiastic and eager to work together, maybe with the efforts of this group we can make a difference and re-establish a healthy, self-sustaining fish population in Mission Creek."

There was a willingness to work together, sharing in-house resources and expertise, says O'Brien, and it was a good opportunity to share goals and objectives around any activity around the waterway, with the common [illegible]

protecting the fish and their environment.

The September 13 removal of a beaver dam in the creek beside the CN rail tracks left water levels dangerously low, threatening the winter home of young coho.

O'Brien and Brenda Donas, community advisor for the Ministry of Fisheries and Oceans built a temporary weir to replace the dam while allowing water to still flow, and the levels will be monitored to maintain a safe habitat.

They will be working with New Hazelton on the enhancement and beautification of the stream area, as part of the new community plan.

Hazeltons fish work underway

Work has begun on a plan that will continue to revive New Hazeltons Mission Creek so it can become the perfect fish habitat it once was.

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Her role is to support fish advocate groups, develop partnerships, and combine technical support and community education about fish and fish habitat.

"Everyone was enthusiastic and eager to work together," O Brien said. "Maybe with the efforts of this group we can make a difference and re-establish a health, self-sustaining fish population in Mission Creek.

There was a willingness to work together, sharing in-house resources and expertise, says O'Brien, and it was a good opportunity to share goals and objectives around any activity around the waterway, with the common concern of protecting the fish and their environment.

The Sept. 13 removal of a beaver dam in the creek beside the CN rail tracks left water levels dangerously low, threatening the winter home of young coho.

O'Brien and Brenda Donas, community advisor for DFO, built a temporary weir to replace the dam while allowing water to still flow. The levels will be monitored to maintain a safe habitat.

They will be working with New Hazelton on the enhancement and beautification of the stream area, as part of the new community plan.

Fisheries Renewal BC
Project Expenditure Report

Partner Group Name: CHICAGO CREEK COMMUNITY ENVIRONMENTAL ENHANCEMENT SOCIETY

Name and Number of Project: *CHICAGO CREEK HATCHERY (OPERATIONS) #00-06-01*

note: please verify calculations within this spreadsheet; formulas may not be accurate

Person Days from Performance Report	334
Person Days from this report	334
Difference	-

Time frame: Apr/01/00 (mm / dd / yy) to Mar/31/01 (mm / dd / yy)

Labour

Wages & Salaries

Position	# of crew	# of work days including stats	hrs per day	rate per hour	Total (FsRBC + in-kind + cash)	-	In-Kind + Cash	FsRBC Amount
Hatchery Mgr/Worker	1	92	8	15	11,040		3,240	7,800
Hatchery Mgr/Worker	1	212	4	15	12,720		4,470	8,250
Maintenance/Construction	2	3	8	15	720		240	480
Project Biologist	1	12	8	35	3,360		3,360	-
Fisheries Technician	1	12	8	20	1,920		1,920	-
					-			-
					-			-
Person Days (# of crew x work days)		334		sub total	29,760		13,230	16,530

Labour - Employer Costs (percent of wages subtotal amount)

(CPP, EI, WCB, Vacation Pay)	rate	13%	sub total	3,869		1,720	2,149

Subcontractors & Consultants

	# of crew	# of work days	hrs per day	rate per hour			
Snow Removal	1	10	1	66	660		660	
Rock Hauling	1	1	2	25	50			50
Ken's Oil Service					239			239
					-			-
WCB if applicable (not covered by own policy)	rate	0%			-		-	-
				sub total	949		660	289

Volunteer Labour

	# of crew	# of work days	hrs per day	rate per hour			
Skilled	3	10	8	25	6,000		6,000	
Un-skilled	6	5	8	10	2,400		2,400	
WCB if applicable (not covered by own policy)	rate	0%			-		-	-
				sub total	8,400		8,400	-

Total labour costs 42,978 | 24,010 | 18,968

Site / Project costs

	Detail (use additional page for details if needed)			
Travel (do not include to & from work)	3,000 km. @ $0.42	1,260	1,260	-
Small Tools & Equipment		179		179
Site Supplies & Materials		588	500	88
Equipment Rental	Snow Blower	450	450	-
Work & Safety Gear				-
Safety Training & Supplies				-
Repairs & Maintenace		619		619
Permits				-
Technical Monitoring				-
Other site costs	Wood, oil & hydro	1,150		1,150
	Total Site / Project Costs	4,246	2,210	2,036

Fisheries Renewal BC
Project Expenditure Report

Partner Group Name:
Name of Project:

Training	Detail (use additional page for details if needed)	**Total (FsRBC + in-kind + cash)**	-	**In-Kind + Cash**	**FsRBC Amount**
Safety / 1st Aid					-
					-
					-
					-
					-
	Total Training	-		-	-

Overhead	Detail (use additional page for details if needed)			
Office space; including utilities, etc.	12 months @ $100	1,200	1,200	-
Insurance	(Policy copy supp plied)	700	200	500
Office supplies		329		329
Telephone & long Distance	Fax charges	78		78
Photocopies & printing		149		149
Other overhead costs	Computer, Diginal camers use	900	900	-
	Fax Replacement	371	371	-
	File Cabinet	181	181	-
	Bookkeeping, Invoices, Payroll	1,200	600	600
	Total Overhead	5,108	3,452	1,656

Capital Costs / Assets (*subject to FsRBC policy*)				
				-
				-
				-
				-
				-
	Total Capital Costs	-	-	
	Project Total	52,332	29,672	22,660

Expenditure Summary
(FsRBC + in-kind + cash)

Labour	42,978
Project / Site Costs	4,246
Training Costs	-
Overhead Costs	5,108
Capital Costs	-
Total	52,332

Project Total	**(1)**	52,332
In-Kind & Other Funding	**(2)**	29,672
Total FsRBC Expenditure (1 - 2)	**(3)**	22,660
Total allocated to the project by FsRBC	**(4)**	22,661
Difference (3 - 4)		(1)

Suskwa Coho Juvenile Synoptic Survey 2000

Prepared for
Fisheries Renewal B.C.

By
The Suskwa Restoration Society
March 2000

Summary

The following proposal has been submitted to Fisheries Renewal B.C. (FsRBC) by the Suskwa Restoration Society (SRS). In 1999/2000, SRS implemented and completed a Coho Synoptic Survey (CSS) in the Suskwa River Watershed. This CSS is a proposal to continue with works conducted in 1999 for FsRBC.

This project will involve 25 days of fieldwork and 10 days of report production for 2 crewmembers. The total funding requested from FsRBC is $23,750 plus a SRS "in kind" contribution of $ 2,375 would bring the total project cost to $26,125 (see attached budget sheet). The field season would commence in August and continue into October 2000.

Introduction

The Suskwa River watershed encompasses about 130,000 hectares east of Hazelton, B.C. and is a major tributary of the Bulkley River. The Suskwa River Supports runs of chinook, coho, and pink salmon, as well as rainbow/steelhead trout, cutthroat trout, bull trout, Dolly Varden char, mountain whitefish, and course fish species.

The Suskwa River watershed is comprised of drainage's from the Nechako Plateau and lower sub-basins that often exhibit entrenched valleys and canyons. The Suskwa Restoration Society (SRS) was established in 1995 in order to acquire funding for watershed stewardship activities. The primary goal of this non-profit society is to enhance and conserve the natural resources of the Suskwa River watershed.

In 1999, SRS acquired funding from FsRBC to conduct Coho Salmon Synoptic Surveys in the Suskwa River watershed. Barry Peters (DFO Terrace), and Brian Spilsted (DFO Prince Rupert) coordinated this project. Before 1999, no juvenile coho data was available for the Suskwa River, and according to Barry Finnigan (DFO North Coast Coho Biologist), any information is considered valuable.

Sixteen productive coho salmon rearing sites were identified in 1999, and each site provides an excellent opportunity for long-term research of coho salmon stocks in the Suskwa River watershed. Four other sites were identified as potentially productive but time constraints prevented a thorough assessment in 1999. These sites should be added to the synoptic survey program. The Suskwa River Coho Juvenile Synoptic Survey 2000 will provide important data to compare with results obtained in 1999 and with results of other similar assessments in the Skeena River watershed.

The 1999, about 2500 juvenile coho salmon were trapped, sampled, and released. Fish density was estimated at about 0.5 coho per m^2 and was as high as 1.5 coho per m^2. As this was a single-year study, it is unknown how this stocking relates to normal conditions.

Project Rational

As a result of current conservation initiatives, higher than average escapements of coho salmon are expected in the Skeena River tributaries. This provides the opportunity to identify critical spawning and rearing habitat, species distribution, and population densities. This survey will add to baseline population data collected in 1999. These activities will also provide information for DFO coho conservation initiatives, employment and training for local people and stewardship opportunities for the local communities involved.

Methodology

Juvenile coho synoptic surveys consist of fish trapping and detailed habitat assessments. Sixteen permanent-sample sites established in 1999 will be revisited. Four additional sites will be established upstream of the 1999 study area in the upper Suskwa River.

After sites are selected (about 40 m of stream length per site), habitat will be assessed and mapped in detail. This included habitat type, cover, substrate composition, riparian vegetation, temperature, oxygen concentration, pH, and conductivity.

Fish will be captured using Gee traps, baited with salmon roe, set for a 24 hour period. Fish collected will be identified to species, marked with a caudal fin clip, and measured for length and weight. DNA and scale samples will also be collected from a subsample of fish. The sample area will be isolated using barrier nets in order to provide a more accurate population estimate.

After about 3 days from the initial sampling period, traps will be reset at the same locations. This will provide mark-recapture statistics needed to estimate population size.

Benefits and Deliverables

A technical report will completed after fieldwork is finished and supplied to FsRBC and DFO. Expected benefits are improved sock assessment information for Suskwa River coho, mapped distributions and critical off-channel coho habitat and recommendation for future enhancement opportunities. The local community will see stewardship opportunities and employment benefits through these activities. Providing current fisheries management activities are successful, an abundant return of coho salmon to the Suskwa River will be a benefit to the resource and resource users.