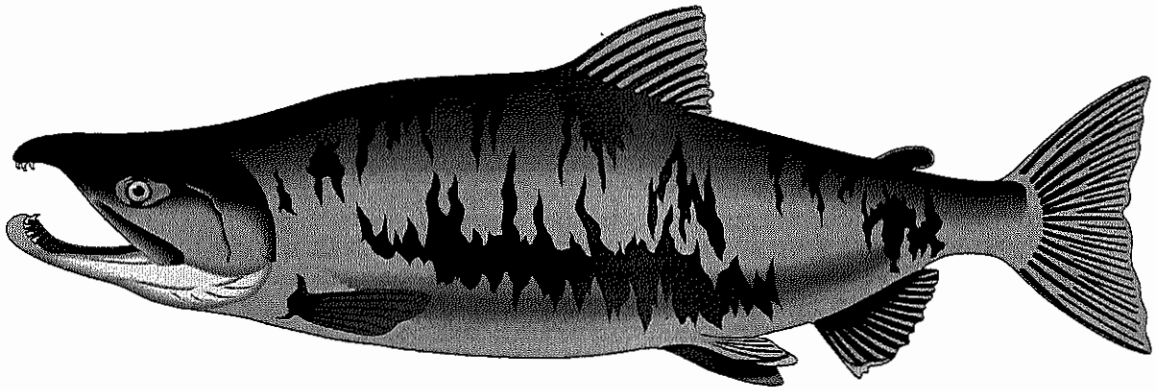
Bulkley River
Fish Fence
1996



Funded by Fisheries and Oceans Canada

Co-ordinated by the Community Futures Development Corporation of Nadina

Data collected by:
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Executive Summary

Returning Coho stocks were relatively good this year, although still only a fraction of what they were 5-10 years ago. In all, a total of 170 Coho were processed, with approximately 70 being caught with a seine net below the fence and 100 passing through the trap. This compares favourably with last year, when not a single Coho came into the trap and only 39 were caught below the fence.

It is believed that the higher water levels are a major factor in the rise of returning Salmon this year. With a heavy snowfall last Winter, plus significant precipitation in September and October of this year, flows continued to be high. Only during the middle of August was the flow below 10 inches; in 1995, flow levels were below this figure for nearly all of September and October.

This year the fence was fully installed on August 29, with the first Coho entering the trap on September 5. There was a fairly even distribution of Coho entering the trap throughout the time period, with the two peaks occurring on September 7th and October 10th; 20 and 35 Coho respectively.

The actual number of Coho coming up the Bulkley is slightly higher than the above figure as it is known that several Coho entered the trap and swam out again; and the water flowed over the top of the fence on four occasions: three times due to leaf build-up, and once due to ice build-up (all coupled with very high flow levels).

The fence itself is in a poor state of repair with several panels destroyed, and many more that need joints re-welded. Also the supporting 'A' frames are showing signs of deterioration; one is starting to lean over towards the water, allowing silt and ice-build up to get behind it. There has been discussion over the year about improving the design, so that maintenance can be carried out more easily, and the fish would be more attracted to enter the trap. This may be an opportune time to reassess the Bulkley River Fish Fence so that this very important salmon data collection station within the Skeena watershed can continue to provide us with valuable information in the years ahead.

Project Report

The Fence

The Upper Bulkley River Coho assessment fence is located approximately 6km. upstream from the Morice River confluence. The fence is constructed of aluminum and consists of 20 panels, an 'I' beam and a walkway. The fence stretches across the width of the river at right-angle to both banks. It is suspended on a series of cables and pulleys that allow it to be raised or lowered to meet changing water levels.

This year there was little vandalism damage to the structure, although repairs had to be made to the door to the storage area, and a new lock was installed. One of the five pulleys had been stolen and was replaced. Three of the fence panels had to be welded and the main beam had numerous fractures in existing joints. Rather than re-welding these, it was believed it would be more durable to use bolts.

The fence was installed on August 29, 1996. Houston Forest Products donated several sheets of white Teflon material that were installed along the case of the trap itself. This led to much improved visibility.

The metal walkway was not used this year, but instead several scaffolding planks were secured to the cross-beam to provide a platform to work-off whilst the leaves and other debris were cleared from the fence. This set-up worked well, and only once was one of these planks washed off the supports due to high water.

The fence itself was monitored each and every day from August 29th to November 1st (see Appendix 1 for detailed log). The river was walked on several occasions, covering the area from the confluence with the Morice River up to the CN Bridge east of Houston. Many of the smaller creeks up stream (around Uplands, Perow and Topley) were also covered; monitoring spawning salmon and checking for beaver activity. Due to the consistently high water levels there was very little beaver activity that was hindering the migration of the salmon stocks. One fish head was collected with a coded wire tag, and this was sent away for examination.

Fish Count

The first positive identification of Coho's entering the trap occurred as early as September 5th. These fish, however swam out of the entrance before a wooden 'plug' was designed to stop them from doing this.

The rains came relatively early on in the project, with the water level rising nearly 10 inches in several days during the start of September, encouraging the salmon to enter the trap. On September 7th alone, 20 Coho came into the trap, some which were transported to Toboggan Creek Hatchery.

Technicians from Toboggan Creek Hatchery seined the pool below the fish fence on several occasions in order to capture brood stock. This was done on September 24th and 26th with a total of 62 Coho being recovered in this fashion. The remainder came through the trap.

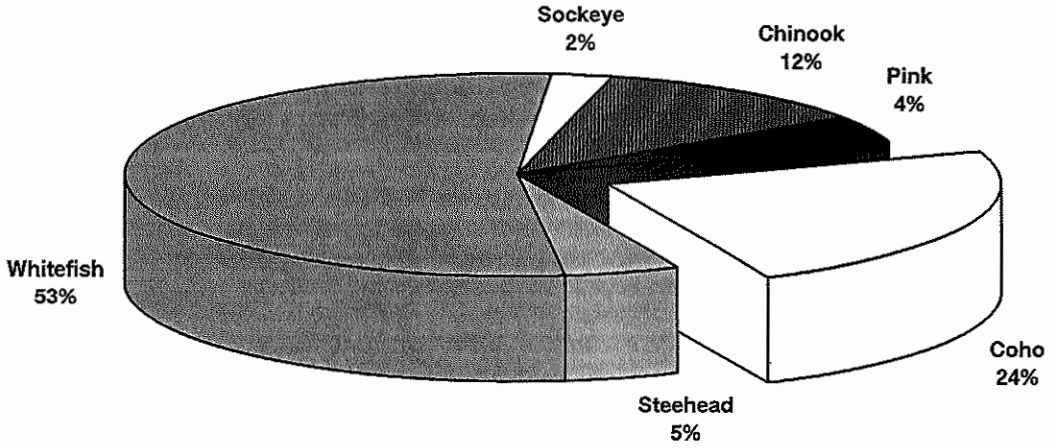
The water level remained relatively high for the remainder of the project time period, with another group of Coho entering the trap - this time 35 - on October 10th. In all 170 Coho salmon were marked and sampled this year though the Bulkley River Fish Fence.

Two other fish species should be noted. The local chapter of the Steelhead Society stated that they had not witnessed Steelhead coming through the trap in all the years that they operated the fence; this year 34 Steelhead were monitored coming through the trap. Of concern to the Coho stock is the amount of Whitefish entering the trap. 385 were processed, with an average length of approximately 11 inches. In addition to this hundreds more smaller ones were witnessed swimming through the bars of the trap or the fence itself.

A full break-down of the fish species entering the trap (or being netted below the fence) is shown below:

Sockeye	Chinook	Pink	Chum	Coho	Steelhead	Whitefish
17	85	29	0	170	34	385

Figure 1
Fish Species by Percentage through the Fish Fence



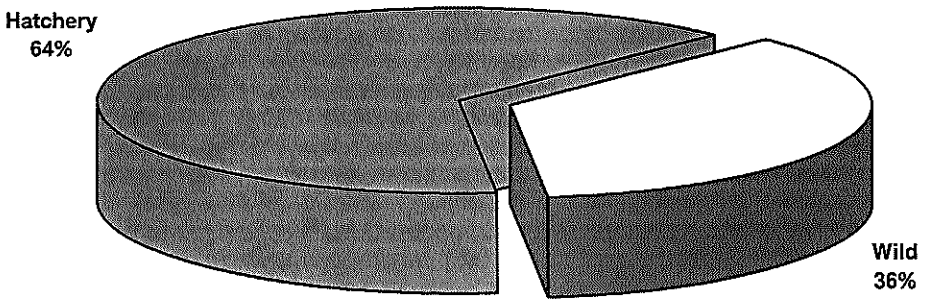
Coho Statistics

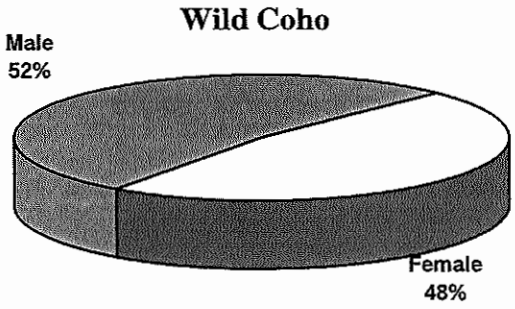
The breakdown of the Coho statistics coming through the fence (and being netted in the pool) is shown in the table and in Figure 2 below. Last year approximately half of the Coho caught were hatchery stock; this year 64% of those marked and sampled were reared in this manner. Additionally, many of the wild stock may be off-spring of hatchery stock. All of this points to the fragility of the Coho run in the Upper Bulkley River, and the continuing importance to enhance the Coho stock through the Salmonid Enhancement Program.

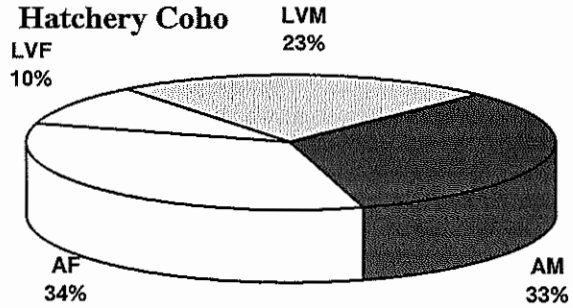
Two Coho that were marked and sampled at the fish fence, had already been caught and marked in Prince Rupert. (See Appendix II)

Wild		Hatchery	
Female	29	Left Ventricle Female	11
Male	32	Left Ventricle Male	25
		Adipose Female	36
		Adipose Male	37
TOTAL	**61**	**TOTAL**	**109**

Figure 2 Coho Caught at the Fish Fence



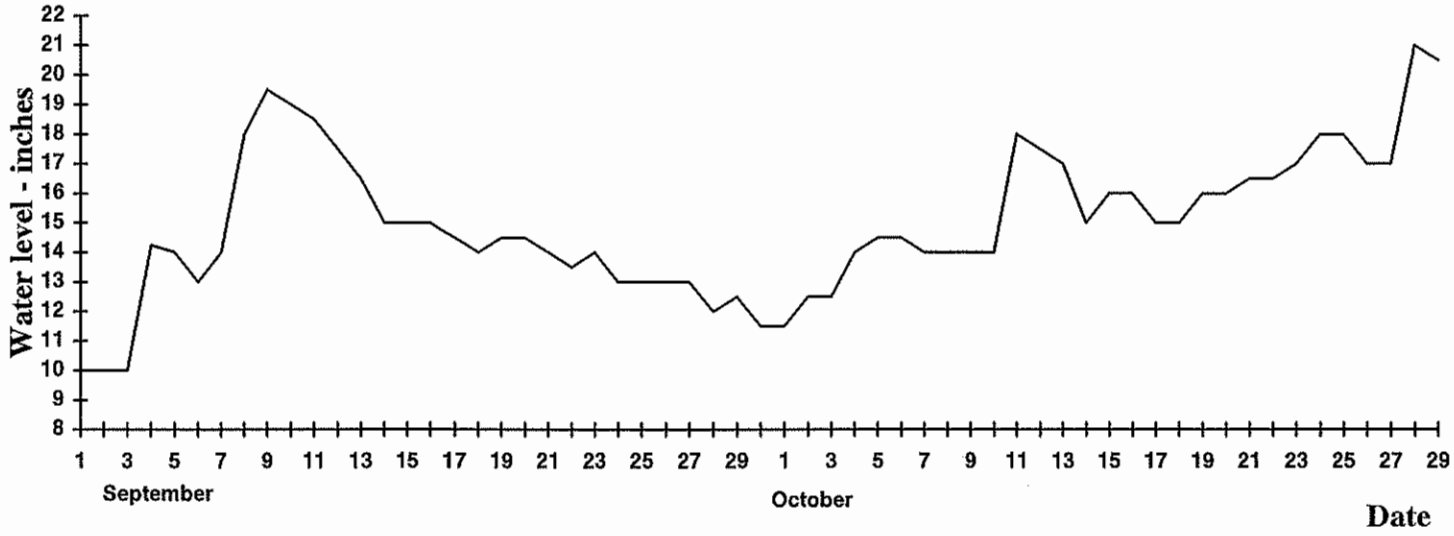


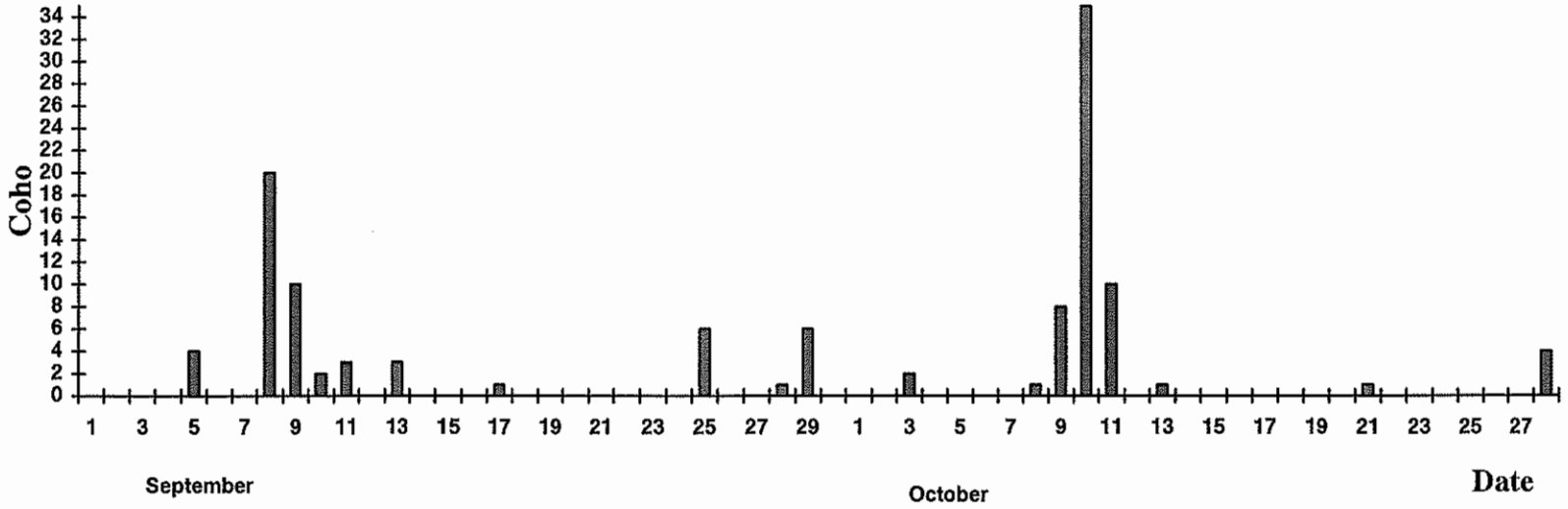


Water Level

The water levels were not recorded every day but the graph below provides an indication of when significant rainfall occurred. Generally the Bulkley River would rise (at the fish fence) approximately two days after heavy rain within the watershed. All the water levels were recorded on the sill, on the upstream side of the fence. With days of heavy leaf build-up on the fence, water levels were recorded *after* the fence was cleaned and the level allowed to fall.

When this is compared with the migrating salmon entering the trap, a clear correlation can be seen between the two. NB: The migrating Coho numbers are only those entering the trap; it does not include those that were recovered through seining the pool below the fence.





NB: The Coho count in the above graph only includes those entering the trap; not those seined below the pool. Those Coho which entered the trap on September 5th escaped through the entrance. During leaf build-up the water level measurement was taken after the fence was cleaned and the level allowed to settle..

The Fish Fence

The fence is now in a poor state of repair; due to ice pressure, 2 of the panels will have to be completely rebuilt, plus another 9 have joints to be welded.. There is also concern about the supporting 'A' frames on both sides of the river, but particularly the one on the north side. There has been some movement in the structure and it is believed that silt could be building up behind it and pushing it further into the river. Ice pressure over the winter may accelerate the process.

The flipping of the fence on November 1st also caused some damage to the wooden sill. At the beginning of this project, several planks of this sill were missing and were replaced; however the remainder of the wood on the sill is generally very soft and rotten, and the majority may need replacing next year.

There has been discussions over the years about the design of the fence; particularly with reference to it going straight across such a wide stretch of water where flows can fluctuate greatly. The design could also be improved to allow a greater flow of water through the trap, encouraging more Coho to enter. This may, therefore, be an opportune time to re-evaluate the design of the fence for the 1997 Coho run.

The panels have been placed in safe storage within the Ministry of Forests compound in Houston. The MoF have agreed to store the fence until the summer period, on the condition that access is not required to it over the winter months. Other parts of the equipment, including the winch, broom, bolts, pulley etc. are being stored at the Community Futures office. Everything was cleared out of the storage room at the fish fence, and the lock was removed from the door to discourage vandalism.

Wages and Hours of Work

Due to the requirements of the project, the two fish-fence staff worked flexible hours. Whilst the fence was in operation (between August 29th and November 1st) the trap and the fence was attended to on a daily basis; usually twice a day. During leaf build-up on the river, the fence was attended to on a more frequent basis - even during the night - in an attempt to keep the fence from flipping over or water breaching the top. The two workers always worked together for safety considerations.

Several volunteer workers were used to facilitate the installation and removal of the fence.

In addition to maintaining the fence and marking and sampling the migrating Coho, the workers walked the river above and below the fence to identify fish activity and to monitor beaver dams. Due to high flows this year the beaver dam activity on the main river was minimal.

Over the length of the project, the fish fence workers put in 77 days of work, at an average of 6.3 hours per day. The wage rate was the same for both workers.

485.5 @ $10 /hr x 2 = $9,710; plus 4% holiday pay @ 388.4 = $10,098.4

Appendix 1 provides a detailed report of the daily activities carried out by the fish fence workers.

Appendix I

Fish Fence Workers Daily Log

Aug. 6/96 (4 hrs)
Cleaned up around the fence site
Observed 1 chinook at fence

Aug. 7/96 (5 hrs)
Repaired door in shed and replaced old broken lock set
Started cleaning out the fish trap, silt and debris has accumulated on the bottom

Aug. 8/96 (8 hrs)
Repaired broken sections of the fence boardwalk
Replaced missing or broken boards, cleaned out trap

Aug. 14/96 (5 hrs)
Brought the gate sections from compound yard to fence site. Took three pieces to Bodnar for welding and fabrication, walked section of river from Pleasant Valley Bridge west of Houston to hay fields below Lieuwen West Road
No beaver dams
Observed 1 chinook at fence

Aug. 15/96 (6.5 hrs)
Worked on main beam, drilled holes and installed nuts and bolts. Improved water flow on tap

Aug. 16/96 (8 hrs)
Finished work on main beam. Walked section of river from sewage outflow to Pleasant Valley Bridge
1 beaver house (possible active)
44 chinook salmon observed spawning
4 chinook at fence

Aug. 22/96 (8 hrs)
Improved water flow to trap. Walked section of river from hay fields at Lieuwen West Road to confluence at Morice River. Several pink salmon spawning in lower 1 km of Little Bulkley. Angler, caught and released 1 Coho at mouth

Aug. 23/96 (8 hrs)
Cleaned out trap, picked up gate sections from Bodnar. Walked section of river from fence to sewage outflow.
No beaver dams
33 chinook salmon observed spawning

Aug. 26/96 (8.5 hrs)
Re-adjusted tension on main cable, installed main beam and 15 gates
**Water level 10" (on sill)

Aug. 27/96 (8 hrs)
Installed rest of gates, except one for chinooks. Re-adjusted clamps and lined up fence.

Aug. 28/96 (6 hrs)
Worked on fence, cleaned up site

Aug. 29/96 (8 hrs)
Worked on fence, installed last gate. Assisted with data retrieval on Richfield Creek

Aug. 30/96 (6 hrs)
Houston Forest Products donated Teflon for bottom of holding trap. Installed Teflon for much improved visibility

Sept. 3/96 (8 hrs)
Removed debris from fence. Walked section of river from fence upstream to CN bridge east of Houston.
Beaver activity ¼ km upstream from Pleasant Valley overpass
No obstruction*
Fish activity at pool below fence
5 chinook washed down onto fence/all wild***tally sheet will accompany final report.

Sept. 4/96 (8 hrs)
Cleaned up entire site, in which we pruned some nearby trees, built a fire & burned all debris & garbage collected around the site. Cut head off adipose male.
**Water level 14 ¼" up 4 ¼" due to rains early September
*1 fish in the trap, but could not identify

Sept. 5/96 (8 hrs)
Lost 4 Cohos, they must have swam out the entrance way through the night. Cut &installed plywood dividers for the trap, we were also instructed on how to make a "plug" for the entrance. Received a dip net, tools & scale sample booklets from Randy at the hatchery.

Sept. 6/96 (7 hrs)
Removed pinks and whitefish from trap, made second divider
Several fish jumping in pool below fence
*Water level 13"
7:00 p.m. Cohos entering, moved them to upper part of trap

Sept. 7/96 (4 hrs)
Secured more Coho in trap, contacted hatchery for instruction. 6:00 p.m. took inventory
20 Coho

Sept. 8/96 (6 hrs)
Observed sockeye above fence, more Coho entering
*Water level 17 ½"
4:30 p.m. met Randy at the fence, transferred 12 Coho to hatchery, marked and sampled 8 more.
*Water level 18" (very dirty)

Sept. 9/96 (9.5 hrs)
Transferred 4 Coho to hatchery, marked & sampled 6 more
*Water level 19 ½"
7:00 p.m. monitored trap, pinks and whitefish
1 Coho

Sept. 10/96 (8.5 hrs)
More Coho entered the trap, contacted hatchery
Transported 2 Coho to hatchery
4 Coho escaped, they must have leapt over both dividers and swam out the entrance way. Checked over entire trap and plugged any possible escape routes.
*Water level 19"
7:30 p.m. 2 Coho in trap

Sept. 11/96 (7 hrs)
Marked and sampled 2 Coho, worked on fence
*Water level 18 ½"
7:00 p.m. 1 steelhead in the trap (1.5 hrs)

Sept. 12/96 (8 hrs)
1 squawfish and several whitefish in the trap
Several Coho observed in pool below fence, pinks entering trap
*Water level 17 ½"

Sept. 13/96 (8 hrs)
Marked and sampled 3 Coho, whitefish population is massive
*Water level 16 ½"

Sept. 14/96 (.5 hr)
Several whitefish

Sept. 15/96 (1 hr)
More whitefish, Coho seem to be holding in the pool
Water is clearing up

Sept. 16/96 (6 hrs)
1 steelhead and several whitefish in trap
*Water level 15"
7:00 p.m. marked and sampled 1 Coho, took photo of steelhead and released (1 hr)

Sept. 17/96 (6 hrs)
Mapped out 3 chinook reds for further data this winter. Locations at Bulkley River above fish fence, McQuarrie Creek and Richfield Creek
*Water level 14 ½"
7:00 p.m. 1 steelhead and several whitefish in trap (1 hr)

5 Sept. 18/96 (4 hrs)
Several Coho and other species in pool, only whitefish entering trap, water is clear. *Water level 14"
6:00 p.m. 57 whitefish (hundreds of smaller whitefish swim right through the bars on the fence) (1.5 hrs)

Sept. 19/96 (5 hrs)
2 whitefish and 1 pink
*Water level 14 ½"

Sept. 20/96 (4 hrs)
Coho still holding in pool, water is very clear
6:00 p.m. 4 whitefish (1.5 hrs)

Sept. 21/96 (2 hrs)
4 whitefish
*Water level 14"
6:00 p.m. 4 whitefish (1.5 hrs)

Sept. 22/96 (1 hr)
3 whitefish
*Water level 13 ½"

Sept. 23/96 (5 hrs)
3 whitefish, leaves gathering in large amounts on fence. Water is very clear.
*Water level 14"

Sept. 24/96 (9 hrs)
We seined the pool and recovered 41 Coho, 20 went to Toboggan Creek Hatchery. Marked and sampled 11 Coho.
3 steelhead in trap, awaiting tags.
*Water level 13"

Sept. 25/96 (6 hrs)
Marked and sampled 6 Coho
6:30 p.m. 55 whitefish (1 hr)

Sept. 26/96 (8 hrs)
Marked and sampled 4 Coho, released 3 steelhead, 2 whitefish
1:00 p.m. Seined pool, recovered 21 Coho, 8 went to hatchery. Marked and sampled 13 Coho
4 sockeye (one was a right ventril clip)
2 steelhead (tagged and released)
WF #MOE N03620
WM #MOE N03622
7:00 p.m. 15 whitefish, lots of leaves (1 hr)
*Water level 13"

Sept. 27/96 (4 hrs)
2 whitefish
Met two engineers from DFO, discussed potential improvements to fence, trap, and water flow redirection.
7:00 p.m. 23 whitefish (1 hr)

Sept. 28/96 (2 hrs)
Holding 6 Coho in trap, contacted hatchery
2 whitefish
*Water level 12"
7:00 p.m. 1 more Coho in trap (1 hr)

Sept. 29/96 (2 hrs)
Transported 6 Coho to hatchery
Marked and sampled 1 Coho
*Water level 12 ½"
7:00 p.m. (1 hr)

Sept. 30/96 (10 hrs)
Went to hatchery, looked around and saw their fence. We assisted in moving 40,000 Bulkley River Coho fry to one of the holding ponds outside. We also helped in anaesthetising 48 Bulkley Coho (ours) for the purpose of determining spawn readiness.
Checked and cleaned fence
*Water level 11 ½"

Oct. 1/96 (5 hrs)
Installed 2x10 planks on top of fence, for better and safer mobility
6:30 p.m. (1 hr)

Oct. 2/96 (2 hrs)
Holding 2 Coho in trap, rained all night!!
*Water level 12 ½"
12:00 p.m. (1 hr)
6:30 p.m. large amounts of leaves on fence (1 hr)

Oct. 3/96 (2 hrs)
Water is darkening, leaves coming downstream steady, rained most of the night.
*Water level 12 ½"
1:00 p.m. (1 hr)
6:30 p.m. Marked and sampled 2 Coho (1 hr)

Oct. 4/96 (2 hrs)
1 whitefish
Brenda Donas from DFO was at the fence site, we discussed previously mentioned topics again.
*Water level 13"
1:00 p.m. (1 hr)
6:00 p.m. 39 whitefish (1.5 hrs)
*Water level 14"

Oct. 5/96 (1 hr)
Lots of leaves
*Water level 14 ½"
1:00 p.m. (1 hr)
6:00 p.m. pool below the fence very active (1 hr)

Oct. 6/96 (4 hrs)
Leaves still coming downstream
Tagged steelhead died #MOE N03622

Oct. 7/96 (2 hrs)
*Water level 14"
1:00 p.m. (1 hr)
3:30 p.m. (7 hrs)

Oct. 8/96
12:00 a.m. (1 hr)
3:30 p.m. (1 hr)
7:00 a.m. (1 hr)
8:00 a.m. Drove to the hatchery, helped with egg take and fertilization of the Bulkley Coho stock. (7 hrs)
6:30 p.m. (1 hr)

Oct. 9/96 (3 hrs)
Marked and sampled 8 Coho
3:00 p.m. (3 hrs)
6:00 p.m. (1 hr)
9:00 p.m. (1 hr)

Oct. 10/96 (11 hrs)
Water flowed over top of the fence, large amounts of leaves floating down.
Hatchery returned 32 Coho
Marked and sampled 66 Coho
Randy and Bernard helped with the leaves.

Oct. 11/96
2:00 a.m. Fence was under water, too many leaves. Coho may have jumped the fence. (1 hr)
7:00 a.m. Fence under water again. Marked and sampled 10 Coho, 10 steelhead, 3 sockeye, 3 whitefish, 1 sucker, 1 dolly varden. (7 hrs)
6:00 p.m. (1 hr)
*Water level 18"
10:00 p.m. (1 hr)

Oct. 12/96
7:30 a.m. Water just flowed over top of fence 2 hrs)
11:30 a.m. (2 hrs)
6:00 p.m. 4 steelhead, 3 whitefish
10:00 p.m. (1 hr)

Oct. 13/96 (1.5 hrs)
Marked and sampled 1 Coho
3:30 p.m. (1 hr)
6:30 p.m. (1 hr)

Oct. 14/96 (1.5 hrs)
3:00 p.m. (1.5 hrs)
*Water level 15"
6:00 p.m. (1 hr)

Oct. 15/96 (3 hrs)
3:00 p.m. (1 hr)
6:30 p.m. 2 whitefish, lots of leaves floating down. (1 hr)
*Water level 16"

Oct. 16/96 (4 hrs)
1:00 p.m. 1 white fish (1 hr)
6:00 p.m. (1 hr)

Oct. 17/96 (2 hrs)
Have not observed any fish activity for a few days, leaves have slowed down.
*Water level 15"
1:00 p.m. (2 hrs)
6:00 p.m. (1 hr)
SNOW

Oct. 18/96 (2 hrs)
Snowed all night
1:00 p.m. (1 hr)
6:00 p.m. (1 hr)

Oct. 19/96 (1 hr)
1:00 p.m. 3 whitefish (1 hr)
*Water level 16"
6:00 p.m. (1 hr)

Oct. 20/96 (3 hrs)
Cleaned fence
*Water level 16"

Oct. 21/96 (5 hrs)
DFO hosted two groups of school kids at the fence. They did an egg take for school project.
Marked and sampled 1 Coho, 2 whitefish
*Water level 16 ½"
6:00 p.m. (1 hr)

Oct. 22/96 (3 hrs)
Observed 1 male Coho jumping in the pool, 4 whitefish
1:00 p.m. (1 hr)
6:00 p.m. 2 whitefish (1 hr)

Oct. 23/96 (2 hrs)
12 whitefish
*Water level 17"
1:00 p.m. 4 whitefish (1 hr)
6:00 p.m. (1 hr)

Oct. 24/96 (3 hrs)
2 whitefish
1:00 p.m. (1 hr)
6:00 p.m. 9 whitefish (1 hr)
*Water level 18"

Oct. 25/96 (6 hrs)
Checked creeks around Uplands, Perow and Topley for any signs of Coho. No beaver dams to worry about at this point because of extremely high water levels.
6:00 p.m. (1 hr)

Oct. 26/96 (2 hrs)
3 whitefish
*Water level 17"
5:00 p.m. (2 hrs)

Oct. 27/96 (2 hrs)
5:00 p.m. (1 hr)

Oct. 28/96 (5 hrs)
*Water level 20 ½"
1 dead AM Coho stuck in fence, marked and sampled 1 Coho, leaves coming down in big patches.
4:00 p.m. (2 hrs)
*Water level 21" and dirty
1 Coho in trap, too dark to proceed

Oct. 29/96 (3 hrs)
High dirty water and lots of leaves, fence was just under water. 1 Coho from trap swam out.
1:00 p.m. (2 hrs)
*Water level 20 ½"
Dead WF washed down on to fence

Oct. 30/96 (4 hrs)
Ice build up is a problem. 1 uncounted WF washed down, we scaled and sampled it. Water dropping down, but still dirty.
2 whitefish
3:00 p.m. Cleaned ice and leaves (1.5 hrs)

Oct. 31/96 (8 hrs)
Fence was completely covered under ice. Chain snapped under pressure on #5 pulley. Went to Owen Creek and looked around at their work. We observed no Coho in Owen Creek, there were some reds, but probably pinks or chinooks. The side channel has not yet been diverted.
4:30 p.m. Cleaned Bulkley fence

Nov. 1/96 (7 hrs)
The fence flipped over under pressure from ice and leaves. 2 panels sustained extensive damage, 8 or 9 panels need welding. Part of the sill was also damaged. We removed 16 panels and notified Nadina Community Futures.

APPENDIX II

Coho Marked and Sampled at Fish Fence

DATE	TYPE	LENGTH	WEIGHT	NUMBER	
08/09/96	AF				
08/09/96	AF				
08/09/96	WM				
08/09/96	WM				
08/09/96	AF				
08/09/96	WF				
08/09/96	WF				
08/09/96	WM				
08/09/96	WM				
08/09/96	AF				
08/09/96	AF				
08/09/96	AF				
08/09/96	LVF	15"		65208	
08/09/96	AM		8 lbs.		
08/09/96	LVM		11 lbs.		
08/09/96	LVF		4 lbs.		
08/09/96	LVM		10 lbs.		
08/09/96	LVM		3 lbs.		
08/09/96	LVM		6 lbs.		
08/09/96	AM		6 lbs.		
09/09/96	AF				
09/09/96	WM				
09/09/96	WF				
09/09/96	WF				
09/09/96	AM		9 lbs.		
09/09/96	LVM	20"		65208	
09/09/96	AM		8 lbs.		
09/09/96	LVM	21"		65208	
09/09/96	AM		6 lbs.		
09/09/96	AF		6 lbs.		
10/09/96	WM				
10/09/96	WM				
11/09/96	AM		9 lbs.		
11/09/96	LVF	20"		65208	
11/09/96	AM		2 lbs.		
13/09/96	LVM	19"		65208	
13/09/96	WM	23"		65210	
13/09/96	AF		3 lbs.		
17/09/96	WF	19"		65210	
24/09/96	WF				
24/09/96	WF				
24/09/96	WM				

24/09/96	WF				
24/09/96	AF				
24/09/96	WF				
24/09/96	WF				
24/09/96	WM				
24/09/96	AF				
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24/09/96	WF				
24/09/96	WF				
24/09/96	WF				
24/09/96	AM		8 lbs.		
24/09/96	LVF	19"		65210	
24/09/96	LVF	19"		65210	
24/09/96	LVM	21"		65210	
24/09/96	LVM	22"		65211	
24/09/96	AM		7 lbs.		
24/09/96	AM		9 lbs.		
24/09/96	AM		4 lbs.		
24/09/96	LVF	22"		65211	
24/09/96	AM		9 lbs.		
24/09/96	LVM	20"		65211	
25/09/96	AM		8 lbs.		
25/09/96	AM		8 lbs.		
25/09/96	LVM	19"	7 lbs.		
25/09/96	LVM	18"			
25/09/96	AM		7 lbs.		
25/09/96	LVM		7 lbs.		
26/09/96	AM		8 lbs.		
26/09/96	LVM	21"		65211	
26/09/96	AM		7 lbs.		
26/09/96	AM		7 lbs.		
26/09/96	WM				
26/09/96	AM				
26/09/96	WM				
26/09/96	WFS			MOEN03620	
26/09/96	WF				
26/09/96	AF				
26/09/96	WMS			MOEN03622	
26/09/96	WM				
26/09/96	WM				
26/09/96	WM				

26/09/96	AF		6 lbs.		
26/09/96	LVM	19"		65211	
26/09/96	AM	22"	10 lbs.		
26/09/96	LVM	18"	7 lbs.		
26/09/96	WF	21"		75951	
26/09/96	AM		9 lbs.		
26/09/96	AF		6 lbs.		
26/09/96	AM		9 lbs.		
26/09/96	AF		7 lbs.		
26/09/96	AF		6 lbs.		
26/09/96	AF		6 lbs.		
26/09/96	AF		6 lbs.		
26/09/96	AF		5 lbs.		
28/09/96	AM		9 lbs.		
29/09/96	WM				
29/09/96	WM				
29/09/96	WF				
29/09/96	WF				
29/09/96	WF				
29/09/96	WF				
03/10/96	WF	22"		75951	
03/10/96	WM	23"		75951	
08/10/96	WM	20"		75951	
09/10/96	AF		6 lbs.		
09/10/96	WM	21"		75951	
09/10/96	LVM	18"	4 lbs.		
09/10/96	LVM	21"	8 lbs.		
09/10/96	WM	19"		75952	
09/10/96	LVM	17"	4 lbs.		
09/10/96	AM	19"	7 lbs.		
09/10/96	WF	20"		75952	
10/10/96	LVM	19"		75952	
10/10/96	AM	21"	9 lbs.		
10/10/96	WM	17"		75953	
10/10/96	WF	20"		75953	
10/10/96	AF	17"	7 lbs.		
10/10/96	AM	19"	9 lbs.		
10/10/96	LVM	20.5"	9 lbs.	75953	
10/10/96	LVM	18"	7 lbs.		
10/10/96	WM	18"	7.5 lbs.	75953	
10/10/96	LVF	21"	8 lbs.	75954	
10/10/96	LVF	20"	7.5 lbs.		
10/10/96	WM	21.5"	10 lbs.	75954	
10/10/96	AM		3.5 lbs.		

10/10/96	LVM	18"		PRFVOA 5348	
10/10/96	LVM	18"	8 lbs.		
10/10/96	AM		3 lbs.		
10/10/96	AF		6 lbs.		
10/10/96	AF		9 lbs.		
10/10/96	AF		8 lbs.		
10/10/96	WM	14"	3lbs.	75954	
10/10/96	WM	18.5"		75954	
10/10/96	AF		7 lbs.		
10/10/96	WM	20.5"	9 lbs.	75954	
10/10/96	AM		7 lbs.		
10/10/96	AM		10 lbs.		
10/10/96	AF		12 lbs.		
10/10/96	LVF		9 lbs.		
10/10/96	LVF		8 lbs.		
10/10/96	AM		5.5 lbs.		
10/10/96	AM		8 lbs.		
10/10/96	AF		10 lbs.		
10/10/96	AF		9 lbs.		
10/10/96	AF		11 lbs.		
10/10/96	AM		8 lbs.		
10/10/96	LVF		8 lbs.		
11/10/96	AF	20"	7 lbs.		
11/10/96	AF	21"	8 lbs.		
11/10/96	WM		12 lbs.		
11/10/96	AF		8 lbs.		
11/10/96	AM		3 lbs.		
11/10/96	AM		2 lbs.		
11/10/96	AF		9 lbs.		
11/10/96	WF	16.5"			
11/10/96	AF		8 lbs.		
11/10/96	AM		3.5 lbs.		
13/10/96	LVM	18"	9 lbs.		
21/10/96	WF	20"		75962	
28/10/96	AM		3 lbs.		
28/10/96	WM	21"		75962	
28/10/96	WF	21.5"		75962	
28/10/96	WM	15.5"		75962	