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1999
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Bulkley River Fish Fence 1999



Funded by: Fisheries and Oceans Canada
Coordinated by: Nadina Community Futures

Data Collected by Tracy and Jim De La Mare
Report written by Angus Glass

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1.0 Executive Summary

This year's operation of the fence ran very smoothly with both good returns of Coho and favourable weather conditions. In all, a total of 1073 coho were processed, the vast majority of which entered the live trap box, although greater efforts were made this year with regards to seining.

In comparison to previous years, this was an exceptional year. The total of 1073 means that if the cumulative total was taken for coho numbers in the previous three years, and doubled, it would still be below this year's count.

The fence was in operation for a period of 9 weeks, every day, 24 hours per day between the dates of August 31, and November 2. Although Coho were processed throughout the duration of the project, it was a relatively earlier run than usual, and it is thought that a number of coho could have entered the system before the fence was installed.

The fence continues to be in a relatively poor state of repair, although there was no improvements required on the sill. It is anticipated that this will be the last year of operation of the existing structure.

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2.0 Background Information

2.1 The Fence

The Upper Bulkley Coho Assessment Fence is located 6 km upstream from the Morice and Upper Bulkley River Confluence. The fence is constructed of aluminum and consists of 20 panels, and an 'I' beam, stretching across the river at right-angles. There is a wooden sill (no part of which was replaced this year) running the breadth of the river and the fence can be lowered or raised by a series of pulleys and cables. As with the previous two years, the aluminum walkway was not installed as all cleaning of the fence was undertaken on the upstream side of the fence.

The supporting 'A' frame on the far side of the river continues to move and some minor adjustment was required to fit the panels in place. The chain link fencing and barbed wire worked well again, and no vandalism occurred to the fence, live trap box or the supporting structure. The trap box, probably due to the side panels being removed at the end of last year, had shifted away from the side and required being jacked back into place.

The trap box worked well this year although on a number of occasions fish were able to back out. A plywood sheet was placed at an angle across the trap box entrance which reduced such occurrences. At least one steelhead was observed swimming downstream the length of the trap and exiting through the entrance.

The fence was installed slightly earlier than in previous years. The first day the trap was fully operational and fishing was on August 31, 1999. It remained in operation without being laid flat, or being breached, for 62 full days, before being dismantled on November 2; a period of 9 weeks.

2.2 Safety

As with previous years, great attention was paid towards safety in the operation of the fence. This year, however, a number of improvements were made to enhance both the smooth running and safety aspects of operation. A swift water rescue company visited the site and provided safety and emergency rescue techniques to the staff (both permanent and casual) as well as recommendations to the operating procedures.

Improvements that were subsequently made to the site included handles to the inside of the trap box around the entrance and a safety-line running across the width of the river approximately 10 feet upstream of the fence. During higher water and night, the workers could then hook themselves onto this safety line. Where the cables fed into the winch hut, a series of 2x4's were placed so that in the event of a cables snapping the 'snaking' of the taught cable would be contained and injury minimized.

Also for this year dry suits and glow sticks were purchased to aid night work during higher flows. The glow sticks worked extremely well, and were not just used from a safety aspect but were also able to shed enough light to help workers identify and clear debris off the fence. More casual staff were employed at night when the leaf load

increased to provide the day staff with sufficient rest. This arrangement worked well and not once during the 9 week period was the fence in danger of being breached and letting coho through undetected.

Due to fears of recent years that the fence wasn't performing to its full potential and that it was acting as a barrier to fish rather than guiding them into the live fish trap, more effort was directed towards seining. Although more sets were made this year, the trap itself worked effectively. There were one or two occasions when coho were viewed rolling below the fence in the evening, and had not entered the trap by the next morning, but, generally, the trap worked well. 910 were caught by using the live trap box and 163 were caught by seining. This constitutes a 85% to 15% split.

2.3 River Conditions

Figure 1 shows water temperature. Ice build-up started at the end of October and the fence was removed on November 2. After this date warm weather again dominated, and the freeze up of the creeks did not occur until mid November.

For the first time in several years, the fence operated for the full term without it being breached, or having to be lain flat. This is in part due to extra help recruited for night work during heavy leaf load, but also due in part to weather conditions. The river was higher than usual at the very start (as can be seen in Figure 2) of the project compared to other years; this year for example there was no need to place boards across the breadth of the fence to channel more water into the trap. As can be seen in the diagram, the October rains did not occur and water levels went down throughout the duration of the project, rather than up. Leaf build up was used to direct some flow into the trap later on to encourage fish to enter the trap.

There was certainly no significant rainfall events causing water peaks as witnessed two years ago. There was some snowfall in the mountains in early-mid October which resulted in some higher flows in mid-late October, but nothing out of the ordinary.

Figure 1. Water Temperature

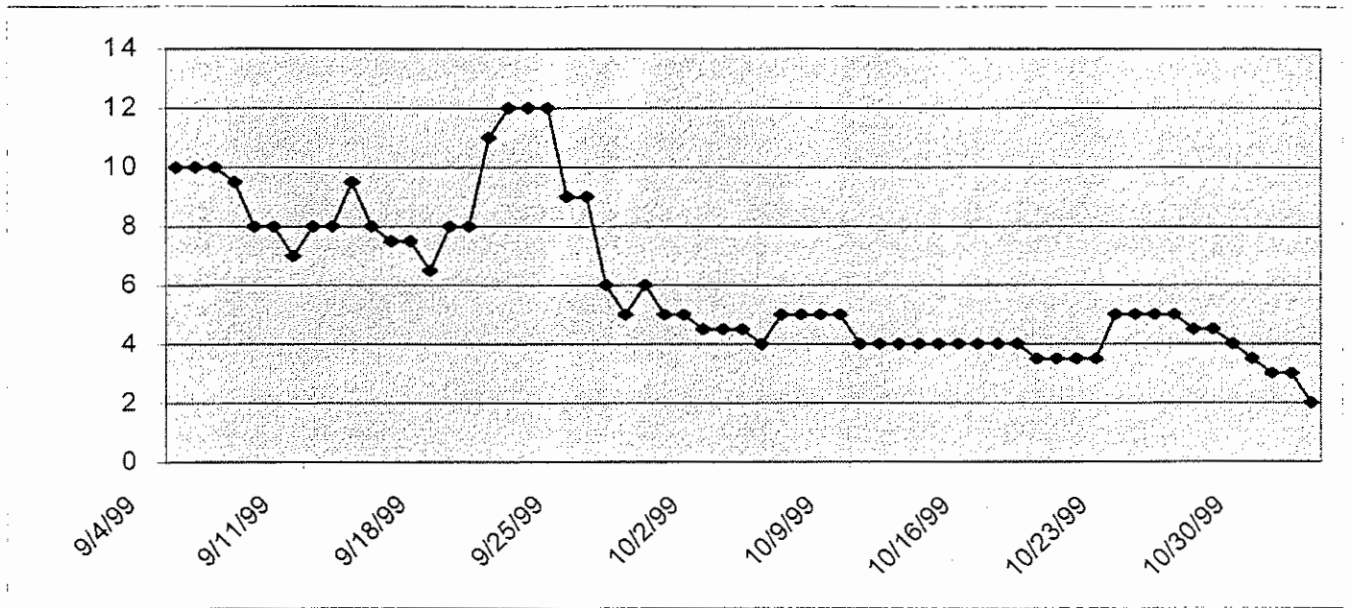
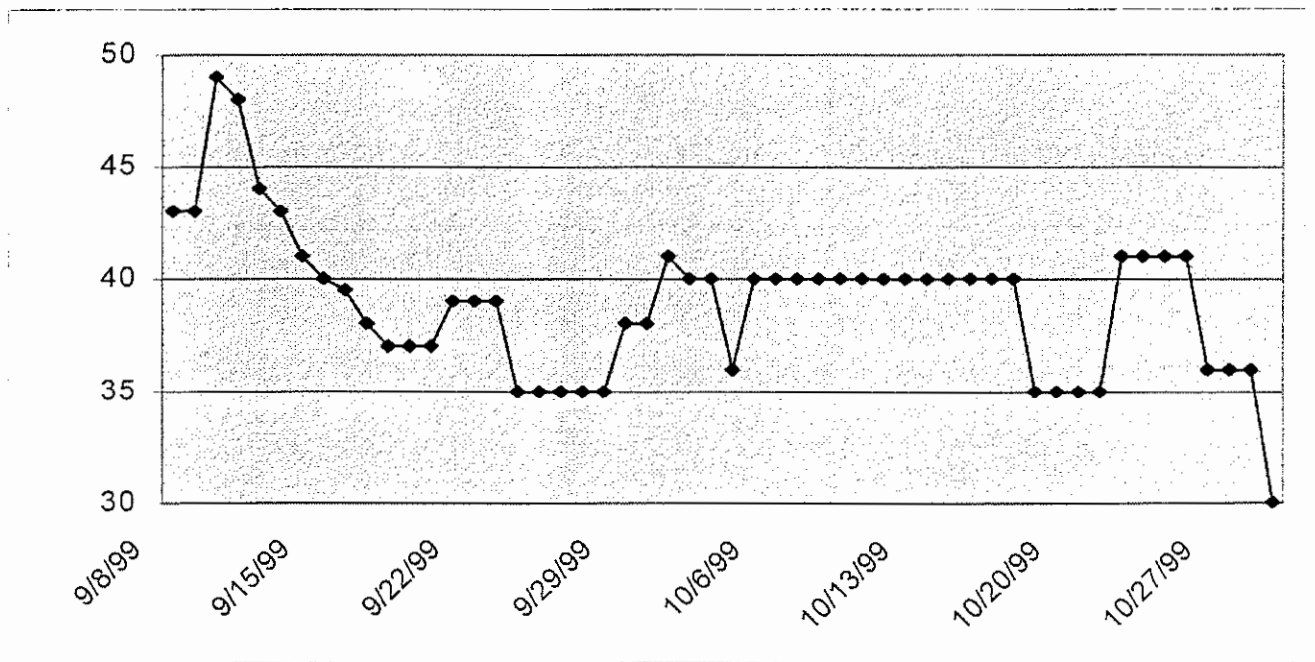


Figure 2. Water Level (cm's, at fence)



3.0 Methodology

The majority of fish were processed from the live trap box, rather than through seining. The trap was monitored at a minimum of two times per day, and often up to four and five times during a 24 hour period. Fish were caught in the trap using a soft mesh net so that stress and damage to the fish were kept to an absolute minimum.

The various measurements, samples and identifying marks were then taken. The most efficient method of collecting the data was to use three people in the process. In periods where there were higher numbers of fish in the trap it was necessary to employ four workers: one to catch the fish, two to hold the fish and take samples, and one to record the data. When scale samples were not recorded each fish would be handled (whilst being held in a large water container for the most part) for between 45 and 90 seconds. Taking scale samples added on another 45 seconds to a minute.

Scale samples were taken throughout the project period although there was a greater rate of scale sampling in the first 3 weeks in order to ensure that at least 125 coho were sampled. In the latter part, one scale book was filled every week so that samples were taken from a broad range of the run.

Length measurements of the coho were based on the post orbital hypural length (from the back of the eye to the caudal peduncle) using a soft roll tape measure. Note that steelhead measurements were fork length: from the tip of the nose to the centre of the fork on the tail. All weights were estimates.

If coho were to be transported to Toboggan Creek Hatchery for enhancement purposes they were taken to the upstream end of the live trap box which was partitioned off from the main area of the trap. The hatchery was then informed and would often be collected on the same day, or the next day.

Methods of collecting data on seined fish were exactly the same, although time spent handling was reduced due the number of people available (usually 6-7) to help. After the data was collected the coho (and steelhead) would be put in transfer bags (supplied by DFO) and transferred to the upstream side of the fence. All seining was done in the 60 metres immediately below the fence, seining the river-right two-thirds of the flow; pulling the coho towards a gravel beach on opposite side of the river from the trap entrance. The most effective method of seining (in terms of speed in getting the net set) was by using a small rowing boat situated below the fence, and unloading the net from the bow of the boat.

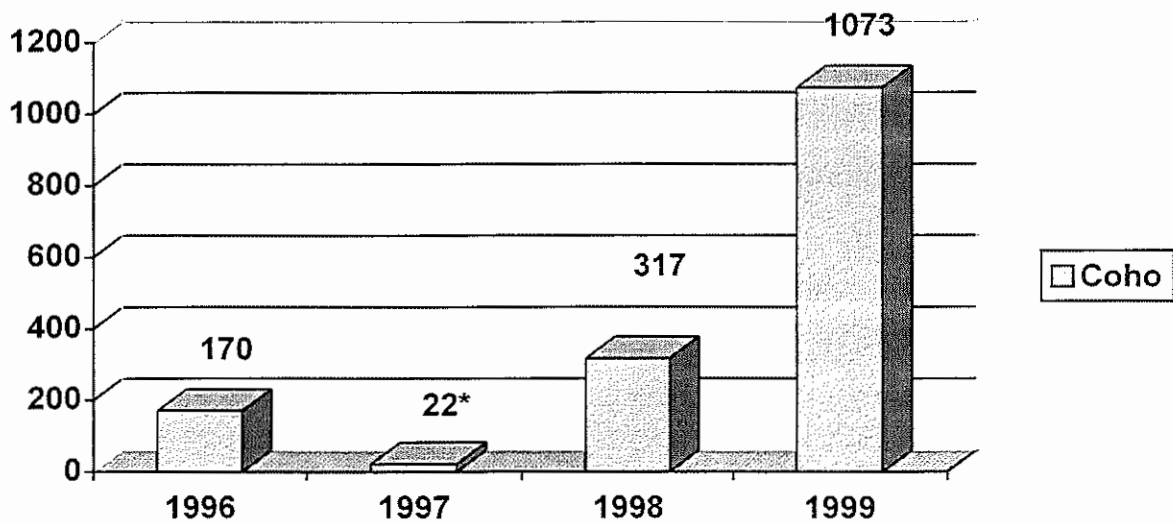
All data collected was frequently (about once a week) transferred on to a computer at the office of Nadina Community Futures.

4.0 Results and Discussion

4.1 Coho Run

The 1999 run of Coho for the Upper Bulkley system was by far the largest run in recent years. During the 9 weeks of operation the number of coho processed – both going through the live trap box and capture by seining – totaled 1,073. This represents a substantial increase over previous year as can be seen in Figure 3.

Figure 3: By Year Comparison of Coho.



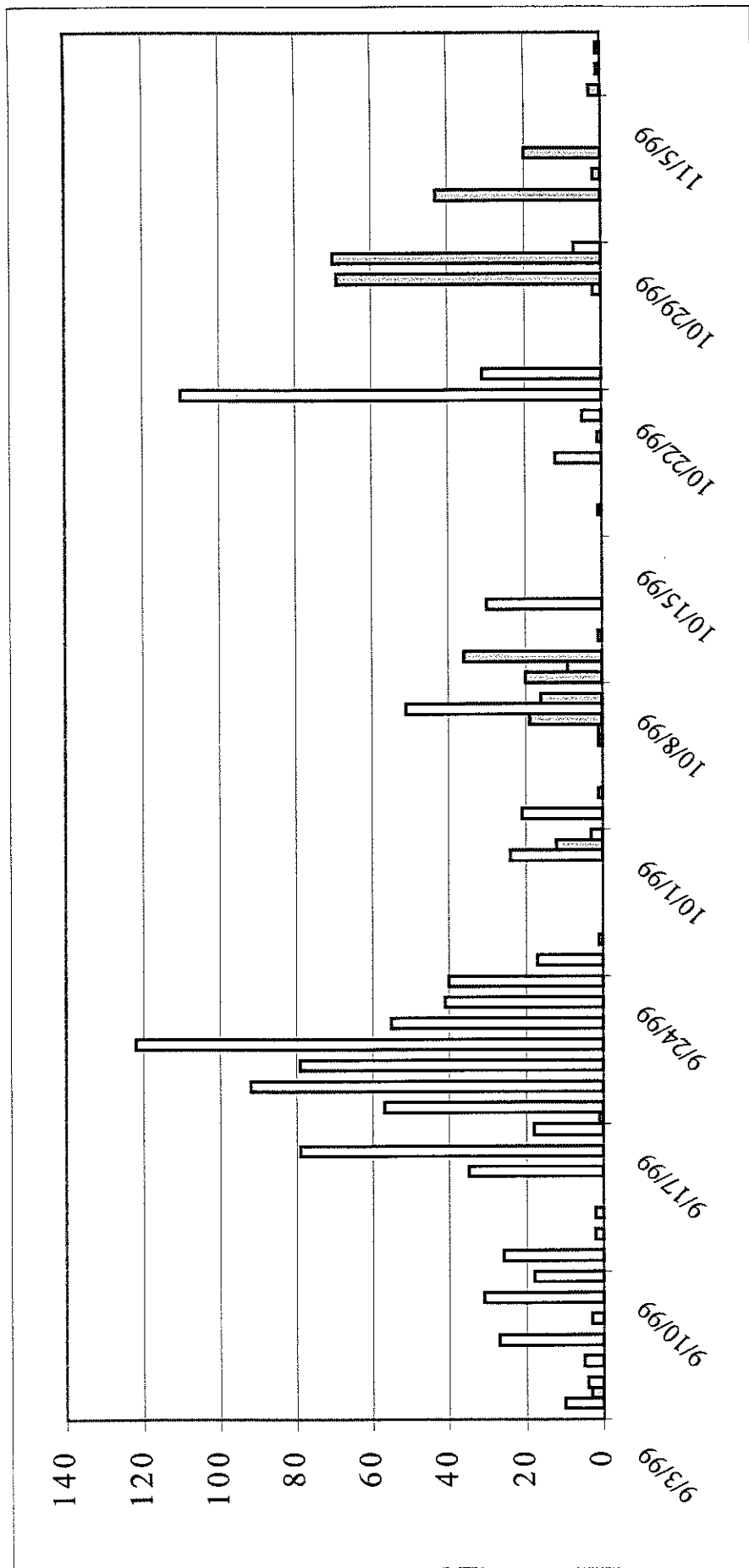
*Note that in 1997 this was an uncompleted count. The fence was laid flat after 6 weeks of operation due to extremely high water

The run itself was earlier than in most other years. It is not uncommon to wait several weeks into September for a run to come into the trap, but this year fish entered from the start. The fence was installed several days earlier than usual (it started fishing on August 30), and by September 15th, in just over two weeks of operation, 243 coho had been processed. This can be compared with only 22 coho in the first 6 weeks of operation two years previously.

This year the number of coho transported to the Toboggan Creek Hatchery for enhancement purposes totaled 170. All 170 fish were not used for enhancement purposes as the females were slow to ripen, and many of these fish were returned to the system prior to egg retrieval.

■ 1998 □ 1999

Figure 4, Coho processed by date: 1998 comparison with 1999.

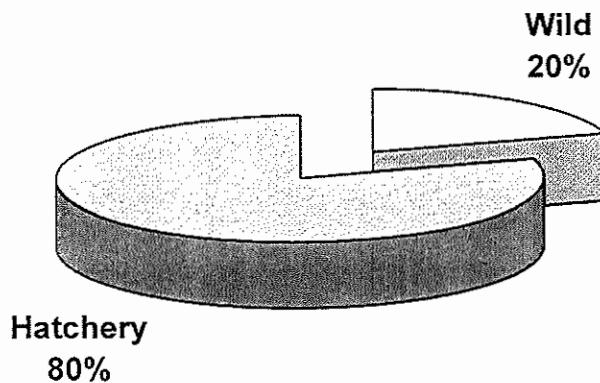


4.2 Hatchery and Unmarked Stock

Although total numbers were up for returning coho, the percentage of wild coho compared to hatchery stock decreased from last year. Of the 1066 coho sampled (7 coho were caught at the end of the project were not identified as to whether they were wild or hatchery stock), 20.2% were wild, and 79.8% were of hatchery origin. This is shown in the table (and Figure 5) below, along with the male/female split:

TOTAL		
	#	%
Wild	215	20.2
Hatchery	851	79.8
FEMALES		
	#	%
Wild	106	18.2
Hatchery	478	81.8
MALES		
	#	%
Wild	109	22.6
Hatchery	373	77.4

Figure 5, Split Between Hatchery and Wild Returning Coho Stocks

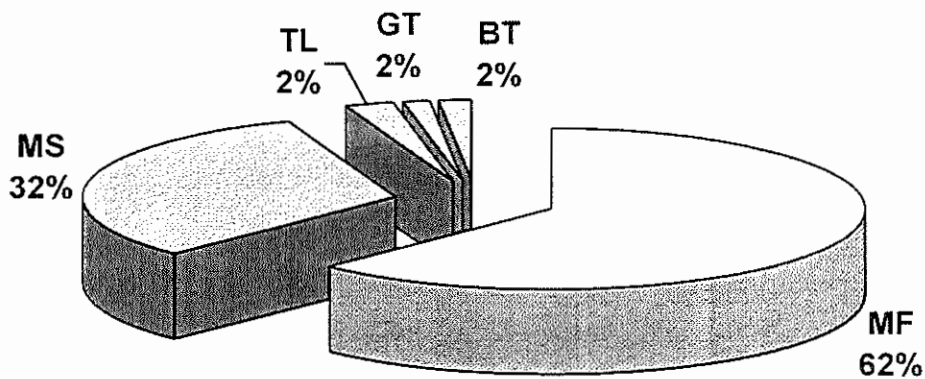


4.3 Dorsal Fin Tagging

Of the 1073 Coho processed at the fence, 128 (or 11.9%) of them had been tagged and tailed punched, nearly all of which were dorsal fin tagged at Moricetown. The tags were either put on as they went through the Moricetown Fishway (MF) or through seining (MS), again at Moricetown. Three coho were identified as having a tail punch with no sign of a tag.

Figure 6 below shows the breakdown of the tags. For full analysis of tag numbers please see Appendix 1.

Figure 6 Tagged Coho



- MF Moricetown Fishway
- MS Moricetown Seine
- TL Tag Loss
- GT Green Tag (no #)
- BT Blue Tag

1066 coho were examined for marks. Numbers of coho captured by mark type are shown in the table below:

Mark Type	Number of Coho
Right Ventral	10
Left Ventral	11
Adipose/Left Ventral	2
Right Maxillary	30
Adipose/Right Maxillary	2
Left Maxillary	5
Adipose/CWT	791

The left maxillary clipped adults were returns from 1995 brood Upper Bulkley River coho reared at the Richfield Creek Public Involvement Program hatchery. A total of 1100

coho were left maxillary clipped and released into the Upper Bulkley system in the late spring of 1996.

The right maxillary clipped coho were 1996 brood coho reared at the Richfield Creek PIP hatchery. A total of 6,941 coho fry were right maxillary clipped and released into the Upper Bulkley system in late spring of 1997.

There were no adipose/right maxillary or adipose/left ventral clipping programs. Those fish may have naturally missing adipose fins or fins could be missing as a result of injury.

A final seine was made on October 28 to capture coho to retrieve milt and eggs for a school project. Seven coho were retrieved (4 males, 3 female) by DFO staff but were not closely examined for fins clipped, weight or length.

4.4 Health

A total of 990 scale samples were taken, from 198 coho. It should be noted that in Appendix 1 under the column 'scales samples' when the numbers are, for example, 6-46; it was because the individual scales were placed on 6, 16, 26, 36, and 46. When the numbers are 6-10, then they were placed on the numbers 6, 7, 8, 9, and 10. Each system is clearly laid out on the scale book itself.

Of the 1073 processed, a total of 50 Coho had clearly identified health problems – representing 4.7% of those handled. Of these 50, the most frequent problem was that from parasites, of which 42 suffered. Other problems included scale loss, damaged jaws, gill net scars, fungus, damage to maxillary and eyes, and scarring.

The average weight of the coho was 6.8 lbs (all estimated weights) and the average length (post orbital hypural length from the back of the eye to the caudal peduncle) was 52cm.

4.5 Other Species

Not including the whitefish, of which several hundred were caught either through seining or with the live trap box, a total of 1188 fish were processed. The table below shows the various catch of each species:

	Coho	Steelhead	Sockeye	Chinook	BT/Dolly *	Nor'n Squawfish
Male	486	29	7	2	17	2
Female	587	51	7			
Total	1073	80	14	2	17	2

Of the 80 steelhead processed, 6 were tagged. For individual tag numbers please see Appendix I.

At least one northern ling cod (or burbot) was washed down onto the fence (and was released below).

4.6 Dead Pitch

This year all the spawned-out and dead fish washed up on the fence were identified and recorded. For a full record of all the fish carcasses collected (and thrown over) the fence please see Appendix II. Making up the list included 65 coho, 34 chinook, 17 pink and 1 steelhead. There were also 7 Dolly Varden/bull trout, and one northern squawfish.

Appendices

Appendix I Upper Bulkley River Fish Fence 1999

Date	Species	M/F	Length* cm's	Mark Type	Dorsal Fin Tag	Comments	Scale Book & #	To Hatchery
3-Sep	Coho	M	50	Ad				
3-Sep	Coho	M	42	Ad				
3-Sep	Coho	M	39	Ad				
3-Sep	Coho	M	40.5	UM	Org 2072 MS			
3-Sep	Coho	M	49	Ad				
3-Sep	Coho	M	35.5	Ad				
3-Sep	Coho	F	52	UM RV	Blu 20538 MF			
3-Sep	Coho	M	42.2	Ad				
3-Sep	Coho	M	41.1	Ad				
3-Sep	Coho	F	50	Ad		(Start Operc Punch)		
4-Sep	Coho	F	58	Ad			SB# 57208	
4-Sep	Coho	F	53	Ad			16-20	
4-Sep	Chinook	M	Jack	UM			No.6-10	
4-Sep	Steelhead	M	54	UM		Fork Length		
4-Sep	Coho	M	37	UM			No. 1-5	
4-Sep	Steelhead	F	41	UM		Fork Length		
4-Sep	Coho	M	36	Ad		Parasites	No. 11-15	
4-Sep	Chinook	M	Jack	UM				
4-Sep	Steelhead	M	58	UM				
5-Sep	Coho	M	47	Ad			No. 21-25	
5-Sep	Coho	F	49	UM			No. 26-30	
5-Sep	Coho	M	35	UM		Net marks		
5-Sep	Coho	M	39	UM				
5-Sep	Coho	M	35	Ad				
6-Sep	Coho	M	41	Ad			No. 31-35	
6-Sep	Coho	M	48	Ad			No. 36-40	
6-Sep	Steelhead	F	58			Fork Length		
6-Sep	Coho	M	58	Ad			No. 41-45	
6-Sep	Coho	M	53	UM			46-50	
6-Sep	Coho	M	41	UM			SB# 57208	
6-Sep	Coho	M	53	Ad		Parasites	1-41	
6-Sep	Coho	F	44	UM			2-42	
6-Sep	Coho	M	41	Ad			3-43	
6-Sep	Coho	F	37	Ad			4-44	
6-Sep	Coho	M	42	Ad			5-45	
6-Sep	Coho	F	52	UM RV	Blu 20507 MS		6-46	
6-Sep	Coho	M	37	Ad			7-47	
6-Sep	Coho	M	37	Ad			8-48	
6-Sep	Coho	F	52	Ad			9-49	
6-Sep	Coho	M	43	Ad	Blu 20113 MF		10-50	
6-Sep	Coho	F	48	Ad			SB#57210	
6-Sep	Coho	M	38	Ad			1-41	

Appendix I Upper Bulkley River Fish Fence 1999

Date	Species	M/F	Length* cm's	Mark Type	Dorsal Fin Tag	Comments	Scale Book & #	To Hatchery
6-Sep	Coho	F	48	Ad			2-42	
6-Sep	Coho	M	37	Ad			3-43	
6-Sep	Coho	F	50	UM			4-44	
6-Sep	White fish		40	UM		Fork Length		
6-Sep	Coho	M	38	UM		Jaundice	5-45	
6-Sep	Coho	M	44	Ad		(liver?)	6-46	
6-Sep	Coho	M	39	UM			7-47	
6-Sep	Coho	M	39	Ad			8-48	
6-Sep	Coho	M	42	Ad			9-49	
6-Sep	Coho	M	52	Ad			10-50	
6-Sep	Coho	F	48	Ad			SB# 57211	
6-Sep	Coho	M	49	Ad			1-41	
7-Sep	Coho	M	38.5	Ad			3-43	
7-Sep	Coho	M	41	Ad			4-44	
7-Sep	Coho	M	38	Ad			5-45	
8-Sep	Coho	M	35.5	UM		Fork Length	6-46	
8-Sep	Nrn Squa	F	45	UM				
8-Sep	Coho	F	47	Ad			7-47	Hatch
8-Sep	Coho	M	43	Ad			8-48	
8-Sep	Coho	M	37.5	Ad			9-49	
8-Sep	Coho	M	46	UM			10-50	Hatch
8-Sep	Coho	F	48	Ad			SB#57212	
8-Sep	Coho	M	38	Ad			1-41	Hatch
8-Sep	Coho	F	45	UM RV			2-42	
8-Sep	Coho	M	31	UM			3-43	Hatch
8-Sep	Coho	M	34	Ad				
8-Sep	Coho	M	45	Ad	Blu 2183 MF		4-44	
8-Sep	Coho	M	38	UM			5-45	Hatch
8-Sep	Coho	F	48	UM			6-46	Hatch
8-Sep	Coho	F	50	Ad			7-47	Hatch
8-Sep	Coho	M	43	Ad			8-48	Hatch
8-Sep	Coho	M	49	Ad		Diseased		
8-Sep	Coho	F	49	Ad			9-49	Hatch
8-Sep	Coho	M	41	Ad		Gill net scars		
8-Sep	Coho	M	43	UM			10-50	Hatch
8-Sep	Coho	F	47	Ad			SB# 57213	
8-Sep	Coho	M	43	Ad			1-41	Hatch
8-Sep	Coho	M	40	UM			2-42	Hatch
8-Sep	Coho	M	34	UM			3-43	Hatch
8-Sep	Coho	M	48	Ad			4-44	Hatch
8-Sep	Coho	M	36	Ad			5-45	
8-Sep	Coho	M	44	Ad				
8-Sep	Coho	M	47	Ad			6-46	

Appendix I Upper Bulkley River Fish Fence 1999

Date	Species	M/F	Length ¹ cm's	Mark Type	Dorsal Fin Tag	Comments	Scale Book & #	To Hatchery
10-Sep	Coho	F	50	Ad	Blu 21787 MF		SB#57216 1-41	Hatch
10-Sep	Coho	M	50	Ad			2-42	
10-Sep	Coho	F	43	Ad			3-43	Hatch
10-Sep	Coho	F	42	Ad			4-44	Hatch
10-Sep	Coho	M	41	Ad				
10-Sep	Coho	F	48	Ad	Blu 21740 MF		5-45	Hatch
10-Sep	Coho	F	52	Ad			6-46	Hatch
10-Sep	Coho	F	50	Ad			7-47	Hatch
10-Sep	Coho	M	38	UM			8-48	Hatch
10-Sep	Coho	F	49	Ad	Blu 20975 MF		9-49	Hatch
10-Sep	Coho	M	48	Ad			10-50	
10-Sep	Coho	F	64	UM				
10-Sep	Coho	F	44	Ad			SB#57217 1-41	Hatch
10-Sep	Coho	M	53	Ad			2-42	
10-Sep	Coho	F	45	Ad			3-43	Hatch
10-Sep	Steelhead	F	68	UM				
11-Sep	Coho	F	N/A	UM				
11-Sep	Coho	M	43	Ad		Parasites		Hatch
12-Sep	Coho	F	44	UM			4-44	Hatch
12-Sep	Coho	F	40	UM			5-45	Hatch
14-Sep	Coho	F	50	Ad		Parasites	6-46	
14-Sep	Coho	F	46	Ad			7-47	
14-Sep	Coho	M	39	Ad				
14-Sep	Coho	F	52	Ad			8-48	Hatch
14-Sep	Coho	M	44	Ad			9-49	
14-Sep	Coho	M	48	Ad			10-50	
14-Sep	Whitefish	N/A	45	UM		Fork Length		
14-Sep	Coho	M	53	Ad		Parasites		
14-Sep	Coho	M	54	Ad	Blu 20782 MF		SB#57218 1-41	
14-Sep	Coho	M	43	Ad			2-42	
14-Sep	Coho	M	40	UM			3-43	Hatch
14-Sep	Coho	F	51	Ad	Tag loss TP		4-44	
14-Sep	Steelhead	F	73	UM				
14-Sep	Coho	M	40	Ad				
14-Sep	Coho	M	47	Ad				
14-Sep	Coho	F	50	Ad			5-45	
14-Sep	Coho	F	45	Ad		Parasites		
14-Sep	Coho	F	54	UM			6-46	Hatch
14-Sep	Coho	M	36	UM			7-47	Hatch
14-Sep	Coho	M	41	UM			8-48	Hatch
14-Sep	Coho	F	47	Ad			9-49	
14-Sep	Coho	F	42	Ad		Parasites		
14-Sep	Coho	M	43	UM		Parasites	10-50	Hatch

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Date	Species	M/F	Length ¹ cm's	Mark Type	Dorsal Fin Tag	Comments	Scale Book & #	To Hatchery
8-Sep	Coho	M	41	UM RV			7-47	
8-Sep	Coho	F	44	Ad	Blu 21238 MF		8-48	
8-Sep	Coho	F	46	Ad		Parasites	9-49	
8-Sep	Coho	M	38	UM				
9-Sep	Coho	F	46	UM			10-50	Hatch
9-Sep	Coho	M	34	Ad				
9-Sep	Steelhead	F	69					
9-Sep	Coho	F	48	UM RV			SB#57214 1-41	
9-Sep	Coho	M	45	Ad			2-42	
9-Sep	Coho	M	41.5	Ad				
9-Sep	Bull Trout	N/A	47	UM		Fork Length	3-43	
9-Sep	Coho	M	52	Ad		Scale Loss	4-44	Hatch
9-Sep	Coho	F	50	Ad			5-45	Hatch
9-Sep	Coho	F	52	Ad			6-46	Hatch
9-Sep	Coho	F	44	UM		Scared	7-47	Hatch
9-Sep	Steelhead	F	59	UM				
9-Sep	Coho	M	36	Ad			8-48	Hatch
9-Sep	Coho	F	45	Ad			9-49	Hatch
9-Sep	Coho	F	52	Ad			10-50	Hatch
9-Sep	Coho	F	46	UM				
9-Sep	Coho	F	45	UM			SB# 57215 1-41	Hatch
9-Sep	Coho	M	43	UM RV			2-42	
10-Sep	Coho	M	32	Ad			3-43	Hatch
10-Sep	Coho	F	53	Ad			4-44	Hatch
10-Sep	Coho	F	49	UM			5-45	
10-Sep	Coho	M	43	Ad				
10-Sep	Coho	F	43	Ad			6-46	Hatch
10-Sep	Coho	F	48	Ad				
10-Sep	Steelhead	F	75	UM				
10-Sep	Coho	M	51	Ad			7-47	Hatch
10-Sep	Coho	F	51	Ad			8-48	Hatch
10-Sep	Coho	M	35	UM				
10-Sep	Coho	F	48	Ad	Blu 21009 MF	Damage Head & Tail	9-49	
10-Sep	Coho	M	49	Ad				
10-Sep	Coho	F	46	UM	Blu 20478 MF		10-50	Hatch

Appendix I Upper Bulkley River Fish Fence 1999

Date	Species	M/F	Length* cm's	Mark Type	Dorsal Fin Tag	Comments	Scale Book & #	To Hatchery
14-Sep	Coho	M	52	Ad			SB# 57219	Hatch
14-Sep	Coho	M	41	Ad			1-41	
14-Sep	Coho	F	52	Ad			2-42	
14-Sep	Coho	F	46	Ad	Blu 20816 MF			
14-Sep	Coho	F	47	Ad			3-43	
14-Sep	Coho	F	49	Ad			4-44	
14-Sep	Coho	F	53	UM			5-45	Hatch
14-Sep	Coho	M	40	Ad				
14-Sep	Coho	F	55	Ad				
14-Sep	Coho	F	46	Ad			6-46	
14-Sep	Coho	F	42	Ad			7-47	Hatch
14-Sep	Coho	F	47	Ad			8-48	
14-Sep	Coho	F	49	Ad		Parasites		
14-Sep	Coho	F	49	Ad			9-49	Hatch
14-Sep	Coho	F	45	Ad			10-50	
15-Sep	Coho	M	50	Ad	Blu 21529 MF		SB# 57220	Hatch
15-Sep	Coho	F	52	Ad			1-41	
15-Sep	Coho	M	57	Ad			2-42	
15-Sep	Coho	M	52	Ad			3-43	
15-Sep	Coho	F	48	Ad			4-44	
15-Sep	Coho	M	33	UM		Fungus	5-45	
15-Sep	Coho	F	48	Ad			6-46	
15-Sep	Coho	M	41	Ad				
15-Sep	Coho	F	49	Ad		Half Tail	7-47	
15-Sep	Coho	F	52	UM		Scar on right	7-48	Hatch
15-Sep	Coho	F	55	Ad			9-49	Hatch
15-Sep	Coho	F	53	UM			10-50	Hatch
15-Sep	Coho	F	51	Ad			SB# 57221	
15-Sep	Coho	F	53	Ad		Parasites	1-41	
15-Sep	Coho	F	57	Ad			2-42	
15-Sep	Coho	F	48	UM			3-43	Hatch
15-Sep	Coho	M	47	Ad			4-44	
15-Sep	Coho	F	42	Ad			5-45	
15-Sep	Coho	M	50	UM			6-46	Hatch
15-Sep	Coho	F	47	Ad			7-47	
15-Sep	Coho	M	42	Ad			8-48	Hatch
15-Sep	Coho	M	50	Ad			9-49	Hatch
15-Sep	Coho	M	35	Ad				
15-Sep	Coho	F	56	Ad				
15-Sep	Coho	F	52	Ad				
15-Sep	Coho	M	49	Ad				Hatch
15-Sep	Coho	F	45	Ad	Blu 21944 MF			
15-Sep	Coho	F	53	Ad	Blu 20938 MF			

Appendix I Upper Bulkley River Fish Fence 1999

Date	Species	M/F	Length* cm's	Mark Type	Dorsal Fin Tag	Comments	Scale Book & #	To Hatchery
15-Sep	Whitefish	N/A	38	UM				
15-Sep	Whitefish	N/A	38	UM				
15-Sep	Whitefish	N/A	38	UM				
15-Sep	Whitefish	N/A	38	UM				
15-Sep	Whitefish	N/A	38	UM				
15-Sep	Whitefish	N/A	38	UM				
15-Sep	Whitefish	N/A	38	UM				
15-Sep	Whitefish	N/A	38	UM				
15-Sep	Whitefish	N/A	38	UM				
15-Sep	Steelhead	F	54	UM				
15-Sep	Coho	F	53	UM	Blu 21328 MF		10-50	
15-Sep	Coho	F	54	Ad				Hatch
15-Sep	Coho	M	38	Ad				
15-Sep	Coho	M	40	Ad				
15-Sep	Steelhead	M	58	UM				
15-Sep	Steelhead	F	55	UM				
15-Sep	Coho	M	44	UM			SB# 57222	
15-Sep	Coho	F	54	Ad			1-41	Hatch
15-Sep	Coho	M	50	Ad	Blu 20249 MF			
15-Sep	Coho	F	45	Ad				
15-Sep	Coho	M	53	Ad				
15-Sep	Coho	M	41	Ad				
15-Sep	Coho	M	45	Ad				
15-Sep	Coho	F	48	Ad				
15-Sep	Coho	F	50	Ad				
15-Sep	Coho	M	49	Ad				
15-Sep	Coho	F	50	UM				
15-Sep	Coho	F	52	UM				
15-Sep	Coho	F	48	UM			2-42	
15-Sep	Coho	M	40	UM			3-43	Hatch
15-Sep	Coho	M	55	UM				Hatch
15-Sep	Coho	M	36	Ad				
15-Sep	Coho	M	41	Ad				
15-Sep	Coho	M	35	Ad				
15-Sep	Coho	F	49	Ad	Blu 21558 MF			
15-Sep	Coho	F	46	UM	Blu 21913 MF			
15-Sep	Coho	M	40	Ad				
15-Sep	Coho	F	45	UM RV				
15-Sep	Coho	F	44	Ad		Parasites		
15-Sep	Coho	M	39	Ad				
15-Sep	Coho	M	40	UM				Hatch
15-Sep	Coho	M	44	UM			4-44	Hatch
15-Sep	Coho	F	55	Ad			5-45	
15-Sep	Coho	M	46	Ad				
15-Sep	Coho	F	53	Ad				

Appendix I Upper Bulkley River Fish Fence 1999

Date	Species	M/F	Length* cm's	Mark Type	Dorsal Fin Tag	Comments	Scale Book & #	To Hatchery
15-Sep	Coho	F	50	Ad				
15-Sep	Coho	M	42	Ad				
15-Sep	Coho	M	55	Ad				
15-Sep	Coho	F	52	UM				
15-Sep	Coho	F	51	Ad	Blu 21544 MF			
15-Sep	Coho	M	55	Ad				
15-Sep	Coho	F	56	Ad				
15-Sep	Coho	F	58	Ad	Blu 20973 MF			
15-Sep	Coho	M	35	UM				
15-Sep	Coho	M	41	Ad				
15-Sep	Coho	M	45	Ad	Org 3060 MS			
15-Sep	Coho	F	52	Ad				
15-Sep	Coho	F	49	UM				
15-Sep	Coho	F	54	Ad				
15-Sep	Coho	M	55	Ad				
15-Sep	Coho	F	52	UM				
15-Sep	Coho	M	43	Ad				
15-Sep	Coho	F	51	UM RV				
15-Sep	Coho	F	55	UM				
16-Sep	Coho	F	44	Ad				
16-Sep	Whitefish	N/A	38	UM				
16-Sep	Coho	F	50	Ad	Blu 21837 MF			
16-Sep	Coho	M	50	Ad				
16-Sep	Steelhead	F	63	UM				
16-Sep	Coho	M	54	Ad				
16-Sep	Coho	F	47	Ad				
16-Sep	Coho	F	52	Ad				
16-Sep	Coho	F	62	UM				
16-Sep	Coho	M	45	Ad				
16-Sep	Coho	F	49	Ad				
16-Sep	Coho	F	58	Ad				
16-Sep	Coho	F	48	Ad				
16-Sep	Coho	F	47	UM				
16-Sep	Coho	F	53	Ad				
16-Sep	Steelhead	F	55	UM				
16-Sep	Steelhead	F	61	UM				
16-Sep	Coho	M	53	UM			6-46	Hatch
16-Sep	Steelhead	F	55	UM	Whi 21708	MoE		
16-Sep	Coho	F	46	Ad				
16-Sep	Coho	M	37	Ad				
16-Sep	Coho	M	38	UM	Blu 21147 MF			Hatch
17-Sep	Coho	F	51	Ad				
17-Sep	Coho	M	39	Ad	Whi 3080 MS			
17-Sep	Coho	M	53	Ad				
17-Sep	Steelhead	F	57	UM				

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Date	Species	M/F	Length* cm's	Mark Type	Dorsal Fin Tag	Comments	Scale Book & #	To Hatchery
17-Sep	Coho	F	50	Ad				
17-Sep	Coho	M	37	UM	Blu 20709 MF		7-47	
17-Sep	Coho	F	50	Ad				
17-Sep	Coho	F	52	UM				
17-Sep	Coho	F	50	Ad	Blu 22418 MF			
17-Sep	Sockeye	F	54	UM		Fork Length		
17-Sep	Coho	F		Ad				
17-Sep	Coho	F		Ad	Blu 21231 MF			
17-Sep	Coho	M		Ad				
17-Sep	Coho	F		Ad				
17-Sep	Coho	F		Ad				
17-Sep	Coho	F		Ad				
17-Sep	Coho	M		Ad				
17-Sep	Coho	M		Ad				
17-Sep	Coho	M		Ad				
17-Sep	Coho	M		Ad				Hatch
17-Sep	Coho	F		Ad				
17-Sep	Coho	F		Ad		Parasites		
17-Sep	Coho	M		Ad		Seine		Hatch
17-Sep	Coho	M		UM		Seine		Hatch
17-Sep	Coho	F		UM		Seine		
17-Sep	Coho	F		UM		Seine		
17-Sep	Coho	F		UM		Seine		
17-Sep	Coho	M		Ad		Seine		Hatch
17-Sep	Coho	M		UM	Blu 20622 MF	Seine		Hatch
17-Sep	Coho	F		UM		Seine		
17-Sep	Coho	F		Ad	Blu 21965 MF	Seine		
17-Sep	Coho	F		UM		Seine		
17-Sep	Coho	F		Ad		Seine		
17-Sep	Coho	M		Ad	Blu 20897 MF	Seine		Hatch
17-Sep	Coho	F		UM LV		Seine		
17-Sep	Coho	M		UM	Blu 22042 MF	Seine		Hatch
17-Sep	Coho	F		UM RM	Blu 21735 MF	Seine		
17-Sep	Coho	F		Ad		Seine		
17-Sep	Steelhead	F	79	UM		Seine		
17-Sep	Coho	M		Ad		Seine		
17-Sep	Coho	F		Ad		Seine		
17-Sep	Coho	F		Ad		Seine		
17-Sep	Coho	F		Ad		Seine		
17-Sep	Coho	F		Ad		Seine		
17-Sep	Steelhead	M		UM		Seine		
17-Sep	Coho	M		Ad		Seine		
17-Sep	Coho	F		UM		Seine		

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Date	Species	M/F	Length* cm's	Mark Type	Dorsal Fin Tag	Comments	Scale Book & #	To Hatchery
17-Sep	Coho	F		Ad		Seine		
17-Sep	Coho	M		Ad	Org 2052 MS	Seine		Hatch
17-Sep	Steelhead	F		UM		Seine		Hatch
17-Sep	Coho	M		UM		Seine		Hatch
17-Sep	Whitefish	F	38	UM		Seine		
17-Sep	Steelhead	F		UM		Seine		
17-Sep	Coho	F		Ad		Seine		
17-Sep	Coho	M		UM	Org 2142 MS	Seine		
17-Sep	Coho	F		Ad		Parasites		
17-Sep	Whitefish	F		UM				
17-Sep	Whitefish	F		UM				
17-Sep	Coho	M		Ad	LV			
17-Sep	Bull Trout	F	35	UM		Fork Length		
17-Sep	Steelhead	F		UM				
17-Sep	Coho	F		Ad				
17-Sep	Whitefish	F		UM				
17-Sep	Coho	F		Ad				
17-Sep	Coho	F		Ad				
17-Sep	Coho	F		Ad				
17-Sep	Coho	F		Ad				
17-Sep	Coho	M		Ad				
17-Sep	Coho	F		Ad				
18-Sep	Coho	F		Ad				
18-Sep	Whitefish	F		Ad	Blu 21480 MF			
18-Sep	Steelhead	M		UM				
18-Sep	Coho	F		Ad				
18-Sep	Coho	F		Ad				
18-Sep	Coho	F		Ad				
18-Sep	Coho	F		Ad				
18-Sep	Coho	F		Ad				
18-Sep	Whitefish	F		UM				
18-Sep	Coho	F		Ad				
18-Sep	Coho	F		Ad				
18-Sep	Coho	F	50	UM			8-48	
18-Sep	Steelhead	F		UM				
18-Sep	Coho	M		UM				
18-Sep	Steelhead	F		UM				
18-Sep	Coho	M		UM				
18-Sep	Coho	F		Ad				
18-Sep	Coho	M	39	UM			9-49	Hatch
18-Sep	Coho	F		Ad	Whl 8233 MS			
18-Sep	Coho	M	53	UM	Blu 21291 MS		10-50	Hatch
18-Sep	Coho	M		Ad				
18-Sep	Coho	F		Ad				
18-Sep	Coho	M		Ad				
18-Sep	Coho	M		Ad				

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Date	Species	M/F	Length* cm's	Mark Type	Dorsal Fin Tag	Comments	Scale Book & #	To Hatchery
18-Sep	Steelhead	F		UM				
18-Sep	Steelhead	M		UM				
18-Sep	Coho	F		Ad				
18-Sep	Coho	F		Ad				
18-Sep	Steelhead	M		UM				
18-Sep	Coho	F		Ad				
18-Sep	Coho	M		Ad				
18-Sep	Coho	F		Ad				
18-Sep	Coho	F		Ad				
18-Sep	Coho	M		Ad				
18-Sep	Coho	F		Ad				
18-Sep	Coho	F		Ad				
18-Sep	Coho	F		Ad				
18-Sep	Coho	F		Ad				
18-Sep	Coho	F		Ad				
18-Sep	Coho	F		Ad				
18-Sep	Coho	F		Ad				
18-Sep	Coho	F		Ad	Blu 21907 MF			
18-Sep	Coho	F		Ad				
18-Sep	Coho	M		Ad	Blu 21838 MF			
18-Sep	Coho	M	43	UM			SB#57223 1-41	Hatch
18-Sep	Coho	F		Ad				
18-Sep	Coho	M		Ad				
18-Sep	Coho	F		Ad				
18-Sep	Coho	F		Ad				
18-Sep	Coho	F		Ad				
18-Sep	Coho	F		Ad				
18-Sep	Coho	F		Ad				
18-Sep	Coho	M	41	UM	Whl 3113 MS		2-42	Hatch
18-Sep	Coho	M		Ad				
18-Sep	Coho	M		Ad				
18-Sep	Coho	M		Ad				
18-Sep	Coho	M		Ad				
18-Sep	Coho	M		Ad				
18-Sep	Coho	F		Ad				
18-Sep	Coho	M		Ad				
18-Sep	Coho	M		Ad				
18-Sep	Coho	M		Ad				
18-Sep	Coho	F		Ad	Blu 21757 MF			Hatch
18-Sep	Coho	M		Ad				
18-Sep	Coho	M		Ad				
18-Sep	Coho	F		Ad				
18-Sep	Coho	F		Ad				
18-Sep	Coho	F		Ad				
18-Sep	Coho	F		Ad				
18-Sep	Coho	M		Ad				
18-Sep	Coho	F		Ad				

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Date	Species	M/F	Length* cm's	Mark Type	Dorsal Fin Tag	Comments	Scale Book & #	To Hatchery
21-Sep	Steelhead	M	N/A	UM				
21-Sep	Coho	M	N/A	Ad	Org 2155 MS			
21-Sep	Coho	F	N/A	UM	Blu 21258 MF			
21-Sep	Coho	M	N/A	UM	Blu 21036 MF			
21-Sep	Coho	M	N/A	Ad				
21-Sep	Coho	F	N/A	Ad				
21-Sep	Coho	F	N/A	Ad				
21-Sep	Coho	F	N/A	Ad				
21-Sep	Coho	F	51	UM		5-45		
21-Sep	Coho	F	N/A	Ad				
21-Sep	Coho	M	N/A	Ad				
21-Sep	Coho	F	N/A	Ad				
21-Sep	Coho	M	N/A	Ad				
21-Sep	Coho	M	N/A	Ad				
21-Sep	Coho	F	N/A	Ad				
21-Sep	Coho	F	N/A	Ad				
21-Sep	Coho	F	N/A	Ad				
21-Sep	Coho	F	N/A	Ad				
21-Sep	Coho	F	N/A	Ad				
21-Sep	Coho	F	N/A	Ad				
21-Sep	Coho	F	N/A	Ad				
21-Sep	Coho	F	N/A	Ad				
21-Sep	Coho	F	N/A	Ad				
21-Sep	Coho	F	N/A	Ad				
21-Sep	Coho	F	N/A	Ad				
21-Sep	Coho	M	N/A	Ad				
21-Sep	Coho	M	N/A	Ad				
21-Sep	Coho	M	N/A	Ad				
21-Sep	Coho	M	N/A	Ad				
21-Sep	Coho	F	53	UM	Blu 21463 MF	7-47		
21-Sep	Coho	F	N/A	Ad				
21-Sep	Coho	M	N/A	Ad				
21-Sep	Coho	M	N/A	Ad				

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Date	Species	M/F	Length* cm's	Mark Type	Dorsal Fin Tag	Comments	Scale Book & #	To Hatchery
21-Sep	Coho	F	N/A	Ad				
21-Sep	Coho	F	43	UM			B-48	
21-Sep	Coho	F	N/A	Ad				
21-Sep	Coho	F	N/A	Ad				
21-Sep	Steelhead	M	N/A	UM				
21-Sep	Coho	M	N/A	Ad				
21-Sep	Coho	M	N/A	UM				
21-Sep	Coho	M	N/A	UM		Parasites		
21-Sep	Coho	M	N/A	Ad	Whi 8028 MS			
21-Sep	Coho	F	N/A	Ad				
21-Sep	Coho	F	N/A	Ad				
Sep-22	Coho	F		Ad				
Sep-22	Coho	M		Ad				
Sep-22	Coho	F		Ad				
Sep-22	Coho	F		Ad	Blu 22061 MF	parasites		
Sep-22	Coho	F		Ad		parasites		
Sep-22	Coho	F		Ad				
Sep-22	Coho	M		Ad				
Sep-22	Coho	F		UM	Blu 22236 MF			
Sep-22	Coho	F		UM	Blu 22028 MF			
Sep-22	Coho	F		Ad				
Sep-22	Coho	M		Ad				
Sep-22	whitefish	M		UM				
Sep-22	Coho	F		UM				
Sep-22	Coho	F		Ad				
Sep-22	Coho	F		Ad				
Sep-22	Coho	F		Ad				
Sep-22	Coho	F		Ad				
Sep-22	Coho	M		Ad				
Sep-22	Steelhead	F		UM				
Sep-22	Steelhead	F		UM				
Sep-22	Coho	F		Ad				
Sep-22	Coho	F		UM				
Sep-22	Coho	F		Ad				
Sep-22	Coho	F		Ad				
Sep-22	Coho	F		Ad				
Sep-22	Coho	M		Ad				
Sep-22	Steelhead	F		UM				
Sep-22	Coho	M		Ad				
Sep-22	Coho	F		Ad				
Sep-22	Coho	F		Ad	White 3051 MS TP			
Sep-22	Steelhead	M		UM				
Sep-22	Steelhead	M		UM				
Sep-22	Steelhead	F		UM				
Sep-22	Steelhead	F		UM				
Sep-22	Coho	M		UM	blwn23209 Blu 20694 MF	IMoE		
Sep-22	Coho	F		Ad				
Sep-22	Coho	M		UM RM				
Sep-22	Coho	F		UM				
Sep-22	Steelhead	F		UM	blwn23063	IMoE		
Sep-22	Coho	M		UM RV				
Sep-22	Coho	F		Ad				
Sep-22	Coho	M		UM				
Sep-22	whitefish	M		UM				
Sep-22	whitefish	M		UM				

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Date	Species	MIF	Length cm's	Mark Type	Dorsal Fin Tag	Comments	Scale Book & #	To Hatchery
Sep-23	Coho	M		Ad				
Sep-23	Steelhead	M		UM		parasites		
Sep-23	Coho	M		Ad				
Sep-23	Coho	M		UM				
Sep-23	Coho	M		Ad				
Sep-23	Coho	M		Ad	Tag Loss TP			
Sep-23	Steelhead	F		UM				
Sep-23	Coho	F		UM				
Sep-23	Coho	F		Ad				
Sep-23	Coho	F		UM RM				
Sep-23	Steelhead	M		UM				
Sep-23	Coho	M		Ad	Blu 21217 MF			
Sep-23	Coho	F		Ad				
Sep-23	Coho	F		Ad				
Sep-23	Coho	F		UM				
Sep-23	Coho	F		Ad				
Sep-23	Coho	M		UM				
Sep-23	Coho	F		UM				
Sep-23	Steelhead	F		UM				
Sep-23	Coho	F		Ad				
Sep-24	Coho	F		Ad	green no# TP	Seine		
Sep-24	Coho	M		Ad		Seine		
Sep-24	Coho	M		Ad		Seine		
Sep-24	Coho	M		Ad		Seine		
Sep-24	Coho	F		Ad		Seine		
Sep-24	Coho	M		Ad		Seine		
Sep-24	Coho	M		Ad		Seine		
Sep-24	Coho	M		UM		Seine		
Sep-24	Coho	M		Ad		Seine		
Sep-24	Coho	M		Ad		Seine		
Sep-24	Coho	F		UM		Seine		
Sep-24	Coho	M		Ad		Seine		
Sep-24	Coho	M		UM		Seine		
Sep-24	Coho	M		UM LV	Blu 21807 MF	Seine		
Sep-24	Steelhead	F		UM		Seine		
Sep-24	Steelhead	M		UM	brm21089 MS	Moe Seine		
Sep-24	Steelhead	F		UM	brm23021 MS	Moe Seine		
Sep-25	whitefish							
Sep-25	whitefish							
Sep-25	whitefish							
Sep-25	whitefish							
Sep-25	whitefish							

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Date	Species	MIF	Length cm's	Mark Type	Dorsal Fin Tag	Comments	Scale Book & #	To Hatchery
Sep-22	Steelhead	M		UM				
Sep-22	Steelhead	F		UM				
Sep-22	Coho	F		Ad				
Sep-22	Steelhead	F		UM				
Sep-22	Steelhead	F		UM		parasites		
Sep-22	Coho	F		Ad				
Sep-22	Coho	M		Ad				
Sep-22	Coho	F		Ad	Org 5056 MS			
Sep-22	Coho	M		UM				
Sep-22	Coho	F		UM				
Sep-22	Steelhead	F		UM				
Sep-22	Coho	F		Ad				
Sep-22	Coho	M		Ad		parasites		
Sep-22	Coho	F		UM LM				
Sep-22	Coho	M		Ad				
Sep-22	Steelhead	M		UM				
Sep-22	Coho	M		Ad				
Sep-22	Steelhead	F		UM				
Sep-22	Coho	M		Ad				
Sep-22	Coho	F		Ad	Blu 26794 MF			
Sep-22	Coho	F		Ad				
Sep-23	Coho	F		Ad	light Blu01491MF			
Sep-23	Coho	F		Ad				
Sep-23	Coho	M		Ad	wht3016 MS			
Sep-23	Coho	M		UM				
Sep-23	whitefish			UM				
Sep-23	whitefish			UM				
Sep-23	whitefish			UM				
Sep-23	Coho	F		UM	Blu 22398 MF			
Sep-23	Coho	F		Ad				
Sep-23	Coho	M		UM				
Sep-23	Coho	F		Ad				
Sep-23	Coho	M		UM				
Sep-23	Coho	F		Ad				
Sep-23	Steelhead	F		UM				
Sep-23	Coho	F		Ad				
Sep-23	Coho	F		Ad				
Sep-23	Coho	F		UM				
Sep-23	Coho	F		Ad				
Sep-23	Coho	M		Ad				
Sep-23	Steelhead	F		UM				
Sep-23	Coho	F		Ad				
Sep-23	Coho	F		Ad				
Sep-23	Coho	F		Ad				
Sep-23	Steelhead	F		UM		damage right OP		
Sep-23	Coho	M		UM LV				
Sep-23	Coho	M		Ad				
Sep-23	Coho	F		Ad				

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Date	Species	M/F	Length* cm's	Mark Type	Dorsal Fin Tag	Comments	Scale Book & #	To Hatchery
Oct-06	Coho	F		Ad		Seine		Hatch
Oct-06	Coho	M		Ad		Seine		Hatch
Oct-06	Coho	F		Ad	Blu 6265 MS	Seine		Hatch
Oct-06	Coho	F		Ad		Seine		Hatch
Oct-06	Coho	M		Ad	Blu 22231 MF	Seine		Hatch
Oct-06	Coho	M		Ad	8163 MS	Seine		Hatch
Oct-06	Coho	M		Ad		Seine		Hatch
Oct-06	Coho	M		UM		Seine		Hatch
Oct-06	Coho	M		Ad		Seine	8-48	Hatch
Oct-06	Coho	M		Ad		Seine		Hatch
Oct-06	Coho	F		Ad		Seine	9-49	Hatch
Oct-06	Coho	M		Ad		Seine		Hatch
Oct-06	Coho	F		Ad		Seine		Hatch
Oct-06	Coho	F		Ad		Seine		Hatch
Oct-06	Coho	M		Ad		Seine		Hatch
Oct-06	Coho	M		UM		Seine		Hatch
Oct-06	Coho	M		UM		Seine		Hatch
Oct-06	Coho	F		Ad		Seine		Hatch
Oct-06	Coho	M		Ad	Blu 22468 MF	Seine		Hatch
Oct-06	Coho	M		Ad		Seine		Hatch
Oct-06	Coho	F		Ad		Seine	10-50	Hatch
Oct-06	Coho	F		Ad		Seine		Hatch
Oct-06	Coho	F		Ad		Seine		Hatch
Oct-06	Coho	M		UM		Seine		Hatch
Oct-06	bull/doi	M		Ad		Seine		Hatch
Oct-06	Coho	M		Ad	green 8736 M	Seine		Hatch
Oct-06	bull/doi	M		Ad		Seine		Hatch
Oct-06	bull/doi	F		Ad		parasites seine		Hatch
Oct-06	Coho	M		UM		Seine		Hatch
Oct-06	Coho	M		Ad		Seine		Hatch
Oct-06	Coho	M		Ad		Seine		Hatch
Oct-06	whitelish	pprox 150				Seine		Hatch
Oct-06	bull/doi					Seine		Hatch
Oct-06	Coho	F		Ad	Blu 6358 MS	Seine		Hatch
Oct-06	bull/doi					Seine		Hatch
Oct-06	bull/doi					Seine		Hatch
Oct-06	Coho	F		Ad		2nd seine		Hatch
Oct-06	Coho	M		Ad		Seine		Hatch
Oct-06	Coho	M		UM		Seine		Hatch
Oct-06	Coho	M		UM		Seine		Hatch
Oct-06	Coho	M		Ad		Seine		Hatch
Oct-06	sockeye	M				Seine		Hatch
Oct-06	Coho	F		UM		Seine		Hatch
Oct-06	bull/doi					Seine		Hatch
Oct-06	bull/doi					3rd seine		Hatch
Oct-06	bull/doi					Seine		Hatch
Oct-06	bull/doi					Seine		Hatch
Oct-06	whitelish					Seine		Hatch
Oct-07	Hatchery look B males B females							
Oct-08	Coho	M		UM				
Oct-08	Coho	M		Ad				
Oct-08	Coho	M		Ad				
Oct-08	Coho	M		Ad				
Oct-08	Coho	F		UM				
Oct-08	Coho	M		Ad				

Appendix I Upper Bulkley River Fish Fence 1999

Date	Species	M/F	Length* cm's	Mark Type	Dorsal Fin Tag	Comments	Scale Book & #	To Hatchery
Oct-08	Coho	F		Ad				
Oct-08	Coho	F		Ad				
Oct-11	Coho	M	59cm	UM			SB# 57226 1-41	
Oct-11	Coho	F	57cm	Ad			2-42	
Oct-11	Coho	F	59cm	Ad			3-43	
Oct-11	Coho	F	45cm	Ad			4-44	
Oct-11	Coho	F	50cm	Ad			5-45	
Oct-11	Coho	M	54cm	UM			6-46	
Oct-11	Coho	F	50cm	UM			7-47	
Oct-11	Coho	F	53cm	Ad	22181 MF		8-48	
Oct-11	Coho	F	53cm	Ad			9-49	
Oct-11	Coho	M	39cm	Ad			10-50	
Oct-11	Coho	M		Ad	Pur 9243 MS			
Oct-11	Coho	M		Ad				
Oct-11	Coho	F		UM				
Oct-11	Coho	F		Ad		parasites		
Oct-11	Coho	M		Ad	Blu 01465			
Oct-11	Coho	M		Ad				
Oct-11	Coho	M		Ad				
Oct-11	Coho	F		UM				
Oct-11	Coho	M		Ad				
Oct-11	Coho	M		Ad				
Oct-11	Coho	M		Ad				
Oct-11	Coho	M		Ad				
Oct-11	Coho	F		UM RM	Blu 21335 MF			
Oct-11	dw/dl	F						
Oct-11	Coho	F		UM				
Oct-11	Coho	F		UM				
Oct-11	Coho	M		Ad				
Oct-11	Coho	M		Ad				
Oct-11	Coho	M		Ad				
Oct-11	Coho	M		Ad				
Oct-11	Coho	F		Ad				
Oct-11	Coho	F		Ad				
Oct-18	Coho	M	50cm	Ad RM			SB# 57227 1-41	
Oct-18	Coho	M	42cm	Ad			2-42	
Oct-18	Coho	F	52cm	Ad			3-43	
Oct-18	Coho	M	46cm	UM RM			4-44	
Oct-18	Coho	F	54cm	Ad			5-45	
Oct-18	Coho	M	56cm	UM			6-46	
Oct-18	Coho	F	48cm	Ad			7-47	
Oct-18	Coho	M		Ad	60488 MS			
Oct-18	Coho	F	57cm	Ad			8-48	
Oct-18	Coho	M		Ad				
Oct-18	Coho	F		Ad		parasites		
Oct-18	Coho	M		Ad				
Oct-18	Coho	F		Ad				
Oct-18	Coho	M		Ad				
Oct-19	Coho	F	54cm	UM			9-49	
Oct-19	Coho	F	54cm	Ad			10-50	

Appendix I Upper Bulkley River Fish Fence 1999

Date	Species	M/F	Length* cm's	Mark Type	Dorsal Fin Tag	Comments	Scale Book & #	To Hatchery
Oct-20	Coho	M		UM				
Oct-20	Coho	F		Ad				
Oct-20	Coho	F		Ad				
Oct-20	Coho	F		Ad				
Oct-20	Coho	F		Ad				
Oct-21	Coho	M		Ad				
Oct-21	Coho	M		Ad				
Oct-21	Coho	M		Ad	Org 5012 MS			
Oct-21	Coho	M		UM				
Oct-21	Coho	F		Ad	Blu 121952 MF	parasites		
Oct-21	Coho	F		Ad				
Oct-21	Coho	F		Ad				
Oct-21	Coho	M		Ad				
Oct-21	Coho	M		Ad				
Oct-21	Coho	F		Ad				
Oct-21	Coho	F		UM				
Oct-21	Coho	F		UM LV				
Oct-21	Coho	F		Ad				
Oct-21	Coho	M		Ad				
Oct-21	Coho	M		Ad				
Oct-21	Coho	F		Ad				
Oct-21	Coho	M		Ad				
Oct-21	Coho	F		Ad				
Oct-21	Coho	F		Ad				
Oct-21	Coho	M		Ad				
Oct-21	Coho	F		Ad				
Oct-21	Coho	M		Ad				
Oct-21	Coho	M		Ad				
Oct-21	Coho	M		Ad				
Oct-21	Coho	F		Ad		parasites		
Oct-21	Coho	M		Ad				
Oct-21	Coho	F		Ad				
Oct-21	Coho	M		Ad				
Oct-21	Coho	F		Ad		parasites		
Oct-21	Coho	M		Ad				
Oct-21	Coho	M		Ad				

Appendix I Upper Bulkley River Fish Fence 1999

Date	Species	M/F	Length* cm's	Mark Type	Dorsal Fin Tag	Comments	Scale Book & #	To Hatchery
Oct-21	Coho	M		Ad				
Oct-21	Coho	M		Ad				
Oct-21	Coho	F		Ad				
Oct-21	Coho	F		Ad				
Oct-21	Coho	F		Ad				
Oct-21	Coho	M		UM				
Oct-21	Coho	M		Ad				
Oct-21	Coho	M		UM				
Oct-21	Coho	F		Ad				
Oct-21	Coho	F		UM RM				
Oct-21	Coho	F		Ad		Seine		
Oct-21	Coho	F		UM		Seine		
Oct-21	Whitefish	F		Ad		Seine		
Oct-21	Coho	F		Ad		Seine		
Oct-21	Coho	M		Ad		Seine		
Oct-21	Coho	M		Ad	grey 8343 MS	Seine		
Oct-21	Coho	M		UM		Seine		
Oct-21	Coho	M		Ad		Seine		
Oct-21	Coho	M		Ad		Seine		
Oct-21	Coho	M		Ad		Seine		
Oct-21	Coho	M		Ad		Seine		
Oct-21	Coho	M		Ad		Seine		
Oct-21	Coho	M		Ad		Seine		
Oct-21	Coho	F		Ad		Seine		
Oct-21	Coho	F		Ad		Seine		
Oct-21	Coho	M		Ad		Seine		
Oct-21	Coho	M		Ad		Seine		
Oct-21	Coho	F		Ad		Seine		
Oct-21	Coho	M		Ad		Seine		
Oct-21	Coho	M		Ad		Seine		
Oct-21	Coho	F		Ad		Seine		
Oct-21	Coho	F		Ad		Seine		
Oct-21	Coho	M		UM		Seine		
Oct-21	Coho	M		UM LV		Seine		
Oct-21	Coho	F		Ad		Seine		
Oct-21	Coho	M		Ad		Seine		
Oct-21	Coho	M		Ad	Blu 22240 MF	Seine		
Oct-21	Coho	M		Ad	Blu 22098 MF	Seine		
Oct-21	Coho	M		Ad		Seine		
Oct-21	Coho	M		Ad		Seine		
Oct-21	Coho	M		Ad		Seine		
Oct-21	Coho	M		Ad		parassites Seine		
Oct-21	Coho	F		Ad		Seine		
Oct-21	Coho	F		Ad		Seine		
Oct-21	Coho	F		Ad		parassites Seine		
Oct-21	sockeye	M		Ad		Seine		
Oct-21	sockeye	F		Ad		Seine		
Oct-21	sockeye	F		Ad	Blu 6738 MS	Seine		
Oct-21	sockeye	M		Ad	Pur 9167 MS	Seine		
Oct-21	sockeye	M		UM	Blu 6192 MS	Seine		
Oct-21	sockeye	M		Ad		rip in jaw Seine		

Appendix I Upper Bulkley River Fish Fence 1999

Date	Species	M/F	Length* cm's	Mark Type	Dorsal Fin Tag	Comments	Scale Book & #	To Hatchery
Oct-21	sockeye	F		UM		Seine		
Oct-21	sockeye	M		Ad		Seine		
Oct-21	sockeye	F		Ad		Seine		
Oct-21	sockeye	F		Ad		Seine		
Oct-21	sockeye	F		Ad	Blu 01108	Seine		
Oct-21	dolly/bt	M		Ad		Seine		
Oct-21	dolly/bt	M		Ad		Seine		
Oct-21	Coho	F		Ad	Blu 20365 MS	Seine		
Oct-21	Coho	M		Ad		Seine		
Oct-21	Coho	M		Ad	6420 MS	Seine		
Oct-21	Coho	F		Ad		Seine		
Oct-21	Coho	F		Ad		Seine		
Oct-21	Coho	F		UM		Seine		
Oct-21	Coho	M		UM	Blu 2208 MF	fungus seine		
Oct-21	Coho	M		Ad	Pur 9194 MS	Seine		
Oct-21	Coho	F		Ad		eyeball problem Seine		
Oct-21	Coho	M		Ad		Seine		
Oct-21	Coho	F		UM	Pur 9235 MS	Seine		
Oct-21	Coho	F		Ad		Seine		
Oct-21	Coho	M		UM	Pur 9250 MS	Seine		
Oct-21	Coho	F		Ad		Seine		
Oct-21	Coho	M		Ad		Seine		
Oct-21	Coho	M		UM		Seine		
Oct-21	Coho	F		Ad	Blu 21331 MF	Seine		
Oct-21	Coho	F		Ad		Seine		
Oct-21	steelhead	F		Ad		Seine		
Oct-21	Coho	F		Ad		Seine		
Oct-22	Coho	M		Ad		Seine		
Oct-22	Coho	M		Ad	Blu 21092 MF	Seine		
Oct-22	Coho	M		UM				
Oct-22	Coho	F		Ad				
Oct-22	steelhead	M		UM				
Oct-22	Coho	M		UM				
Oct-22	Coho	F		Ad				
Oct-22	Coho	F		Ad	Blu 21381			
Oct-22	Coho	M		UM				
Oct-22	Coho	F		Ad				
Oct-22	Coho	F		Ad				
Oct-22	steelhead	M		UM				
Oct-22	Coho	F		Ad				
Oct-22	Coho	F		UM				
Oct-22	Coho	M		Ad				
Oct-22	Coho	M		Ad				
Oct-22	Coho	M		Ad	Blu 22449 MF			
Oct-22	Coho	F		Ad				
Oct-22	Coho	M		UM		parasites		
Oct-22	Coho	M		Ad				
Oct-22	Coho	M		Ad				
Oct-22	Coho	M		Ad				
Oct-22	Coho	F		Ad				

Appendix I Upper Bulkley River Fish Fence 1999

Date	Species	M/F	Length* cm's	Mark Type	Dorsal Fin Tag	Comments	Scale Book & #	To Hatchery
Oct-22	Coho	F		Ad				
Oct-22	Coho	M		Ad	Blu 21116 MF			
Oct-22	Coho	M		Ad				
Oct-22	Coho	F		Ad	Whi 3030 MS			
Oct-22	Coho	M		Ad				
Oct-22	Coho	M		Ad				
Oct-22	Coho	M		Ad				
Oct-22	Coho	F		Ad				
Oct-22	Coho	M		UM				
Oct-22	Coho	F		Ad				
Oct-23	no fish							
Oct-24	no fish							
Oct-25	no fish							
Oct-26	Coho	F		UM				
Oct-26	Coho	F		UM				
Oct-27	no fish							
28-Oct	Coho	M				Mit/eggs Seine		
28-Oct	Coho	M				Mit/eggs Seine		
28-Oct	Coho	M				Mit/eggs Seine		
28-Oct	Coho	M				Mit/eggs Seine		
28-Oct	Coho	F				Mit/eggs Seine		
28-Oct	Coho	F				Mit/eggs Seine		
28-Oct	Coho	F				Mit/eggs Seine		
28-Oct	steelhead	M				Seine		
28-Oct	dolly/bt					Seine		
28-Oct	dolly/bt					Seine		
28-Oct	dolly/bt					Seine		
28-Oct	Whitefish	x75				Seine		
Oct-29	no fish							
Oct-30	no fish							
Oct-31	no fish							

Nov-01 Pulled Fence

Terms:

- Ad
- LV Left Ventral Clip
- RV Right Ventral Clip
- LM Left Max Clip
- RM Right Max Clip
- UM Unmarked

*Length: For Coho Post Orbital Hypaural Length from back of eye to Caudal Peduncle
For Steelhead "Fork Length"; Nose Fork Length; from lip of nose to 'y' of fork on tail.

Appendix II Dead Pitch

Date	Species	Sex	Marks	Comments
2-Sep	Chinook	M	Adipose Absent	
2-Sep	Chinook	M	Adipose Absent	
3-Sep	Pink	N/A		
3-Sep	Pink	N/A		
4-Sep	Chinook	M	Wild	
4-Sep	Chinook	M	Wild	
4-Sep	Chinook	M	Wild	
4-Sep	Chinook	M	Wild	
4-Sep	Chinook	M	Wild	
4-Sep	Chinook	F	Wild	Right Operculum Punch
5-Sep	Chinook	M	Wild	
5-Sep	Chinook	F	Adipose Absent	
5-Sep	Chinook	M	Wild	
5-Sep	Chinook	M	Adipose Absent	
5-Sep	Chinook	M	Wild	
6-Sep	Chinook	M	Wild	
6-Sep	Chinook	M	Adipose Absent	Left Operculum Punch
6-Sep	Pink	M	Wild	
6-Sep	Chinook	M	Wild	
7-Sep	Chinook	M	Wild	
7-Sep	Chinook	M	Adipose Absent	Right Operculum Punch
7-Sep	Chinook	M	Adipose Absent	Right Operculum Punch
7-Sep	Chinook	M	Wild	
7-Sep	Chinook	M	Adipose Absent	
10-Sep	Chinook	M	Wild	Right Operculum Punch
10-Sep	Chinook	M	Wild	
10-Sep	Chinook	M	Wild	
10-Sep	Pink	M	Wild	
10-Sep	Northern SF	F	Wild	
10-Sep	Chinook	M	Adipose Absent	332678E
11-Sep	Pink	M	Wild	
11-Sep	Chinook	M	Wild	
11-Sep	Chinook	M	Wild	
12-Sep	Chinook	F	Wild	
12-Sep	Pink	F	Wild	
13-Sep	Chinook	M	Wild	
13-Sep	Pink	F	Wild	
13-Sep	Chinook	F	Wild	
15-Sep	Pink	F	Wild	
15-Sep	Pink	M	Wild	
15-Sep	Pink	M	Wild	
15-Sep	Chinook	M	Wild	
15-Sep	Pink	F	Wild	
15-Sep	Chinook	M	Wild	
15-Sep	Coho	M	Wild	Left Operculum Punch
17-Sep	Whifish			
18-Sep	Pink	F	Wild	

Appendix II Dead Pitch

Date	Species	Sex	Marks	Comments
18-Sep	Pink	F	Wild	
19-Sep	Coho	M	Wild	
20-Sep	Coho	F	P-RM	
20-Sep	Pink	F	Wild	
20-Sep	Pink	F	Wild	
21-Sep	Whifish			
21-Sep	Coho	F	Adipose Absent	
21-Sep	Coho	F	Adipose Absent	
23-Sep	Pink	F	Wild	
23-Sep	Whifish			
24-Sep	Coho	F	Adipose Absent	50% Spawmed
30-Sep	Coho	F	Adipose Absent	
3-Oct	Coho	F	Adipose Absent	
3-Oct	Coho	F	Adipose Absent	
3-Oct	Coho	M	Adipose Absent	L-Op/Lmax
3-Oct	Coho	F	Adipose Absent	
5-Oct	Coho	F	Adipose Absent	
6-Oct	B/DV			
8-Oct	B/DV			
12-Oct	Coho	F	Adipose Absent	
13-Oct	Coho	F	Wild	Left Operculum Punch
16-Oct	B/DV	M	Adipose Absent	Left Operculum Punch
18-Oct	Coho	M	Adipose Absent	Left Operculum Punch
18-Oct	Coho	M	Adipose Absent	Left Operculum Punch
18-Oct	Coho	M	Adipose Absent	Left Operculum Punch
18-Oct	Coho	F	Adipose Absent	Left Operculum Punch
18-Oct	Coho	F	Adipose Absent	Left Operculum Punch
19-Oct	Coho	F	Adipose Absent	Left Operculum Punch
19-Oct	Coho	M	Adipose Absent	Left Operculum Punch
19-Oct	Coho	F	Adipose Absent	Left Operculum Punch
20-Oct	Coho	M	Adipose Absent	Left Operculum Punch
20-Oct	Coho	F	Wild	Left Operculum Punch
20-Oct	Coho	F	Adipose Absent	Left Operculum Punch
20-Oct	Coho	F	Adipose Absent	Left Operculum Punch
20-Oct	Coho	M	Wild	Left Operculum Punch
22-Oct	Coho	F	R/M	
22-Oct	Coho	M	R/M	
22-Oct	Coho	F	Adipose Absent	Left Operculum Punch
22-Oct	Coho	M	Adipose Absent	Left Operculum Punch
22-Oct	Coho	F	Adipose Absent	Left Operculum Punch
22-Oct	Coho	F	Adipose Absent	Left Operculum Punch
22-Oct	Coho	M	Adipose Absent	Left Operculum Punch
22-Oct	Coho	F	Adipose Absent	Left Operculum Punch
22-Oct	Coho	M	Adipose Absent	Left Operculum Punch
22-Oct	Coho	F	Adipose Absent	Left Operculum Punch
23-Oct	Coho	M	Adipose Absent	Blue Tag 22418 MIF
23-Oct	Coho	M	Adipose Absent	Left Operculum Punch
23-Oct	Coho	M	Adipose Absent	Blue Tag 20086 MIF
23-Oct	Coho	M	Adipose Absent	

Appendix II Dead Pitch

Date	Species	Sex	Marks	Comments
23-Oct	Coho	F	Adipose Absent	Left Operculum Punch
23-Oct	Coho	F	Adipose Absent	Left Operculum Punch
23-Oct	Coho	F	Adipose Absent	Left Operculum Punch Blue Tag 22394 M/F
23-Oct	Coho	F	Adipose Absent	Left Operculum Punch
23-Oct	Coho	M	Adipose Absent	Left Operculum Punch Tag # 3060 M/S
23-Oct	Coho	F	Adipose Absent	Left Operculum Punch
23-Oct	Coho	F	Adipose Absent	Left Operculum Punch
23-Oct	Coho	F	Wild	Left Operculum Punch
24-Oct	Coho	F	Adipose Absent	Left Operculum Punch
24-Oct	Coho	M	Adipose Absent	Left Operculum Punch
24-Oct	Coho	F	Adipose Absent	Left Operculum Punch
24-Oct	Coho	M	Wild	Left Operculum Punch
24-Oct	Coho	F	Adipose Absent	Left Operculum Punch
24-Oct	Coho	F	Adipose Absent	Left Operculum Punch
25-Oct	B/Dv			
25-Oct	B/Dv			
25-Oct	Coho	F	Adipose Absent	Left Operculum Punch
25-Oct	Coho	F	Adipose Absent	Left Operculum Punch
25-Oct	Coho	M	Adipose Absent	Left Operculum Punch
25-Oct	Coho	F	Adipose Absent	Left Operculum Punch
1-Nov	Coho	M	Adipose Absent	Left Operculum Punch
1-Nov	Coho	M	Wild	Left Operculum Punch
1-Nov	Coho	F	Adipose Absent	Left Operculum Punch
1-Nov	Coho	F	Adipose Absent	Left Operculum Punch
1-Nov	Coho	F	Adipose Absent	Left Operculum Punch
1-Nov	STH	F	Wild	
2-Nov	Coho	F	Adipose Absent	Left Operculum Punch