

**1996 Lower Skeena River Chinook Salmon Creel Survey &
Biological Sampling Program**

Skeena River Green Plan Project #34

*performed by the
Terrace Salmonid Enhancement Society
for the
Department of Fisheries and Oceans (Canada)*

by Ian Bergsma
Terrace Salmonid Enhancement Society

ABSTRACT

The 1996 Lower Skeena River Chinook Salmon Creel Survey & Biological Sampling Program was carried out between the mouth of the Kitsumkalum River and Polymar Bar from April 25 to July 8 with the use of both riverboat and vehicle. The program was conducted to obtain information on, and to generate estimates of, angling effort, catch and species composition (through angler interviews), and to collect chinook biosamples so that the stock composition of chinooks (through genetic coding methods) caught in the sports fishery can be determined.

During the study period a total of 1357 anglers were interviewed with local anglers accounting for 81.2% of interviewed anglers, B.C. residents 9.4%, non resident Europeans 5.8%, non resident Canadians 2.3% and non resident Americans 0.65%. Guided anglers represented 2.1% of all anglers and all were non resident European (representing 36.7 % of all non resident European anglers). Anglers spent an estimated 22 488.3 hours angling during the study period catching an estimated 537 chinook salmon (480 kept, 57 released), 142 steelhead (23 kept, 119 released) and 172 trout (121 kept, 51 released). A total of 99 chinook biosamples and 102 scale samples were obtained from anglers during the study period.

INTRODUCTION

The Skeena River and its tributaries support a world renowned sport fishery for trophy chinook salmon (*Onchorhynchus tshawytscha*), coho salmon (*O. kisutch*), steelhead (*O. mykiss*) and, in the past few years, a popular sport fishery for sockeye salmon (*O. nerka*) and pink salmon (*O. gorbuscha*). Chinook salmon stocks in the Skeena River system can be broken down into three broad groupings: 1) upper Kitsumkalum River spring chinooks (Cedar River and Clear Creek), 2) upper Skeena River spring and summer chinooks and 3) lower Skeena River summer chinooks (the largest component indigenous to the lower Kitsumkalum River). In 1996 commercial fishing of chinook and other salmon species in Area 4 (mouth of the Skeena River) began in late June with two openings for chinook salmon (Cox-Rogers, pers. comm.).

The upper Kitsumkalum River chinooks, known locally as "spring run" chinooks, migrate through the Skeena and Kitsumkalum Rivers from mid April to late June to their spawning grounds in Clear Creek and the Cedar River and are highly prized by sports fishermen in the Terrace area. Despite enhancement efforts of the Terrace Salmonid Enhancement Society through the Department of Fisheries and Oceans Salmonid Enhancement Program the run strength (population estimates by the Terrace Salmonid Enhancement Society) of these "spring run" chinook salmon has, in recent years, declined much to the chagrin of fishery managers and sportsfishermen. A combination of logging related impacts, riverine flood events, poor ocean survival rates and ocean and river fishing pressure (commercial, recreational and native food fishing) has resulted in a catch and release regulation for 1996 for adult chinook (forklength greater than 65 cm) (B.C. Freshwater Sportfishing Regulations Synopsis, 1996).

The Lakelse River, which has also seen declines in chinook stocks from historical levels, joins with a side channel of the Skeena River approximately 2 km upstream of the Lakelse River mouth (during freshet periods this section of river is heavily influenced by the Skeena River). Directly upstream of this confluence between the mainstem Lakelse River and the Skeena River side channel is the Lakelse River Logging Bridge. This location is a popular and productive fishing location with resident and non-resident sportsfishermen which at times can see numerous fishermen on the bridge in search of chinook salmon. The debate among anglers and fishery managers is whether chinook caught at the bridge are all Lakelse River fish or a mix of Lakelse River chinooks and upper Skeena River chinooks which are using the side channel as a shortcut and the 'clear and slower water of the Lakelse River' to rest and flush their gills.

Accordingly, a proposal from the Terrace Salmonid Enhancement Society, that was supported by the Skeena River Green Plan Technical Committee, requested funding for a 1996 spring creel survey and collection of chinook salmon biosamples (for genetic coding and stock identification purposes) caught in the Skeena River sports fishery below the mouth of the Kitsumkalum River so that information could be gathered which will aid fishery managers in future decisions.

Specific objectives of the program were as follows:

1. Obtain as many biological and scale samples of chinook salmon as possible throughout the survey area.
2. Assess angling effort, catch and species composition and generate estimates of angler effort and catch upon various chinook stocks to aid in fisheries management decisions.
3. Comment on observed species timing in the sports fishery.
4. Obtain data, through genetic coding analysis on collected chinook samples on when different chinook stocks migrate through the Skeena River mainstem. In particular, to determine if any other chinook stocks are migrating through the Skeena River at the same time as the upper Kitsumkalum River chinook salmon are known to be migrating and to determine the stock composition of chinook salmon caught at the Lakelse River logging bridge.

Description of Study Area and Sport Fishery

The Skeena River originates in the high mountain valleys of the Skeena Range in northwestern British Columbia and flows for approximately 560 km, draining an area of 39,000 km² before entering the Pacific Ocean just south of Prince Rupert (O'Neill & Lewynsky, 1985) (figure1).

The section of mainstem river chosen for the creel survey and collection of biological samples extends from the mouth of the Kitsumkalum River to Polymar Bar, a distance of about 80 km (figure 2). For the purposes of the study this section of the mainstem Skeena River was divided into two zones: Zone 1 started at the mouth of the Kitsumkalum River and extended to the Exstew River, Zone 2 is from the Exstew River

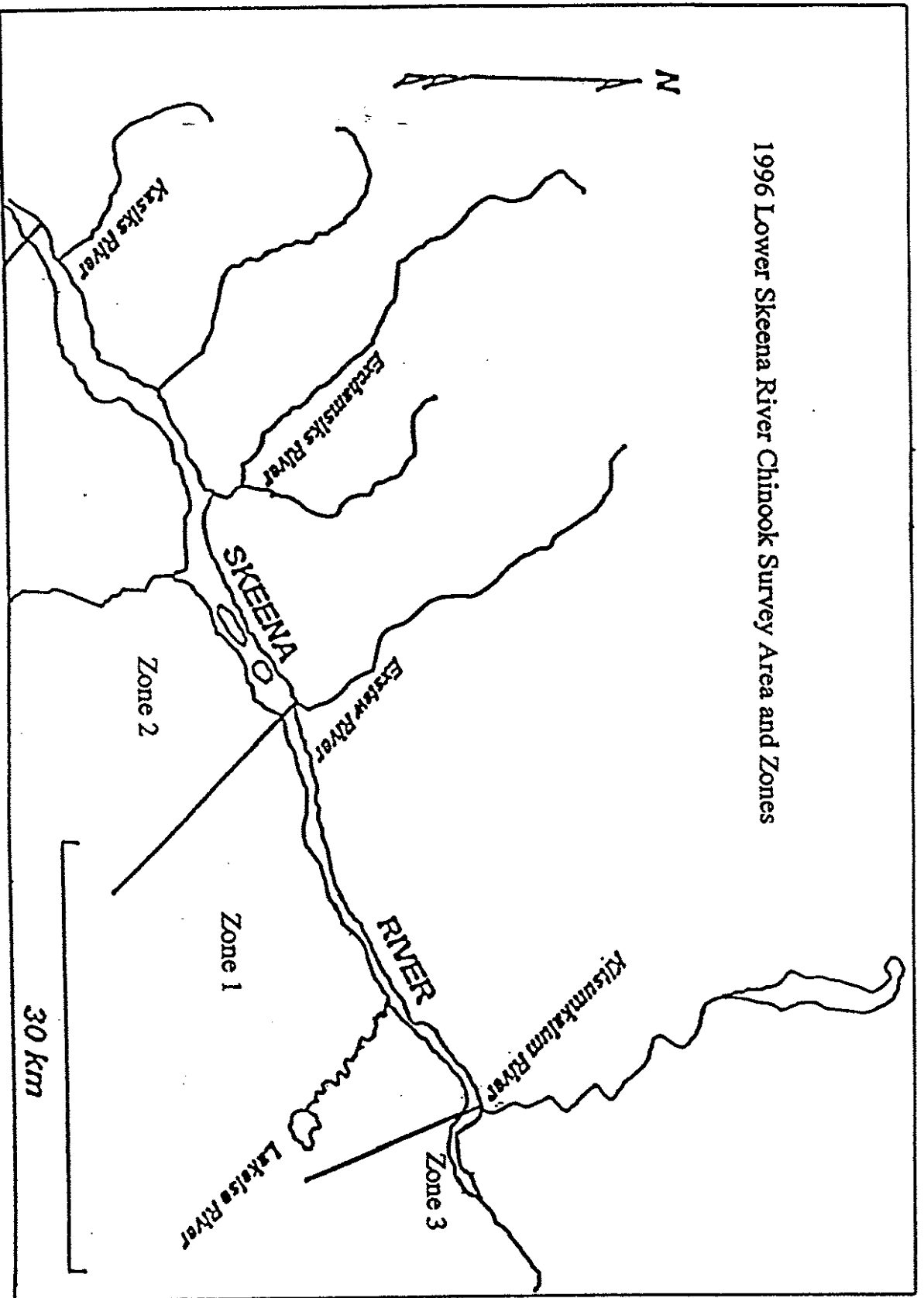


Figure 2: 1996 Lower Skeena River Chinook Survey Area and Zones.

downstream to Polymar Bar (during the last week of the study anglers above the mouth of the Kitsumkalum River were interviewed with this area being referred to as Zone 3).

The Skeena River sports fishery begins with spring run steelhead in March and is followed by the Kitsumkalum "spring run" chinook salmon in late April and through May with the upper and lower Skeena River summer chinooks being fished for from mid June until early August. Fishing and river conditions in the study area can change dramatically on a day to day basis as a result of the discharges of numerous tributaries (in particular the discharges of the Zymoetz, Kitseguecla and Bulkley Rivers can have a dramatic impact upon fishing in the study area). The spring freshet interrupts the fishery from as early as mid May to as late as mid June. However, as a result of the large snow pack and a cold spring, 1996 saw a prolonged freshet, lasting from mid May until early July, making the mainstem Skeena River unfishable and wiping out the sports fishery on upper Skeena River chinooks, as well as having a significant impact upon the lower Skeena River chinook fishery. Due to the unfavourable water conditions only a few places were fishable for the vehicle fisherman during the study period: 1) Lakelse River logging bridge (in zone 1) and in zone 2, 2) mouth of the Kasiks River, 3) mouth of the Exchamsiks River and 4) mouth of the Exstew River (observed to be fished infrequently during the study period).

METHODS:

The survey was conducted by both riverboat and vehicle from the last week of April through the first week of July. The survey area was divided into spatial zones corresponding to riverine landmarks (Figure 2). The zonal breakdown was similar to that used by O'Neill & Lewynsky (1985) and Tallman (1995) for the 1984 and 1995 lower Skeena River Creel Surveys.

The survey design was roving in nature, with one technician allocated to field data collection. Initially, the survey was scheduled to encompass just the May and early June chinook fishery. Here, a stratified two-stage probability survey design (Malvestuto et al, 1978) was drafted for the time period (table 1). Sampling probabilities were assigned based on expected effort and activity patterns (J. Culp, pers comm). The fishing season was divided into two-week blocks with the 14 days within each block being stratified into weekdays and weekend days (holidays were considered to be weekend days), and days were further stratified into AM (0600-1100), Noon (1100-1600), and PM (1600-2100)

Daily Time Period Probabilities		
Shift	Time Period	Probability
1	0600-1100	0.45
2	1100-1600	0.35
3	1600-2100	0.2
		1

Survey Area Probabilities	
Zone	Probability
1	0.4
2	0.6
1	

Shift	Location	Code	Probability	# ranges
1	Zone 1	A	0.18	0-18
1	Zone 2	B	0.27	19-45
2	Zone 1	C	0.14	47-59
2	Zone 2	D	0.21	60-80
3	Zone 3	E	0.08	81-88
3	Zone 3	F	0.12	89-100

Table 1: 1996 Lower Skeena Chinook Creel
Survey Design

sampling periods. Daily stints were allocated to sample location and time period by random draw (table 2).

Adverse river conditions by the third week of May necessitated a departure from the survey design outlined in table 2. As survey information could not be obtained by jet-boat, a truck survey was initiated which attempted to follow the general design outlined in table 2. The water conditions in the Skeena River during the truck surveys were such that the mainstem itself was unfishable, leaving only a few scattered locations for fishing, resulting in survey effort being concentrated on those regions of the river primarily accessible to vehicle fishermen only.

Riverboat Surveys

Riverboat surveys were conducted using an 18 foot aluminum riverboat powered by a 90 horsepower outboard jet motor starting on April 25, 1996 and ending on May 22, 1996. Surveys were started at the upstream end of the survey zone with anglers being enumerated during the downstream trip (approximately 1.5 hours) and angler interviews taking place during the return trip. Angler interviews provided information on the number of people, anglers and rods in each fishing party; fishing method; place(s) of origin; species targeted; number of fish, and species, retained and released (refer to table 3 and Appendix 3 for survey form) as well as allowing for the collection of chinook biosamples.

Truck Surveys

As a result of prolonged high water conditions along with large amounts of debris in the Skeena River (lasting from late May until early July) riverboat surveys were discontinued due to safety considerations. The remainder of the study was conducted with a 4 wheel drive truck starting on May 24, 1996 and ending on July 8, 1996.

The truck survey involved surveying Zone 1 for a period of 2.5 hours and Zone 2 for another 3 hours during which all anglers present at a location would be interviewed upon arrival of the surveyor with subsequent anglers being interviewed soon after angling commenced and the time of departing anglers being recorded in the creel survey form. During the time the surveyor was at a fishing location and not interviewing anglers he would angle in order to obtain genetic samples from chinook salmon. This method of remaining on site for an extended period of time enabled prompt collection of biological samples from chinook that were killed as well as enabling live sampling on chinook which anglers were releasing.

WEEKEND STRATA				
Date	Day	#	Randomly Selected?	Sampling Location
11-May	S	1	X	B
12-May	Su	2	X	A
18-May	S	3	X	E
19-May	Su	4	X	D
25-May	S	5	X	A
26-May	Su	6	X	B
1-June	S	7	X	C
2-June	Su	8	X	F
8-June	S	9	X	A
9-June	Su	10	X	C
15-June	S	11	X	B

WEEKDAY STRATA				
Date	Day	#	Randomly Selected?	Sampling Location
8-May	W	1		
9-May	Th	2		
10-May	F	3	X	A
13-May	M	4		
14-May	T	5	X	C
15-May	W	6	X	D
16-May	Th	7	X	B
17-May	F	8		
20-May	M	9		
21-May	T	10	X	A
22-May	W	11	X	E
23-May	Th	12		
24-May	F	13	X	D
27-May	M	14	X	B
28-May	T	15		
29-May	W	16	X	C
30-May	Th	17		
31-May	F	18	X	F
3-June	M	19	X	B
4-June	T	20		
5-June	W	21		
6-June	Th	22	X	E
7-June	F	23	X	B
10-June	M	24		
11-June	T	25	X	A
12-June	W	26		
13-June	Th	27	X	B
14-June	F	28	X	D
17-June	M	29		
18-June	T	30		
19-June	W	31		
20-June	Th	32		
21-June	F	33		
24-June	M	34		
25-June	T	35		
26-June	W	36		
27-June	Th	37		
28-June	F	38		

Table 2: Weekend & Weekday Strata for Creel Survey

Surveys were conducted with three different shift periods: 1) 7 am to 3 pm, 2) 10 am to 6 pm, and 3) 2 pm to 10 pm and two different shift orders: 1) Zone 1, Zone 2 and 2) Zone 2, Zone 1 resulting in a total of 6 different possible shifts being worked. The combination of which shift period and which shift order for any particular survey day was generated at random, with all weekend days including holidays being surveyed and 3 out of 5 weekdays being surveyed at random. The last week of the study (July 4-8, 1996) saw anglers in Zone 3 (Ferry Island and Copper Bar) being interviewed so that biosamples upstream of the Kitsumkalum River could be obtained.

Analysis of Data:

Fishing effort estimates for both the boat and truck portions of the creel survey were based on the angler count data. Daily counts were converted to angler-hours by multiplying the number of anglers by the number of hours in the sampling period. It was assumed that the number of anglers counted was an unbiased estimate of the number of angler-hours in progress at any given instant, i.e. an "instantaneous count." As the sampling units represented only a portion of the anglers present on each day, the angler-hours within each sampling unit were expanded to an estimate of total angler-hours for the entire day by dividing the sampling unit value by the sampling probability associated with each sampling unit.

Catch-per-unit-effort (CPUE) estimates were obtained by dividing recorded harvest by recorded effort. As the survey was a roving design, recorded (incomplete trip) effort was taken as the number of hours from the time the fishing trip began to the time of the interview (in the case of the truck survey, effort was calculated until the time at which surveyor left site). Calculated CPUE for each sampling unit was assumed to represent CPUE for the entire day. Total daily harvest by species was calculated by multiplying mean daily CPUE by the total estimated effort.

Total effort, catches and variances for the survey period were estimated using the formulas of O'Neill & Lewynsky (1984):

1) Total Angler-Hours (N_{yst})

$$N_{yst} = \sum_{i=1}^L N_i y_i$$

Variance of Total Angler-Hours $V(N_{yst})$

$$V(N_{yst}) = \sum_{i=1}^L N^2 (N_i - n_i / N_i) S_i^2 / n_i$$

where:

N_i = total number of sampling units in each stratum

n_i = sample size

y_{st} = mean effort for each stratum

S_i^2 = stratum sample variance

L = number of strata

2) Total Catch $E(xy)$

$$E(xy) = E(x)E(y)$$

Variance of Total Catch

$$V(xy) = E^2(x)V(y) + E^2(y)V(x) + V(x)V(y)$$

where:

x = total effort

y = mean CPUE

Biological Sampling and Data Collection of Chinook Salmon

Data collected for sampled fish included: location of capture, date, angler's interview #, nose-fork length, sex, sexual maturity, scale book #, scale # and whether or not the adipose fin was clipped. In the case of the adipose fin being clipped, fish were also checked to see if their right ventral fin was clipped as the Toboggan Creek Hatchery, near Smithers, clips both the adipose fin and the right ventral fin prior to release from the

hatchery (M. O'Neill, pers. comm.). Biological samples taken consisted of, or a portion of, 5 scales per fish, heart, liver, eye, piece of flesh and an adipose fin clip.

Due to the nature of the truck portion of the creel survey, and some extremely good timing during the jet boat portion, the surveyor was able to obtain numerous biological samples immediately after a fish was landed. To increase the chance of obtaining a complete biological sample from a fish the surveyor would offer the successful angler complimentary fish cleaning in exchange for permission to take a biosample. This approach was very popular with anglers, in fact anglers who were out regularly would instruct the surveyor, upon catching and keeping a chinook, to get to work and take a sample and clean their fish. Even if the angler wanted to have photos taken at home or weigh the fish at a local tackle shop the anglers would usually allow for the adipose fin and scales to be taken. Sampling of chinooks which were to be released was accomplished with the aid of the angler who would hold the fish in the water while the surveyor obtained a clip of the adipose fin, five scales, nose-fork length and sexed the fish. Sampling was done quickly to allow the prompt revival of the fish and if the fish was deemed to be in need of immediate revival sampling was not conducted.

Upon obtaining a biological sample it was stored in a small cooler containing 4 ice substitute packs which were stored at a temperature of -70°C when surveys were not being conducted. During the surveys the ice packs would remain frozen and would freeze the biological samples before they could be placed in long term storage at -70°C ; when conducting the study, samples would be placed in long term storage at the earliest possible opportunity.

RESULTS AND DISCUSSION:

Angler Use

From April 25 to July 8, 1996 the study area was surveyed 53 times with 1357 anglers being interviewed (table 6 & Appendix 3). The roving boat survey portion of the study accounted for 19 jet boat surveys from April 25 to May 22, 1996 with 161 anglers being interviewed (table 4). The roving truck portion accounted for 34 truck surveys from May 24 to July 8, 1996 with 1196 anglers being interviewed (table 5). During the study period an estimated 22 488.3 angler-hours were fished (table 7 & Appendix 1) (8729.7 angler-hours during the boat surveys and 13758.6 angler-hours during the truck surveys).

Origin	# People	# Anglers	# Rods
1	113	107	109
2	5	5	5
3	0	0	0
4	0	0	0
5	2	2	2
Total	120	114	116

0 anglers guided

Table 4a: Number and Residence of Anglers
Interviewed during Weekend Boat Surveys

Origin	# People	# Anglers	# Rods
1	47	48	48
2	1	1	1
3	0	0	0
4	0	0	0
5	0	0	0
Total	48	47	49

0 anglers guided

Table 4b: Number and Residence of Anglers
Interviewed during Weekday Boat Surveys

Origin	# People	# Anglers	# Rods
1	160	153	157
2	8	8	8
3	0	0	0
4	0	0	0
5	2	2	2
Total	168	161	166

0 anglers guided

Table 4c: Number and Residence of Anglers
Interviewed during All Boat Surveys

Origin	Non Guided			Guided			Non Guided & Guided		
	# People	# Anglers	# Rods	# People	# Anglers	# Rods	# People	# Anglers	# Rods
1	500*	507*	511*	0	0	0	500	507	511
2	63	58	59	0	0	0	63	58	59
3	24	21	21	0	0	0	24	21	21
4	4	4	4	0	0	0	4	4	4
5	20	20	20	2	2	2	22	22	22
6	9	9	9	0	0	0	9	9	9
Total	710	619	624	2	2	2	712	621	626

* Includes 1 guide angling with 1 rod

Table 5a: Number and Residence of Anglers Interviewed during Weekend Truck Surveys

Origin	Non Guided			Guided			Non Guided & Guided		
	# People	# Anglers	# Rods	# People	# Anglers	# Rods	# People	# Anglers	# Rods
1	500*	442*	449*	0	0	0	500	442	449
2	70	63	63	0	0	0	70	63	63
3	13	10	10	0	0	0	13	10	10
4	9	5	5	0	0	0	9	5	5
5	30	28	29	27	27	28	67	55	56
Total	631	548	556	27	27	28	658	575	582

* Includes 7 guides of which 4 were angling with 4 rods

Table 5b: Number and Residence of Anglers Interviewed during Weekday Truck Surveys

Origin	Non Guided			Guided			Non Guided & Guided		
	# People	# Anglers	# Rods	# People	# Anglers	# Rods	# People	# Anglers	# Rods
1	1099*	949*	960*	0	0	0	1099	949	960
2	133	121	122	0	0	0	133	121	122
3	37	31	31	0	0	0	37	31	31
4	13	9	9	0	0	0	13	9	9
5	50	48	49	29	29	28	79	77	77
6	9	9	9	0	0	0	9	9	9
Total	1341	1167	1180	29	29	28	1370	1196	1208

* Includes 8 guides of which 5 were angling with 5 rods

Table 5c: Number and Residence of Anglers Interviewed during All Truck Surveys

Origin	Non Guided			Guided			Guided & Non Guided		
	# People	# Anglers	# Rods	# People	# Anglers	# Rods	# People	# Anglers	# Rods
1	1259	1102	1117	0	0	0	1259	1102	1117
2	139	127	128	0	0	0	139	127	128
3	37	31	31	0	0	0	37	31	31
4	13	9	9	0	0	0	13	9	9
5	52	50	51	29	29	28	81	79	79
6	9	9	9	0	0	0	9	9	9
Total	1509	1328	1345	29	29	28	1538	1357	1373

Table 6: Number and Residence of Anglers Interviewed during Creel Survey

Catch and Harvest Estimates Zones 1+2									
Survey Type		Days	Period	Angler Hours	Chinook Kept	Chinook Released	Steelhead Kept	Steelhead Released	Trout Kept
Roving	Boat	Weekday	May 2-May 16	5276.7	99	0	23	65	43
Roving	Boat	Weekend	April 27-May 19	3453	22	0	0	52	28
Roving	Truck	Weekday	May 24-July 8	9342.5	246	45	0	1	33
Roving	Truck	Weekend	May 25-July 7	4416.1	113	12	0	1	17
TOTAL				22488.3	480	57	23	119	121
									51

Table 7: 1996 Lower Skeena River Sport Fishery Survey Summary Table

Angler activity (start of fishing time) (table 8 and figure 3) throughout the study period was found to be highest during the morning (0300 - 1100) at 46.3% with the afternoon (1100 - 1600) being 35.5% and the evening (1600 - 2100) being 18.1%. These observed percentages of angler effort are in agreement with the expected probabilities of 45%, 35% and 20% for morning, afternoon and evening which were used in the design of the creel survey (table 1).

Local anglers represented the largest number of anglers (81.2%) followed by British Columbia residents (9.4%), non resident European (5.8%), non resident Canadians (2.3%), non resident American (0.65%) and unknowns (0.65%) (table 7). Unknowns were anglers fishing out of boats who were out of earshot; the surveyor would ask anglers onshore observing the angling activity from the boats how long the anglers in the boats had been fishing and if they had any success. Guided anglers represented 2.1% (29 of 1357) of all anglers and were all non resident Europeans (representing 36.7% of all non resident European anglers); the total number of guided trips interviewed was 8. It should be noted for many of the non resident European anglers, although not with a guide, were staying at a local lodge which has a largely European clientele which directs its guests to local fishing locations.

Catch and Catch Rates

Over the entire study period anglers caught, in zones 1 and 2 (table 7 and Appendix 1), an estimated 537 chinook salmon (480 kept, 57 released), 142 steelhead (23 kept, 119 released) and 172 trout (cutthroat, rainbow and dolly varden) (121 kept, 51 released). During the boat survey portion of the study an estimated 121 chinook, 140 steelhead and 106 trout were captured whereas during the truck survey portion of the study an estimated 416 chinook, 2 steelhead and 66 trout were captured. Chinook salmon represented 63.1% of angler catch with steelhead representing 16.7% of angler catch and trout being 20.2% of angler catch.

On average, anglers retained 73% of their catch; 89% of chinook, 16% of steelhead and 70% of trout. The overall average retention rate of 73% is lower than the rate of 78% found in the 1984 Lower Skeena River Creel Survey (O'Neill & Lewynsky, 1985); retention of chinook dropped from 94% in 1984 to 89% in 1996 whereas steelhead retention dropped from 41% in 1984 to 16% in 1996.

Angler Activity (Start of Fishing Time)

Time Period	Hour Ending	Angler Count	% Count	Shift %	Shift Period
300-0400	4	13	1.0%		
0400-0500	5	67	5.0%		
0500-0600	6	79	5.9%		
0600-0700	7	115	8.6%		
0700-0800	8	68	4.9%		
0800-0900	9	85	6.3%		
0900-1000	10	84	6.3%		
1000-1100	11	112	8.4%	46.3%	(0300-1100)
1100-1200	12	102	7.6%		
1200-1300	1	102	7.6%		
1300-1400	2	115	8.6%		
1400-1500	3	96	7.2%		
1500-1600	4	61	4.6%	35.5%	(1100-1600)
1600-1700	5	94	7.0%		
1700-1800	6	44	3.3%		
1800-1900	7	38	2.8%		
1900-2000	8	39	2.9%		
2000-2100	9	28	1.9%		
2100-2200	10	1	0.1%		
2200-2300	11	1	0.1%	18.1%	(1600-2100)
2300-2400	12		0.0%		
		1340	100.0%	100.0%	

Table 8: Angler Start Time Distribution

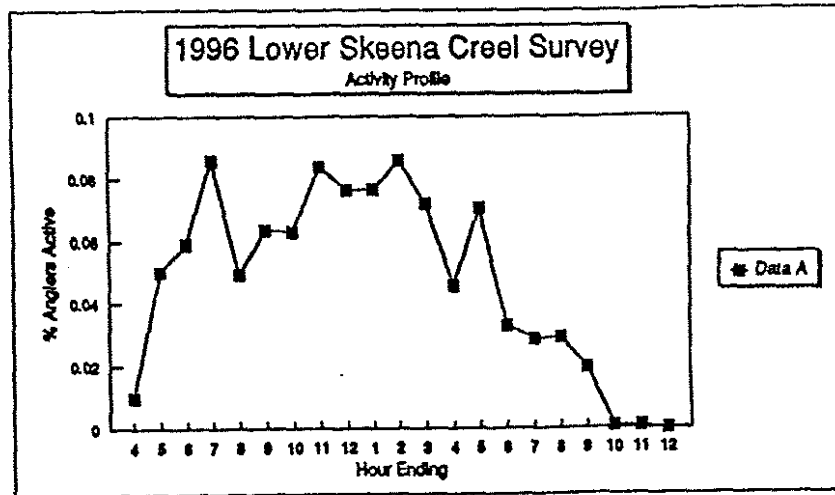
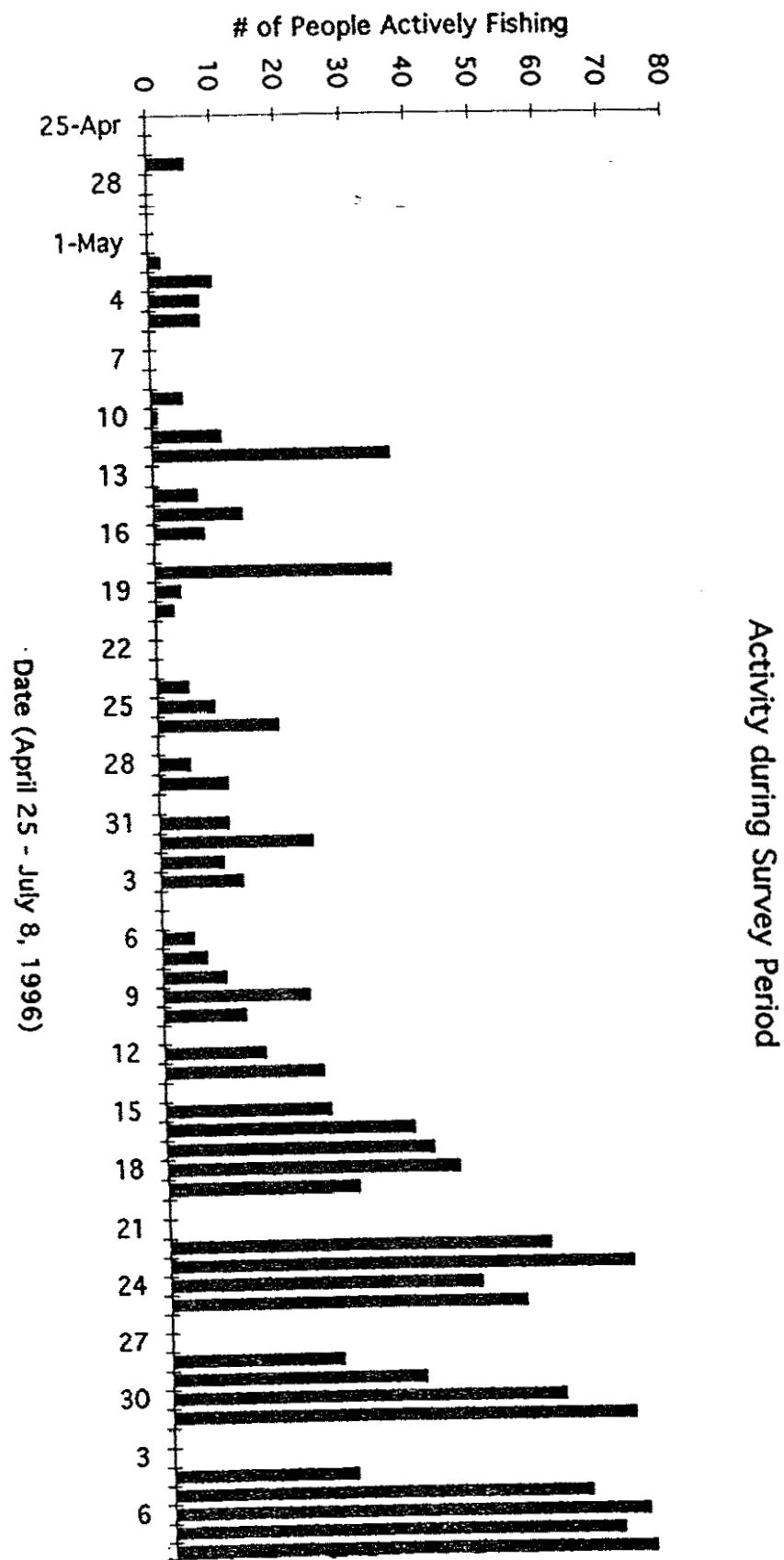


Figure 3: Angler Activity Profile

Figure 4: Angler Activity Through Survey Period.



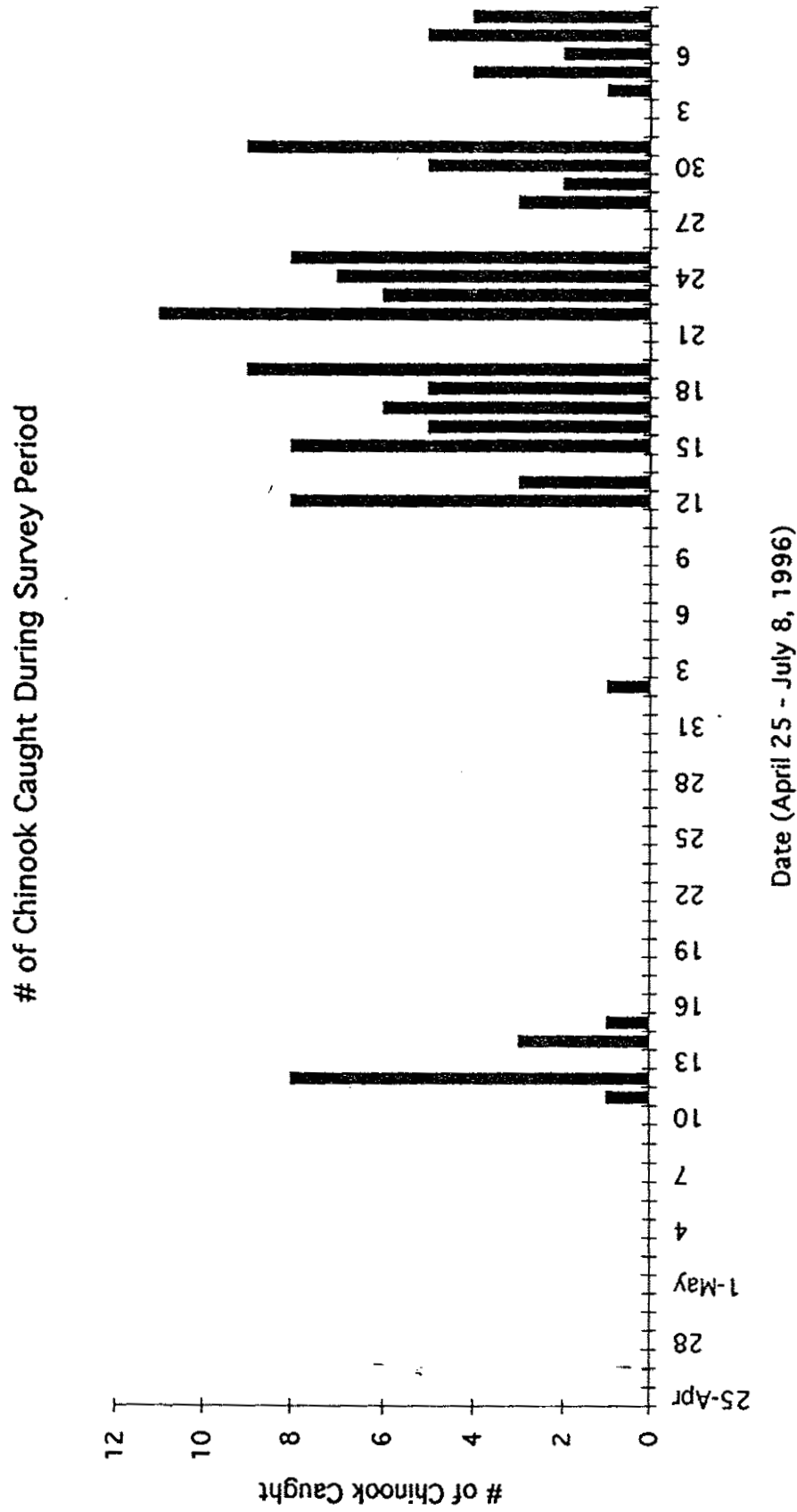


Figure 5: Number of Chinook Observed Caught during Survey Period.

Survey Type	Days	Chinook		Steelhead		Trout		Sockeye	
		Killed	Released	Killed	Released	Killed	Released	Killed	Released
Boat	Weekdays	4	0	1	1	3	5	0	0
Boat	Weekends	9	0	0	5	5	2	0	0
Truck	Weekends	48	8	0	1	4	0	1	1
Truck	Weekdays	40	18	0	1	1	12	1	0
Creel	All	99	26	1	8	13	19	2	1

Table 9: Observed Catches of Chinook, Steelhead, Trout and Sockeye during Creel Survey

Biological Samples:

Scale samples were taken from 102 chinook salmon with biosamples being taken from 99 chinook salmon with all being forwarded to the Pacific Biological Station (see Appendix 2 for complete chinook biological data). A total of 31 chinook biosamples were obtained from both the mouth of the Kasiks River and the Lakelse River Logging Bridge, 20 biosamples from the mouth of the Exchamsiks River, 1 from the mouth of the Exstew River and 16 from various locations on the Skeena River.

Stock Timing

The following observations are made from the sport catch data:

1. Steelhead appeared in the sports fishery during the first week of the creel survey and were observed into late May.
2. Chinook appeared in the sports fishery in mid May with a peak at that time before tailing off and then picking up again in early June (Figure 5). The first chinook observed caught at the mouth of the Kasiks River was on June 2, the first chinook observed at the Lakelse River Bridge was June 12 while the first chinook observed at the mouth of the Exchamsiks River was June 15.
3. During the boat survey portion of the study, when the Skeena River was fishable and chinook salmon were being caught, there were no chinook salmon observed, or reported caught at the mouth of the Kasiks River, even though anglers were present at this location.

Tackle Preference

The most popular method with anglers was plunking (bar fishing) with or without bait (the Lakelse River has a bait ban in place) followed by fishing with lures. Very few fly fishermen or float fishermen were encountered during surveys. In many instances plunk fishermen were observed to have taken over a fishing hole to such a degree that fishing from shore by any other method was made extremely difficult or impossible; this being

evident at the mouth of the Kasiks River and at the Lakelse River Bridge where up to 30 anglers were observed to be fishing from the bridge.

Regulation Infractions

Very few regulation infractions were observed during the creel survey as most anglers were aware of the site specific regulations and adhered to them. Infractions observed included using bait in an area which had a bait ban and fishing above a boundary for a closed species. When such infractions were noticed the surveyor or anglers who were aware of the regulations would make a friendly reminder to the infringing angler. Department of Fisheries and Oceans Fisheries Officers and Ministry of Environment, Lands and Parks Conservation Officers were observed on several occasions checking anglers at fishing locations.

SUMMARY

1. Local anglers accounted for 81.2% of the fishermen interviewed during the creel survey while resident British Columbians followed at 9.4%, non resident Europeans at 5.8%, non resident Canadians at 2.3%, non resident Americans at 0.65% and anglers of unknown origin accounted for 0.65%.
2. Anglers spent an estimated total of 22 488.3 hours angling in zones 1 and 2 during the survey period.
3. An estimated total of 537 chinook, 142 steelhead and 172 trout were caught during the study with 480 chinook (89%), 23 steelhead (16%) and 121 trout (70%) being killed. 73% of all fish caught during the study period were killed which is lower than the 78% observed in the 1984 Creel Survey conducted by O'Neill.
4. Scale samples were taken from 102 chinook salmon while biological samples were taken from 99 chinook salmon with 31 samples obtained at both the Lakelse River and Kasiks River, 20 samples at the Exchamsiks River, 16

samples from various points on the Skeena River and 1 sample from the mouth of the Exstew River.

5. Only 2.1% of all anglers were guided, all of which were non-resident Europeans (guided non-resident Europeans represented 36.7% of all non resident Europeans).
6. Very few angling regulation infractions were observed during the creel survey. The majority of anglers were knowledgeable of the regulations specific to the Skeena River.

ACKNOWLEDGEMENTS

Steve Cox-Rogers of the Department of Fisheries and Oceans (Prince Rupert) for his assistance in designing the program, methodology, data analysis and editorial comments. Elmer Fast of DFO (Prince Rupert) for his assistance in organizing and the startup of the creel survey. David Southgate of DFO (Prince Rupert) for arranging long term storage of biological samples. Jim Culp of the Terrace Salmonid Enhancement Society for his assistance throughout the entire creel survey program. The Sportsfishing Community at large who were willing participants in the 1996 Lower Skeena River Chinook Salmon Creel Survey and Biologic Sampling Program and greatly contributed to its success.

BIBLIOGRAPHY

Malvestuto, S.P., W.D. Davies, and W.L. Shelton, 1978. An evaluation of the roving creel survey with non uniform probability sampling. Trans. Am. Fish. Society, 107(2): 255 - 262.

Ministry of Environment, Lands and Parks (British Columbia), 1996. 1996-1997 British Columbia Freshwater Fishing Regulations Synopsis.

O'Neill, M. and V. Lewynsky, 1985. Lower Skeena River Creel Survey - 1984.

Personal Communications

S. Cox-Rogers, Dept. of Fisheries and Oceans, Stock Assessment Division, Prince Rupert.

J. Culp - Manager, Deep Creek Hatchery, Terrace Salmonid Enhancement Society.

M. O'Neill - Manager, Toboggan Creek Hatchery (Smithers).

Tallman, D., 1995. 1995 Lower Skeena River Sport Fishery Survey Summary Report. DFO Contract #: FP955047.

APPENDIX 1

Analysis Summary Tables for Zones 1 & 2 Boat & Truck Surveys

APPENDIX 2

Chinook Biological Data and Length Distributions

Table 11: Chinook Biological Data

Date	Interview #	Sample Location	Species	Length (mm)	Sex	Sexual Maturity	Scale Book Number	Scale Number	Adipose Marked	Comments
May 11/96	4	Esler Bar	F	910			57526	1	N	white flesh
May 12/96	4	Polymer Bar	M	770			57526	2	N	red flesh
May 12/96	4	Polymer Bar	M	700			57526	3	N	red flesh, caught yesterday
May 12/96	6	Polymer Bar	F	960			57526	4	Y	white flesh, 28 lbs.
May 12/96	5	Polymer Bar	M	890			57526	5	N	red flesh, 20 lbs.
May 12/96	11	Polymer Ch.	M	1000			57526	6	N	red flesh, 20 lbs.
May 12/96	11	Polymer Ch.	F	780			57526	7	N	red flesh
May 12/96	12	Andesite Bar	F	850			57526	8	Y	right ventral fin clipped, caught by Mike O'Neil
May 12/96	12	Andesite Bar	M	995			57526	9	N	red flesh, 30 lbs.
May 12/96	12	Andesite Bar	M	1090			57526	10	N	red flesh, 40 lbs.
May 14/96	1	Esler Bar	M	960			57502	1	Y	red flesh, small sperm
May 14/96	1	Esler Bar	M	835			57502	2	N	red flesh, small sperm
May 14/96	2	Esler Bar	M	860			57502	3	N	red flesh, small sperm
May 15/96	4	Polymer Bar	F	750			57502	4	N	red flesh, small eggs
May 15/96	6	Kaslo R.	F	805			57502	5	N	red flesh, small eggs
June 12/96	2	Lakeelse R.	F	985			57502	6	N	red flesh
June 12/96	4	Lakeelse R.	F	915			57502	7	N	red flesh
June 12/96	6	Kaslo R.	F	930			57502	8	N	released
June 12/96	6	Kaslo R.	F	850			57502	9	N	released
June 12/96	6	Kaslo R.	M	890			57502	10	N	released
June 12/96	6	Kaslo R.	M	990			57502	11	N	red flesh
June 12/96	6	Kaslo R.	F	990			57502	12	N	released
June 13/96	5	Kaslo R.	F	1040			57502	13	N	white flesh, big eggs, dark in colour
June 15/96	3	Kaslo R.	M	825			57502	14	N	red flesh, small sperm
June 15/96	3	Kaslo R.	F	975			57502	15	N	red flesh
June 15/96	5	Kaslo R.	N	660			57502	16	N	released
June 15/96	5	Kaslo R.	F	850			57502	17	N	released
June 15/96	6	Exchamsiks R.	F	660			57502	18	N	red flesh, no heart sample as ate by dog
June 15/96	6	Lakeelse R.	M	NA			57502	19	N	released
June 15/96	6	Lakeelse R.	M	NA			57502	20	N	released
June 15/96	6	Exchamsiks R.	M	605			57502	21	N	jack, red flesh, caught on time off
June 15/96	NA	Kaslo R.	M	725			57502	22	N	red flesh, sampled on time off
June 16/96	8	Kaslo R.	F	845			57502	23	N	red flesh, small eggs
June 16/96	12	Kaslo R.	M	960			57502	24	N	red flesh
June 16/96	21	Kaslo R.	M	890			57502	25	N	white flesh
June 17/96	7	Exchamsiks R.	F	965			57502	26	N	red flesh
June 17/96	7	Exchamsiks R.	F	900			57502	27	N	white flesh
June 17/96	17	Exchamsiks R.	F	905			57502	28	N	red flesh
June 17/96	19	Exchamsiks R.	M	695			57502	29	N	red flesh
June 18/96	1	Exchamsiks R.	F	900			57502	30	N	red flesh
June 18/96	1	Exchamsiks R.	F	1005			57502	31	N	red flesh
June 18/96	2	Exchamsiks R.	NA	NA			57502	32	N	released, 12 lbs.
June 18/96	2	Exchamsiks R.	F	1010			57502	33	N	red flesh
June 19/96	5	Lakeelse R.	M	965			57502	34	N	22 lbs, adipose fin chewed off
June 19/96	5	Lakeelse R.	F	1050			57502	35	N	red flesh
June 19/96	9	Exchamsiks R.	F	890			57502	36	N	red flesh
June 19/96	9	Exchamsiks R.	M	890			57502	37	N	red flesh
June 22/96	10	Lakeelse R.	M	1040			57502	38	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	39	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	40	N	red flesh
June 22/96	10	Lakeelse R.	F	630			57502	41	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	42	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	43	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	44	N	red flesh
June 22/96	10	Lakeelse R.	M	1040			57502	45	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	46	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	47	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	48	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	49	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	50	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	51	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	52	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	53	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	54	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	55	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	56	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	57	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	58	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	59	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	60	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	61	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	62	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	63	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	64	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	65	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	66	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	67	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	68	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	69	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	70	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	71	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	72	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	73	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	74	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	75	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	76	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	77	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	78	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	79	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	80	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	81	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	82	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	83	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	84	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	85	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	86	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	87	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	88	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	89	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	90	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	91	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	92	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	93	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	94	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	95	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	96	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	97	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	98	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	99	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	100	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	101	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	102	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	103	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	104	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	105	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	106	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	107	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	108	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	109	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	110	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	111	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	112	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	113	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	114	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	115	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	116	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	117	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	118	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	119	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	120	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	121	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	122	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	123	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	124	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	125	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	126	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	127	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	128	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	129	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	130	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	131	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	132	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	133	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	134	N	red flesh
June 22/96	10	Lakeelse R.	M	630			57502	135	N	red flesh
June 22/96	10	Lakeelse R.	F	920			57502	136	N	red flesh
June 22										

red flesh	N	10	57501	1	F	890	Kasiks R.	2	June 30/96
red flesh	N	1	57444	0	M	380	Excharmatis R.	20	June 30/96
red flesh	N	2	57444	1	F	995	Exstew R. along Hwy.	21	June 30/96
red flesh	N	3	57444	1	M	890	Excharmatis R.	3	July 1/96
adipose fin sample	N	4	57444	0	M	545	Kasiks R.	5	July 1/96
red flesh	N	5	57444	1	F	955	Kasiks R.	13	July 1/96
red flesh, scales only taken as fish in poor condition	Y	6	57444	1	F	900	Kasiks R.	15	July 1/96
red flesh	N	7	57444	1	M	1090	Lakeise R.	22	July 1/96
red flesh, smallish eggs, caught late last night	N	8	57444	1	F	865	Lakeise R.	22	July 1/96
red flesh, smallish eggs	N	9	57444	1	F	860	Lakeise R.	22	July 1/96
red flesh, smallish eggs	N	10	57444	1	F	890	Lakeise R.	24	July 1/96
red flesh	N	1	57445	1	F	935	Lakeise R.	25	July 1/96
eyeball sample	Y	2	57445	1	M	730	Ferry Island	25	July 1/96
red flesh	N	3	57445	1	F	965	Lakeise R.	5	July 4/96
red flesh, chrome bright fish	N	4	57445	1	F	935	Lakeise R.	8	July 5/96
red flesh	N	5	57445	1	F	1085	Kasiks R.	8	July 5/96
red flesh	N	6	57445	1	F	885	Kasiks R.	19	July 5/96
red flesh	N	7	57445	1	F	NA	Kasiks R.	25	July 6/96
heart & liver saved by anglers(25) at site for sample	unknown	NA	NA	1	F	NA	Excharmatis R.	NA	July 6/96
red flesh	N	7	57445	0	M	715	Copper Bar	35	July 6/96
red flesh, big eggs, dark in colour	N	8	57445	1	F	970	Copper Bar	2	July 7/96
white flesh	N	9	57445	1	F	920	Excharmatis R.	14	July 7/96
red flesh, dark in colour	N	10	57445	1	F	1035	Lakeise R.	4	July 8/96
white flesh, bright fish	N	1	57446	1	F	925	Lakeise R.	3	July 8/96
white flesh	N	2	57446	1	M	840	Kasiks R.	27	July 8/96

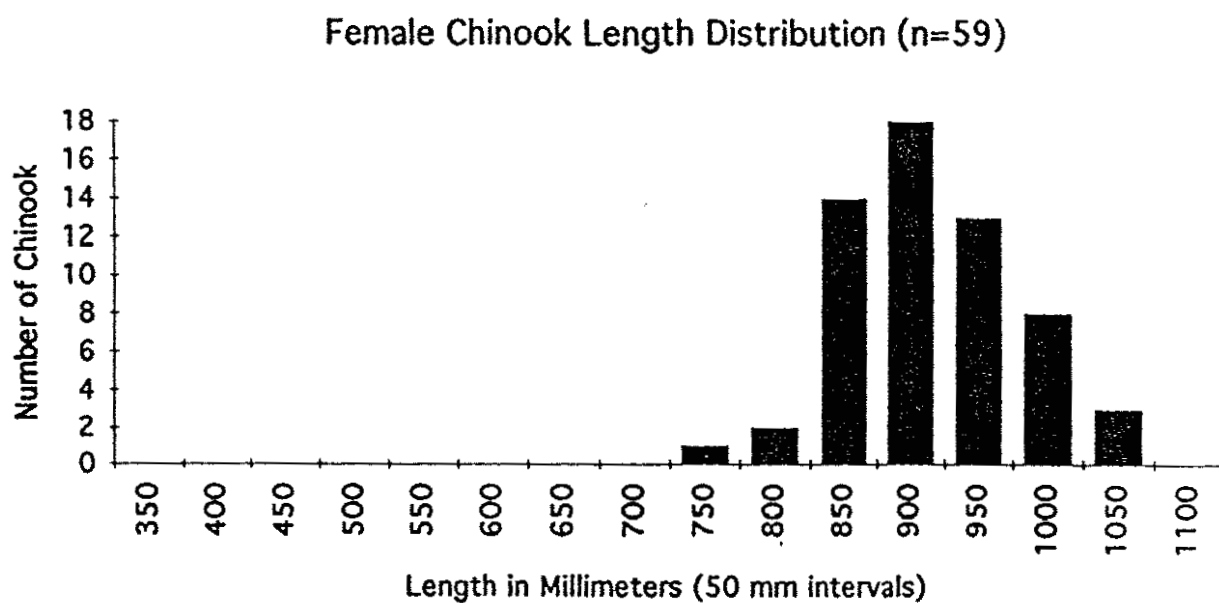


Figure 6: Female Chinook Length Distribution.

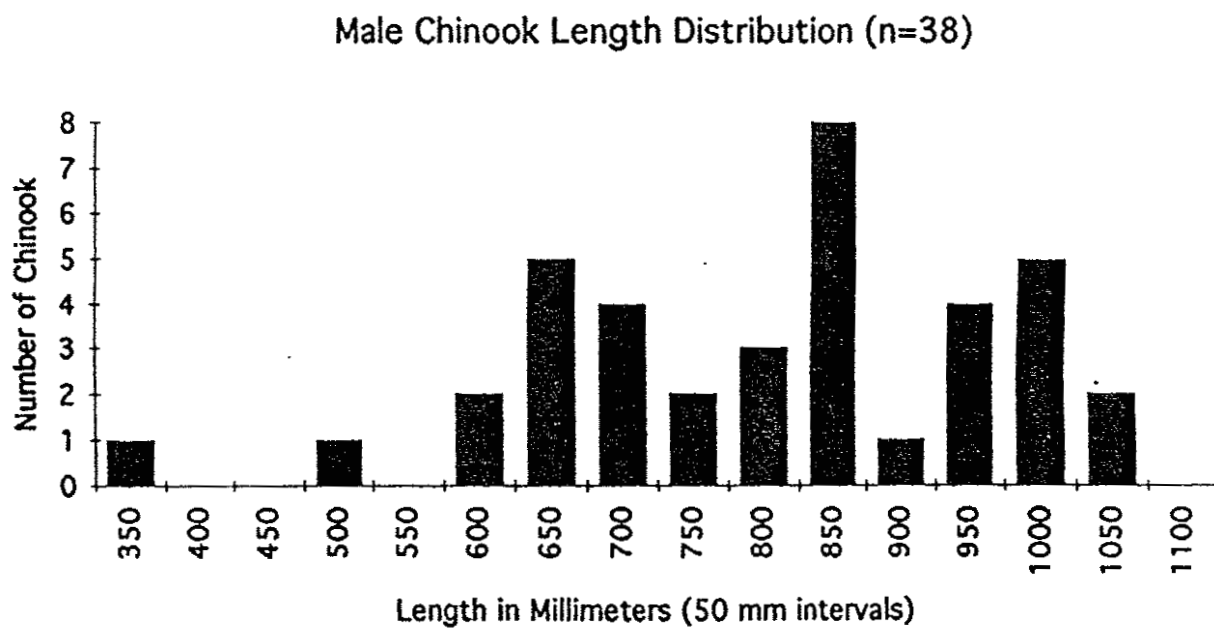


Figure 7: Male Chinook Length Distribution.

Chinook Length Distribution (38 male, 59 female samples)

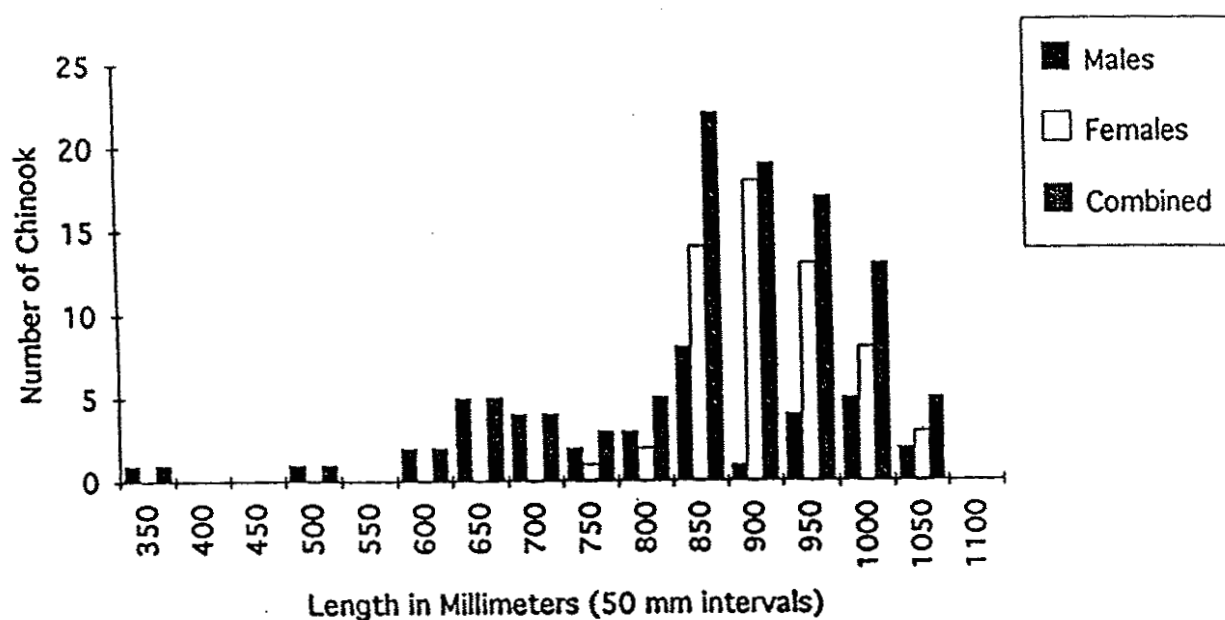


Figure 8: Length Distribution of Male, Female and All Chinook.

Length Distribution of all Chinook (n=97)

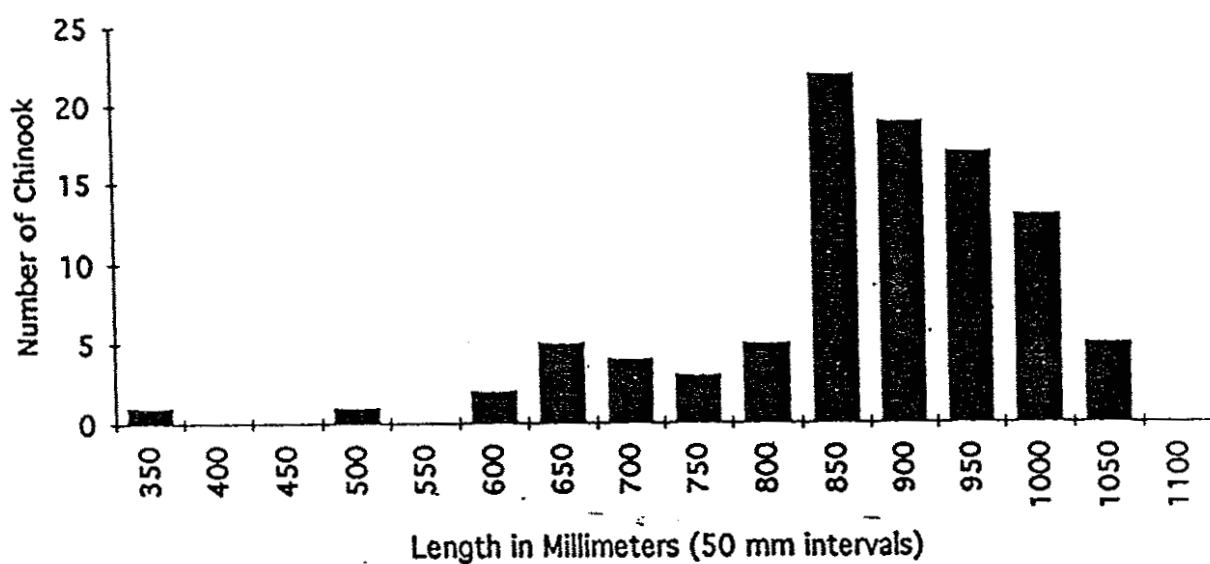


Figure 9: Length Distribution of All Chinook.

APPENDIX 3

1996 Lower Skeena Chinook Survey Form, Codes and Interviews

Table 3: 1996 Lower Skeena Chinook Survey Form

[illegible]

Creel Form Codes

Day Code: 1 = Sunday
 2 = Monday
 3 = Tuesday
 4 = Wednesday
 5 = Thursday
 6 = Friday
 7 = Saturday

Weather Code: 0 = No impact on fishing effort
 1 = Possible impact on fishing effort
 2 = Definite impact on fishing effort

Fishing Mode Code: 1 = boat
 2 = shore

ID #: identification number assigned to angler(s) on a daily basis

Interview #: the number of each interview (can be different from ID # as some anglers were found at multiple locations and interviewed at each location)

Guide Code: 0 = non guided
 1 = guided

Origin: 1 = local
 2 = non local B.C. residents
 3 = non resident Canadians
 4 = non resident Americans
 5 = non resident European
 6 = unknown

Species: 1 = chinook
 3 = steelhead
 5 = sockeye
 7 = cutthroat trout
 8 = dolly varden

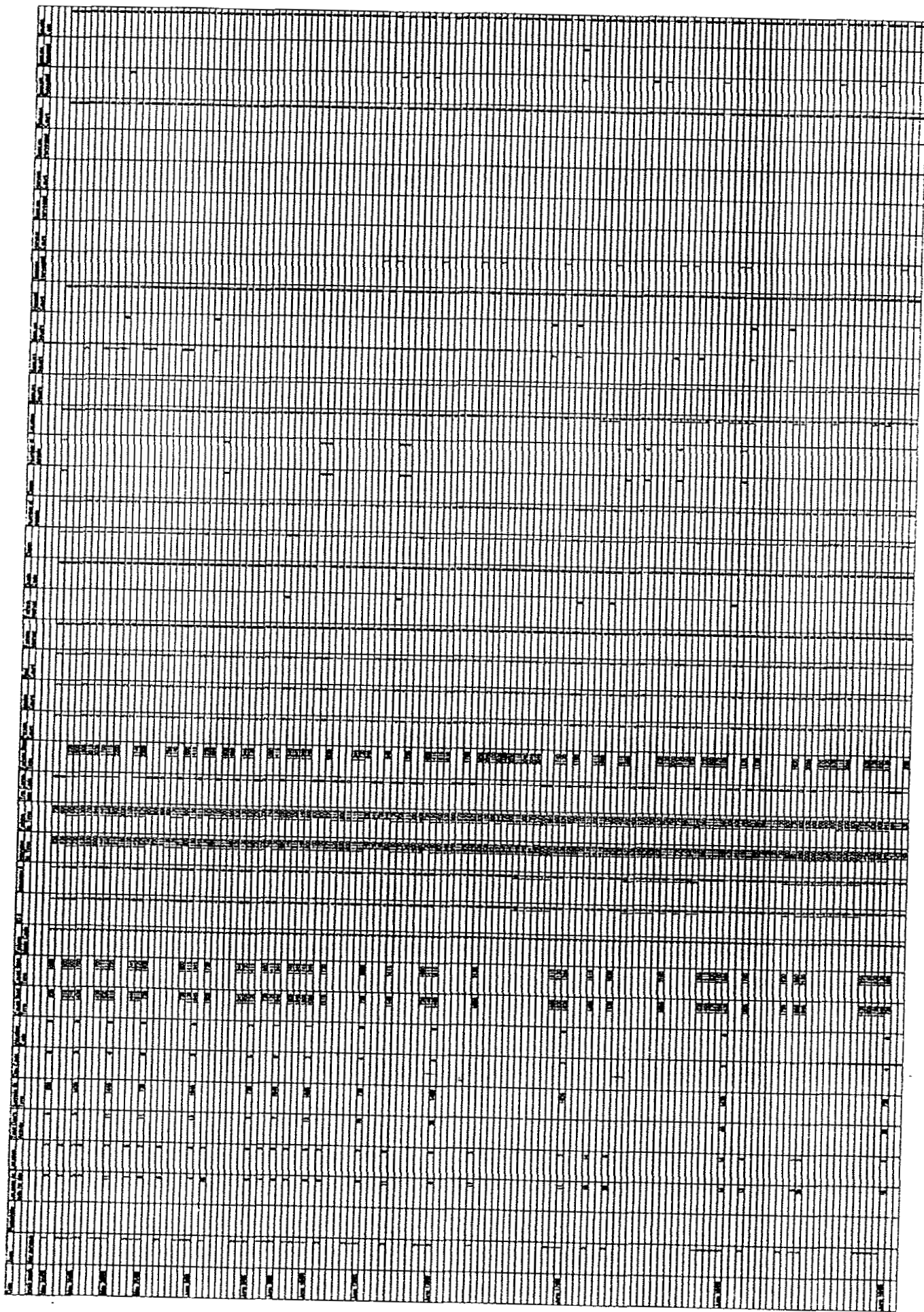
Fishing Method: 3 = fly fishing
 5 = float fishing
 6 = lure fishing
 7 = plugging (from Lakelse River Bridge)
 8 = plunking

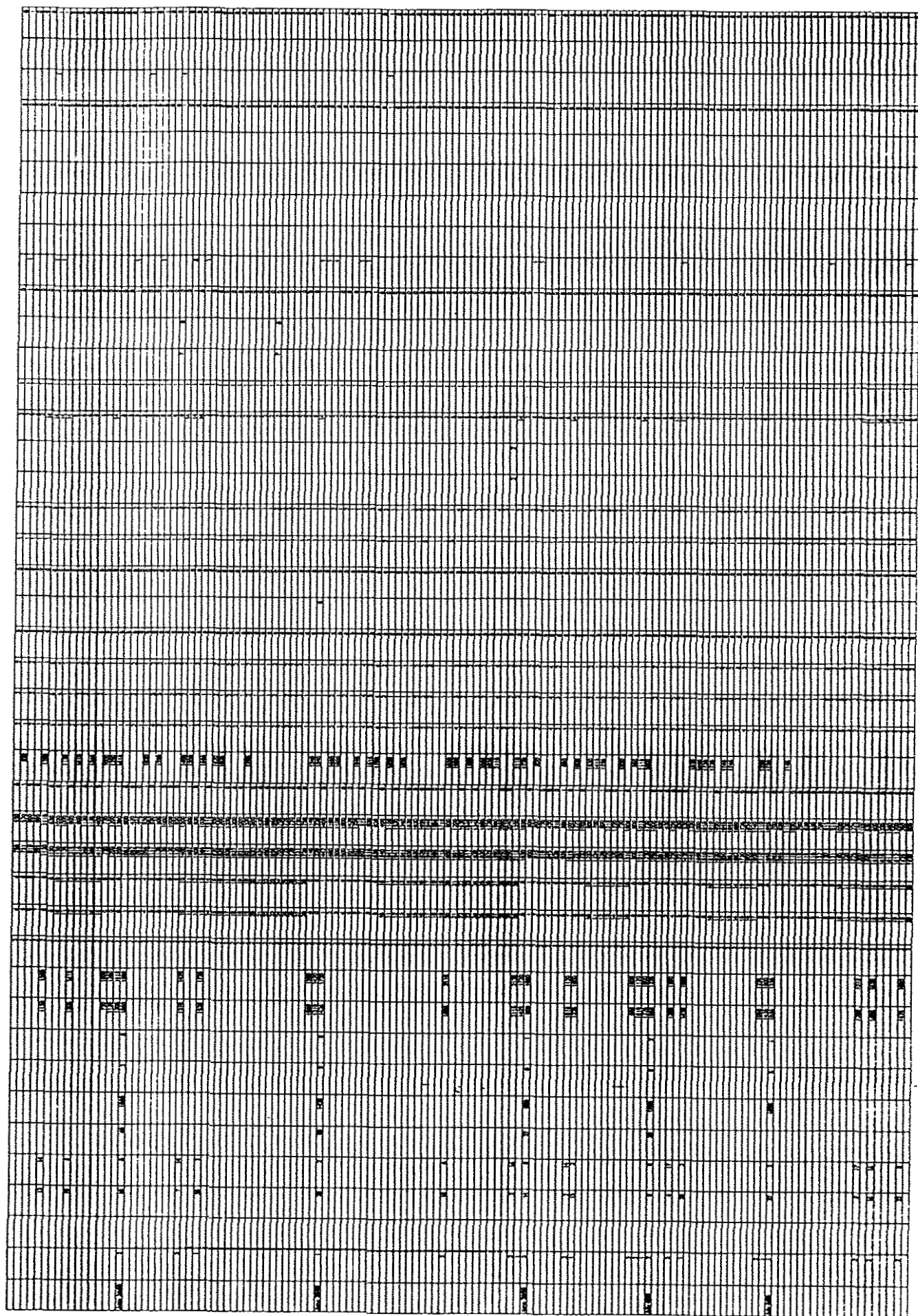
Sought Code: 0 = angler did not catch the intended species
1 = angler caught the intended species

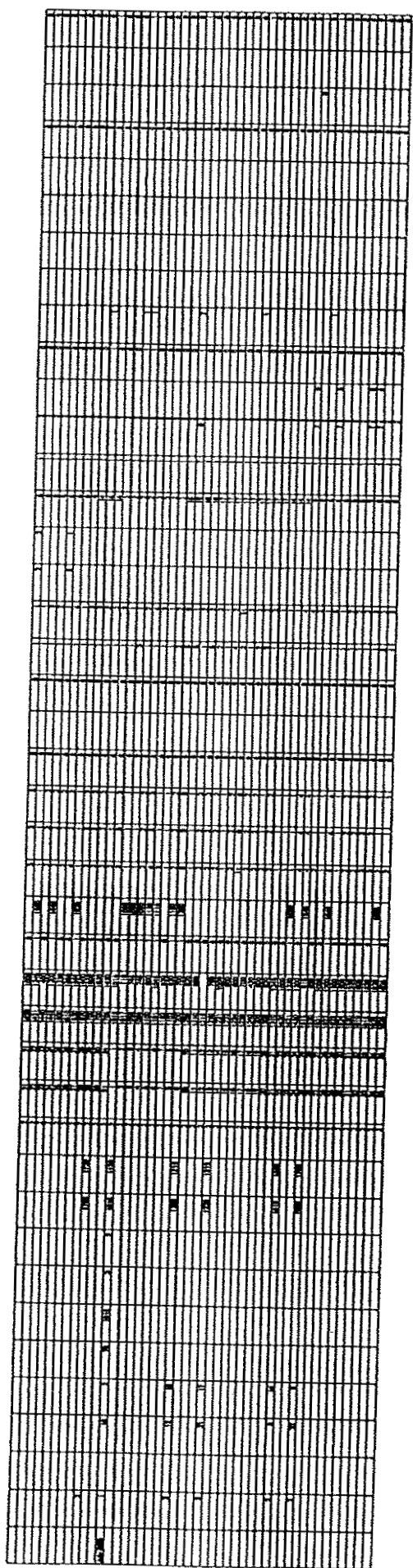
Location: 1 = Shames Side Channel
2 = Lakelse River Bridge
3 = Shames Bar
4 = Delta Creek
5 = Polymar Bar
6 = Kasiks River
7 = Bar 1 mile upstream of Kasiks River
8 = Chicken Bar
9 = Bar upstream and across Skeena River from Esker Bar
10 = Esker Bar
11 = Andesite Bar
12 = Bar 1 mile downstream of Kasiks River where side channel joins
13 = exit to Hell's Gate
14 = Exchamsiks River
15 = Exstew River
16 = Polywog Creek
17 = Ferry Island
18 = Copper Bar

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	1222	1223	1224	1225	1226	1227	1228	1229	1230	1231	1232	1233	1234	1235	1236	1237	1238	1239	1240	1241	1242	1243	1244	1245	1246	1247	1248	1249	1250	1251	1252	1253	1254	1255	1256	1257	1258	1259	1260	1261	1262	1263	1264	1265	1266	1267	1268	1269	1270	1271	1272	1273	1274	1275	1276	1277	1278	1279	1280	1281	1282	1283	1284	1285	1286	1287	1288	1289	1290	1291	1292	1293	1294	1295	1296	1297	1298	1299	1300	1301	1302	1303	1304	1305	1306	1307	1308	1309	1310	1311	1312	1313	1314	1315	1316	1317	1318	1319	1320	1321	1322	1323	1324	1325	1326	1327	1328	1329	1330	1331	1332	1333	1334	1335	1336	1337	1338	1339	1340	1341	1342	1343	1344	1345	1346	1347	1348	1349	1350	1351	1352	1353	1354	1355	1356	1357	1358	1359	1360	1361	1362	1363	1364	1365	1366	1367	1368	1369	1370	1371	1372	1373	1374	1375	1376	1377	1378	1379	1380	1381	1382	1383	1384	1385	1386	1387	1388	1389	1390	1391	1392	1393	1394	1395	1396	1397	1398	1399	1400	1401	1402	1403	1404	1405	1406	1407	1408	1409	1410	1411	1412	1413	1414	1415	1416	1417	1418	1419	1420	1421	1422	1423	1424	1425	1426	1427	1428	1429	1430	1431	1432	1433	1434	1435	1436	1437	1438	1439	1440	1441	1442	1443	1444	1445	1446	1447	1448	1449	1450	1451	1452	1453	1454	1455	1456	1457	1458	1459	1460	1461	1462	1463	1464	1465	1466	1467	1468	1469	1470	1471	1472	1473	1474	1475	1476	1477	1478	1479	1480	1481	1482	1483	1484	1485	1486	1487	1488	1489	1490	1491	1492	1493	1494	1495	14
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	----

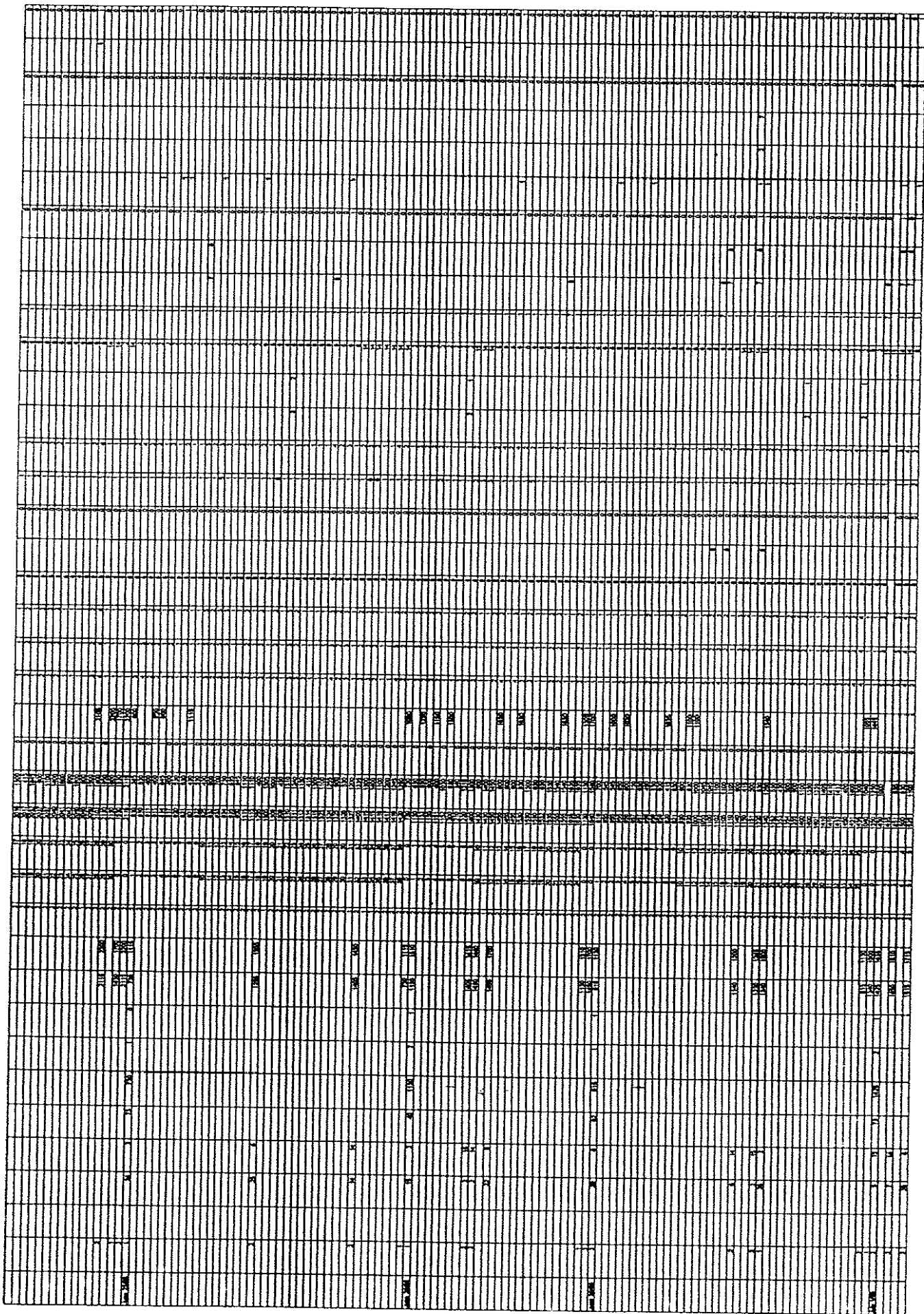
[illegible]







Row	Col	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78																								



APPENDIX 4

Daily Comments for 1996 Lower Skeena River Chinook Survey

Lower Skeena River Chinook Survey Daily Comments-1996

- April 25, 1996: Elmer Fast, Chris Culp & Ian Bergsma did initial run of Zone 1. Skeena River dirty, 1 seal below Zymacord River, encountered heavy rain below Lakelse River.
- April 27, 1996: Skeena River dirty, looks like chocolate milk. Anglers at Lakelse River bridge reported that one angler caught 3 steelhead: kept 1 and gave 2 away. Interview #1 out fishing for whatever bites. Interview #2 reported 1 hit and 1 lost fish.
- April 28, 1996: Rain, low cloud, wind. Seal at mouth of Gitnadoix River. Skeena River dirty. Boat trailer at Exchamsiks River, Snowbound Ck. and Kasiks River (2).
- May 1, 1996: Skeena River water level down with water being cleaner. Seal below and across Skeena from mouth of Zymacord River. Moose carcass in water along shore at top end of Shames Bar, 1 small black bear and 12 eagles at site. Went down to mouth of Gitnadoix River, no one on Skeena River. 3 anglers fishing Kitsumkalum River below CNR bridge.
- May 2, 1996: Anglers fishing from Lakelse River bridge. 1 angler reported releasing 1 steelhead with no other anglers fishing from bridge while there.
- May 3, 1996: Sunny day, Skeena River lower and cleaner with about 2.5 feet of visibility. Seal in mouth of Gitnadoix River. 1 river otter and 1 seal at Polymar Bar. Interviewed angler #1 (at Polymar Bar) reported that trout fishing was slow, no trout, and worse than last year.
- May 4, 1996: Sunny and clear. Seal at mouth of Exstew and at Lakelse River bridge. Went down as far as the Gitnadoix River, 2 anglers fishing Andesite Bar.
- May 5, 1996: Sunny with some cloud and wind. 3 boat trailers at Snowbound Ck and 5 boat trailers at Kasiks River. 1 boat at mouth of Kasiks River with no angler present. Interview #6 reported catching 2 trout in Salvus Slough.
- May 9, 1996: Skeena River in good fishing shape. Seal splashing in mid-river at Shames Bar. Interview #1 (4 anglers at Esker Bar) reported harvesting an 8 pound chinook yesterday and that another group of anglers harvested a 30 pound chinook.
- May 10, 1996: Skeena River down a little, very fishable.
- May 11, 1996: Sunny with clouds, nice day. Seal reported at bottom end of Kraut Bar. Seal reported at bar 0.5 miles upstream from Esker Bar. 2 boat trailers at

Exstew River launch. Interview #3 reported losing 2 fish. Interview #4 reported that there were 2 more anglers with them earlier - no fish.

May 12, 1996: Wind, cloudy, some rain changing to lots of rain in afternoon. Seal at Polymar Bar. Interview #3 reported catching 20 pound chinook yesterday. Interview #4 reported lost 1 fish, catching 40 pound chinook on Friday and catching a 12 pound chinook yesterday. Interview #5 reported losing 1 fish.

May 14, 1996: Cloudy with some sun. 2.5 feet of visibility - good fishing conditions. Skeena River up 6 inches from Sunday with quite a lot of debris in river. Interview #3 had been fishing Polymar Bar earlier in day and reported lots of people fishing Polymar Bar but no fish being caught. Interview #1 had a good day, Interview #4 reported losing 1 fish.

May 15, 1996: Overcast with sun, warm. Skeena River up some with visibility of 2 feet. 3 anglers at Esker Bar at 10:20: no fish. 1 boat trailer at Snowbound Ck. and 1 boat trailer at Kasiks River. Seal splashing in river at Andesite Bar. Lots of debris floating downstream. Interview #6 reported losing 1 fish.

May 16, 1996: Sun with cloud and some rain. Water level up with visibility reduced to 1.5 feet. Lots of debris floating downstream. Heavy rain around noon in the Shames/Esker Bar area. Interview #4 reported harvesting 1 chinook on Monday.

May 18, 1996: High cloud and sun. Seal at Polymar Bar and seal at bottom end of Kasiks River side channel.

May 19, 1996: Overcast, light rain last night. River up a little. Seal at Esker Bar. 2 boats going downstream as returning upstream to boat launch. 1 boat anchored at Remo Bar with no one around.

May 20, 1996: Cloudy with some sun. River up from yesterday with visibility about 1 foot. River looks like chocolate milk. Lots of debris, big and small, in river. In afternoon drove down highway to Polymar Bar: 2 vehicles at Shames River, 1 boat trailer at Exstew River, 5 anglers plus numerous campers at Kasiks River (no fish caught), 1 person fishing at Polymar Bar (water very high- foot or boat access only), no boats at Snowbound Ck.

May 22, 1996: Sunny with wind and cloud. Skeena River very high and dirty, lots of debris. River visibility 6 inches: unfishable. Skeena River unsafe to run boat in due to combination of high water and high amounts of debris.

May 24, 1996: Overcast. 1 chinook reported caught on Saturday from Lakelse River logging bridge. Kasiks River clean.

May 25, 1996: Rain, cloud, wind; heavy rain last night. Seal at Lakelse River bridge, Lakelse up and dirtier. Kasiks River dirtier than yesterday (about the same as the Lakelse). DFO Fisheries Officer and MOE Conservation Officer took boat up Kasiks at 1255 returning at 1430 to check anglers at mouth.

May 26, 1996: Cloud, some sun, rain. Kasiks River clean, about same height as yesterday. Lakelse cleaned up but water level up.

May 28, 1996: Clear and sunny. Skeena River down a bit. Lakelse River down 18 inches from Sunday. Kasiks River down a bit and clean.

May 29, 1996: Clear, sunny and warm. Kasiks River down from yesterday. Lakelse River down from yesterday. 2 seals at Lakelse River bridge. Conditions at Lakelse and Kasiks Rivers excellent. Interview #1 reported that they had some hits.

May 31, 1996: Overcast and cool. Anglers at Kasiks River reported one chinook had rose in mouth area. Kasiks up but still clean. Seal at mouth of Kasiks River. Lakelse up 20 inches and dirtier. 3 otters and 1 seal at Lakelse River bridge. Interview #1 reported having one fish on briefly. Surveyor had one good hit at Lakelse River.

June 1, 1996: Cloudy, cool, some rain periods. Skeena River up. Kasiks River up with tail along highway dirty. Observed 2 fish roll at highway bridge. Lakelse River up, lots of people in campground. Interview #1 reported a 10 pound chinook was caught at mouth of the Kasiks River last night. Interview #11 reported losing 2 fish.

June 2, 1996: Clear and sunny. Skeena River up. Lakelse River up and dirtier, water over banks and into parking area upstream of bridge. Kasiks River up and blocking access to campground. 1 angler in boat at mouth but left before being interviewed (noted as interview #7). A few fish rolling at Kasiks River.

June 3, 1996: Clear and sunny. Skeena River up again. Lakelse River up into campground, well over bank and road on downstream side of bridge covered with water for 50 metres. 20 pound chinook reported caught off Lakelse River Bridge last night. Started raining at Lakelse at 1555.

June 6, 1996: Raining steady until 1900. Skeena River up more, within 2 feet of coming onto road to Lakelse River. Lakelse River up into trees, road downstream of bridge flooded for 150 to 200 metres. Kasiks River up.

June 7, 1996: Cloudy with some rain. Kasiks River about same height. Raining at Kasiks River. Lakelse River down a bit. Interview #1 reported losing 1 fish.

June 8, 1996: Cloud with some rain. 2 otters at mouth of Kasiks River. Interview #3 reported losing 1 chinook. Surveyor lost 1 chinook, about 12 pounds, at Lakelse River.

June 9, 1996: Cloudy with some rain. Skeena River down from yesterday. Kasiks River down from yesterday, more clean water in mouth area. Saw 3 fish roll, one of which was definitely a chinook about 15 pounds. Lakelse River lower (down at least 1 foot), road drying up. Chinook reported caught last night. 2 anglers left as arrived-no fish. Otter at Lakelse River bridge. Interview #3 reported 1 lost chinook and that fish had been rolling.

June 10, 1996: Low cloud with light rain. Skeena River down about 2 feet. Clear strip of water at Kasiks River along highway. Boat went up Kasiks River with 5 people aboard at 1345. Lakelse River down about 1 foot. Interview #1 reported 2 lost fish, 10 chinook rolled and that some other anglers had landed 1 chinook about 15 pounds. Anglers reported 3 chinook lost at Lakelse River bridge from 1100 to 1200. Interview #3 reported having a few good hits and that was out till 2215 yesterday and saw 1 steelhead caught and released.

June 12, 1996: Skeena down and a bit cleaner. Lakelse River down about 1 foot, several hits at bridge and a few rolling. Kasiks River down at least 1 foot, snag along shore in tail along highway. Interview #4 reported losing 1 fish. Interview #9 reported losing 1 fish. Surveyor lost 1 fish at Kasiks River.

June 13, 1996: Sunny with clouds. Kasiks River down from yesterday. Reported that a 37 pound chinook taken this morning. Seal at Lakelse River bridge. Interview #5 reported that earlier today had caught and released 3 chinook as well as keeping 1 chinook; lost 2 Chinook in afternoon. Interview #8 reported catching 1 chinook earlier today. Interview #9 reported lost 1 fish.

June 15, 1996: Overcast, light rain, clearing later. Kasiks River down some, a few fish rolling. Lakelse River down, 4 chinook milling around below bridge, fish rolling. Interview #6 reported 1 lost chinook. 30 pound female chinook caught at Kasiks River by surveyor not sampled.

June 16, 1996: Sun with cloud. Lakelse River water very clean and down. 38 pound chinook reported caught last night. Lots of fish rolling at Kasiks in early morning with fish being caught but slowed down by 1100. Interview #1 reported losing 1 fish and that there was one other angler at Lakelse bridge earlier that morning. Interview #5 (Exchamsiks River) reported losing 1

fish, catching 1 adult and 1 jack chinook last night, and that some other anglers caught 2 chinook were earlier that morning (500-1000). Interview #6 reported losing 1 fish. Interview #7 reported catching one chinook last night. Interview #12 reported losing 6 fish. Interview #14 reported lots of hits.

June 17, 1996: Clear and sunny. At Lakelse River bridge observed 8 chinook milling about below the bridge. Fish rolling at Exchamsiks River. Seal at mouth of Kasiks River, seal at mouth, slow day. Interview #7 reported losing 2 fish. Interview #18 reported 1 lost chinook. Interview #20 reported 1 lost chinook.

June 18, 1996: Sun with clouds and wind. A few fish rolling at Exchamsiks River. No fish rolling at Kasiks River; 1 other boat up Kasiks with fly fisherman from yesterday. Lots of fish rolling at Lakelse River after 2100. Reported that there were lots of chinook at Lakelse River bridge last night. Surveyor lost 1 chinook at Exchamsiks River.

June 19, 1996: Overcast. Fish rolling at Lakelse River bridge. Exchamsiks River up today, only a few fish rolling.

June 22, 1996: Scattered heavy showers. Skeena up. Lakelse River up and dirtier, lots of fish rolling at Lakelse River. On way out to Lakelse met 2 anglers who had caught 3 chinook (2 adults and 1 jack), fish sampled. Interview #3 reported losing 5 fish.

June 23, 1996: Sun with clouds. Lakelse River up a few inches, fish rolling. Fisheries officers checked anglers at bridge at 1000. Anglers reported 7 chinook were caught last night after surveyor left yesterday. Kasiks and Exchamsiks Rivers both up. Interview #1 reported losing 1 fish. Interview #3 reported losing 1 fish. Interview #5 reported losing 2 fish. Interview #10 reported losing 1 fish. Interview #14 reported losing 1 fish.

June 24, 1996: Sunny and clear. Skeena River up. Kasiks River up. Exchamsiks River up and dirtier. Interview #12 reported 1 lost fish. Interview #18 reported 2 lost fish.

June 25, 1996: Sunny and clear. Lakelse River up with only a few fish rolling, thunder and lightning in Lakelse area. Heavy rain at Kasiks River, river up, a few fish rolling late. 25 pound chinook accidentally released at Kasiks River. Interview #30 (Exchamsiks River) reported 1 lost fish and that no fish caught while there. Boat across river from Andesite railway crossing.

June 28, 1996: Cloudy with some rain. Kasiks River about same height, a few fish rolling. Exchamsiks River high and murky. Lakelse River high (into parking area) (was over road yesterday) but clean, few fish rolling. 3 fish

reported caught this morning at Lakelse. Reported that yesterday from 330 to 730 6 fish caught (1 released) (5M, 1F). Boat on bar across Skeena from Andesite Railway crossing.

June 29, 1996: Cold, rainy, wind. 2 chinook reported caught this morning at Lakelse River. 30 pound chinook reported caught last night at Exchamsiks River. Interview #4 reported losing 2 fish. Interview #6 reported losing 2 fish. Boat across Skeena River at Andesite railway crossing, at least 2 people.

June 30, 1996: Low cloud, some blue sky, light rain. Skeena River down. Kasiks River down a few inches. Exchamsiks River a little dirtier. Lakelse River down about 1 foot; 2 adult and 1 jack chinook reported caught earlier. Interview #2 reported losing 1 fish. Interviews #11 and #12 were kids camped at Kasiks River who were fishing on and off through time surveyor present.

July 1, 1996: Sun with cloud, hot. Skeena River down a bit. Exchamsiks River down and cleaner, 1 chinook reported caught earlier. Water down at Kasiks River, fish rolling. Anglers reported that 10 to 12 chinook caught earlier today. Boat at Powerlines and at Andesite railway crossing on Skeena River. Lakelse River down a bit, 5 chinook reported caught in total, fish reported caught a kept above bridge, sockeye rolling with chinook rolling later in evening. Interview #7 reported catching 1 chinook last night. Interview #16 reported a 45 pound chinook was caught this morning. Interview #22 reported catching 1 chinook last night. Interview #29 reported losing 1 fish and that had taken a break from fishing during day.

July 4, 1996: Low cloud and rain. 1 boat at Hogline, 1 boat at Kraut Bar, 1 boat at exit to Hell's Gate and 1 boat on bar across Skeena from Andesite Railway crossing. Exchamsiks River up and dirty. Kasiks river up a bit with a dirty colour, lots of bottom debris. No one fishing Copper Bar. Reported 1 chinook caught earlier today at Lakelse River. Interview #4 reported catching 20 pound chinook yesterday. Interview #6 reported catching 29 pound chinook yesterday. Interview #8 reported 1 lost fish and catching 24 pound chinook yesterday.

July 5, 1996: Low cloud, wind. No one fishing Copper Bar. A few fish rolling at Lakelse River. Fish rolling at Exchamsiks River with a jack chinook reported being caught earlier. Exchamsiks cleaner than yesterday. Kasiks River up, 22 pound female chinook caught this morning. 2 boats at Hogline, camp set up at exit to Hell's Gate and Powerlines, boats and camps on river banks above and below Andesite Railway crossing. Interview #15 reported 1 lost fish. Unable to sample fish caught by Interview #30.

July 6, 1996: Cloudy with some sun. Skeena River down. Lakelse River down 1 foot, fish rolling. 1 chinook reported released at Exchamsiks River earlier in day. 2 boats at Hogline, 1 boat at Kraut Bar, 1 boat at exit to Hell's Gate, 3 boats above Andesite Railway crossing, camp below Andesite Railway crossing enlarged. Interview #2 reported 1 lost fish.

July 7, 1996: Sun and cloud. Skeena down and cleaner. Exchamsiks River down. 3 boats at Hogline, 4 boats at Kraut Bar, boat at Powerlines, camp above Andesite Railway crossing enlarged. Started raining at Kasiks River. Kasiks down a bit, 1 reported caught earlier. Fish rising at mouth of Lakelse river, very hard rain at 2100. Interview #1 reported 1 lost fish. Interview #11 reported boat at mouth of Exstew landed 1 chinook and lost 1 other fish. Interview #14 reported losing 3 fish. Interview #27 reported losing 2 fish.

July 8, 1996: Thunder and lightning, hard rain at Lakelse; clearing down river. Skeena up and dirtier. Lakelse up and dirtier. Copper River up and dirty. Reported a total of 4 fish caught earlier today in early morning at Ferry Island. Exchamsiks up and dirtier with seal at CNR bridge; sunny with cloud and wind. Reported 1 chinook caught and 2 lost fish at Kasiks River earlier today. Interview #12 did not speak English. Interview #14 lost 2 fish. Interview #15 lost 1 fish. Fish caught by Interview #18 not sampled as fish taken to supermarket freezer. Interview #24 lost 1 fish.