SKEENA JUVENILE SALMON ECOLOGY

DATA REPORT:

BEACH SEINE SAMPLES FROM THE SKEENA RIVER ESTUARY, 2 MAY TO 20 AUGUST 1986

Edward Anderson, Project Manager
P.O. Box 2125, Sidney, B.C. V8L 3S6
(604) 656-6434

Mitchell Adams
Darrin W.J. Bell
Carl Etzerza
Marthe M. Fortin
Jody Goffic
Roderick Green
Don W. Intermela
Raymond Moore
Judy Mueller

Job Development Strategy Project 4038RX2
Employment and Immigration Canada

Chris Jennings, Project Officer
Employment Development Branch
215 - 4618 Lazelle Avenue
Terrace, B.C. V8G 1S5

16 February 1987

TABLE OF CONTENTS

1. INTRODUCTION 1

2. METHODS 2

3. REFERENCES 3

4. FIGURES 4

Figure 1. Location of study area, and of two peripheral stations.

Figure 2. Main study area and sampling stations.

Figure 3. Weekly average captures, salmon species.

Figure 4. Weekly average captures, all fish.

5. TABLES 8

Table 1. Weekly summary: average catch per set.

Table 2. Beach seine raw data.

1. INTRODUCTION .....

Skeena Juvenile Salmon was a Job Development Strategy Project, funded by the Employment Development Branch of Employment and Immigration Canada. The project's main purpose was to train employees for future work in fisheries ecology or related fields such as aquaculture, using both formal instruction and job experience in a realistic setting. The project manager proposed the site and technical content of the project, in consultation with employees of the Department of Fisheries and Oceans, chiefly Dr. C.D. Levings of the Habitat Research division.

The major post-hatching mortality of juvenile salmon almost certainly occurs during early sea life, yet very little is known of this phase of the life histories of any of the five Pacific salmon species. A few studies have addressed this topic for estuaries in southern British Columbia, notably those of the Fraser River, Campbell River, Somass River, Nanaimo River and Carnation Creek. But for the Skeena River estuary, through which pass the second most numerous runs in British Columbia, there exist only two substantial surveys of juvenile salmon during the critical period: a purse seine survey of patterns of occurrence in the inner Skeena estuary (Higgins and Schouwenberg, 1973) and a beach seine and other gear survey in the outer estuary, ranging over Chatham Sound (Neave, et al. 195(6?). These considerations were the major motivation for a study of juvenile salmon in the Skeena estuary. The site also made sense in the training aspect because Prince Rupert is deficient in technically trained manpower.

To best serve the interests of the project's clients, the project was as broad in scope and diverse in techniques as was consistent with good experimental design. In addition to the beach seine data reported here, we have information on salmon length/weight relationships, and stomach contents. To complement the fish data, we have results for zooplankton and benthos samples representing the potential prey available to salmon at each beach seine site. Analysis and interpretation of these other sample categories is continuing.

2. METHODS .....

2.1 Beach Seine Sampling

The beach seine sampling program was active from 25 April 86 to 20 August 1986. Sampling sites were distributed from the Skeena River at De Horsey Island to Venn Passage the shallow northern entrance to Prince Rupert Harbor. Sampling was concentrated in the Inverness Passage and Flora Bank regions, which had been identified as especially important habitats in a previous study (Higgins and Schouwenberg, 1973). The shores of the sampling sites could be divided into four main types. Sites A, F, J, N, Q, R, S, and X had mud or mud with eel grass in the lower intertidal, and boulders with Fucus near high tide. Sites E, I, O, U, W, and Y were rocky from low to high tide, with Fucus most abundant at mid-tide. Fucus cover declined with distance upstream, but was present on hard substrates throughout the study area. Sites G, K, L, M, T, Z, AA, AB, AC, and AE were more exposed to waves and/or current scour. These sites had sand to cobbles near the low tide mark, and rock with Fucus in the upper intertidal zone. Site H (on Flora Bank) was silty sand with eel grass in the lower intertidal zone, and submerged at high tide.

Beach seines were taken, where possible, in two replicates per station, during or near high slack tide or low slack tide. A 4.2m long outboard was used to set an 18m long beach seine in semicircles against the shore. This net was used from 25 April to 2 May. After that we used a similar net 30.5m long by 3.1m deep with 6.5 mm (stretched) mesh in the bunt and leader ropes approximatly 12.4m long. This is a standard net for sampling juvenile salmon (Conlin and Tutty, 1979). Captured fish were held in a floating pen made from a perforated plastic tub. All fish were identified and counted, except that large numbers were estimated to minimize mortalities. Fork Lengths of a subsample of 10 of all non-salmonid species were measured to +/- 1 mm. For salmonids, the first 20 individuals were measured, and up to 10 of each species were kept for later analysis of condition factor and stomach contents.

3. REFERENCES .....

Conlin, K. and B.D. Tutty. 1979. Juvenile salmonid field trapping manual. Canada. Fisheries and Marine Service Manuscript Report #1530. 134p.

Higgins, R.J. and W.J. Schouwenberg. 1973. A biological assessment of fish utilization of the Skeena River estuary, with special reference to port development at Prince Rupert. Canada. Fisheries Service, Northern Operations Branch. 58p.

Neave, F., R.J. LeBrasseur, J.I. Manzer, L. Margolis and G.T. Taylor. 195(6?). Biological Station, Nanaimo, B.C., Annual Report, 1955, pp1-9. Canada. Fisheries Research Board.

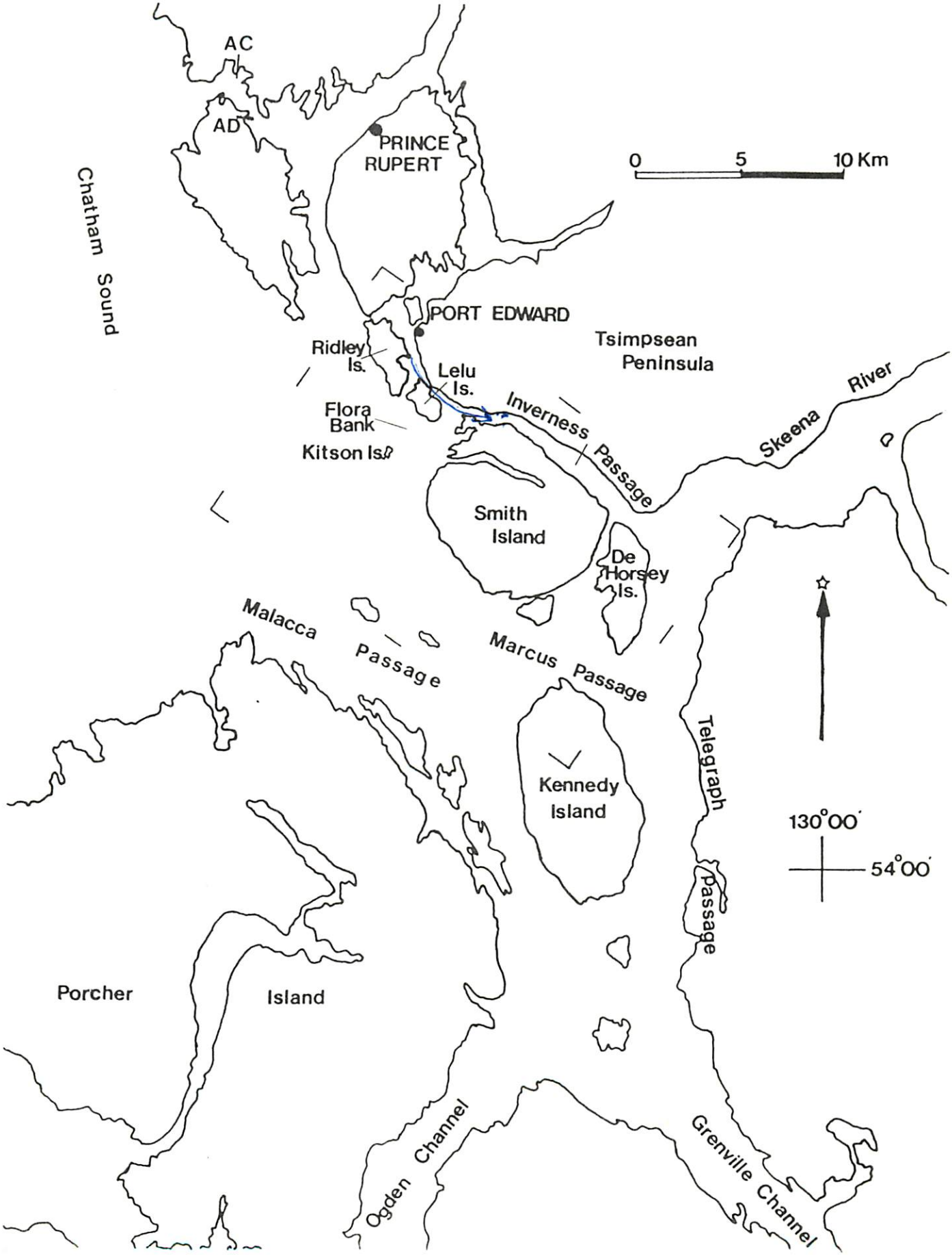


Figure 1. Location of study area, and of two peripheral stations.

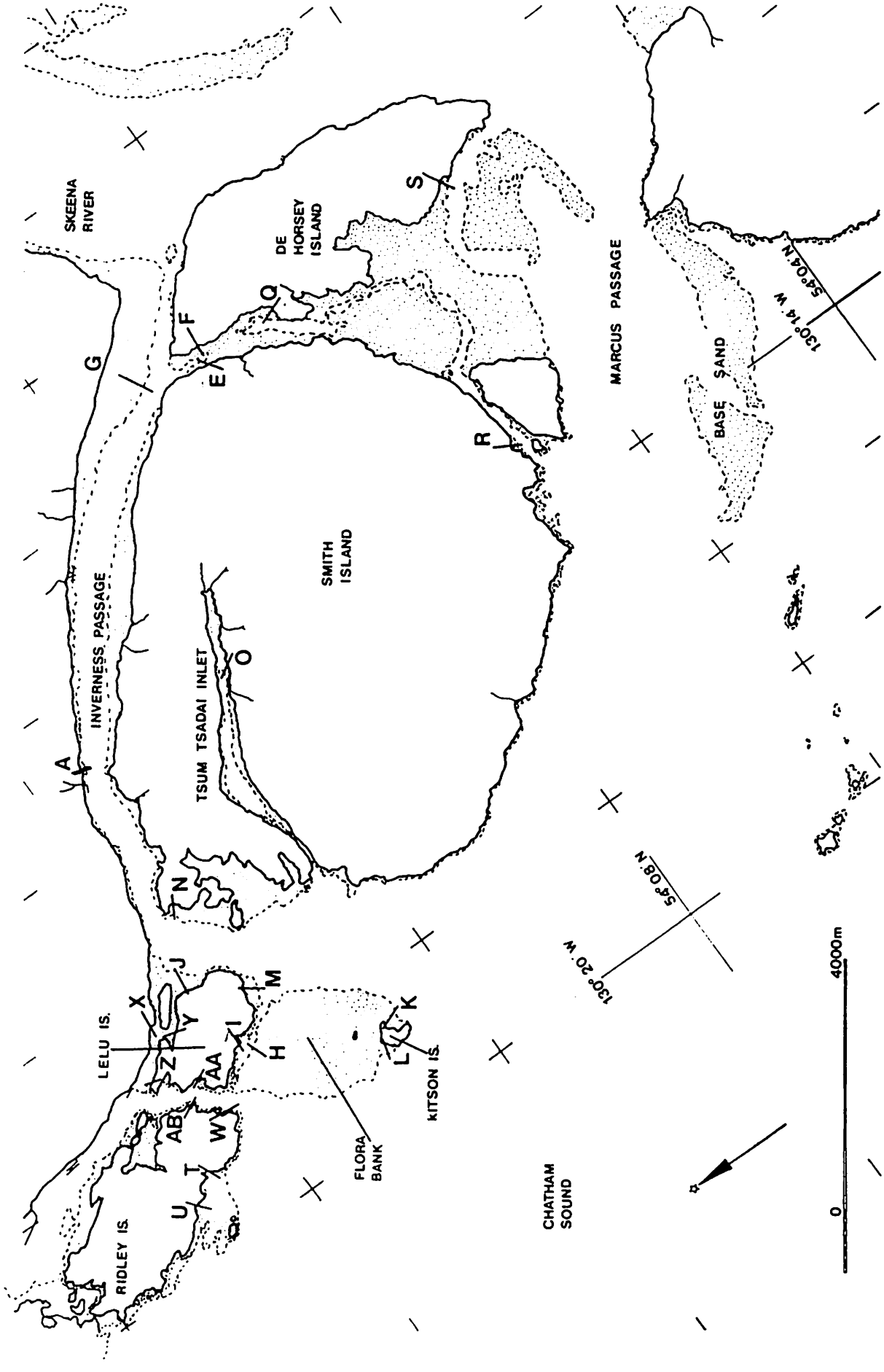
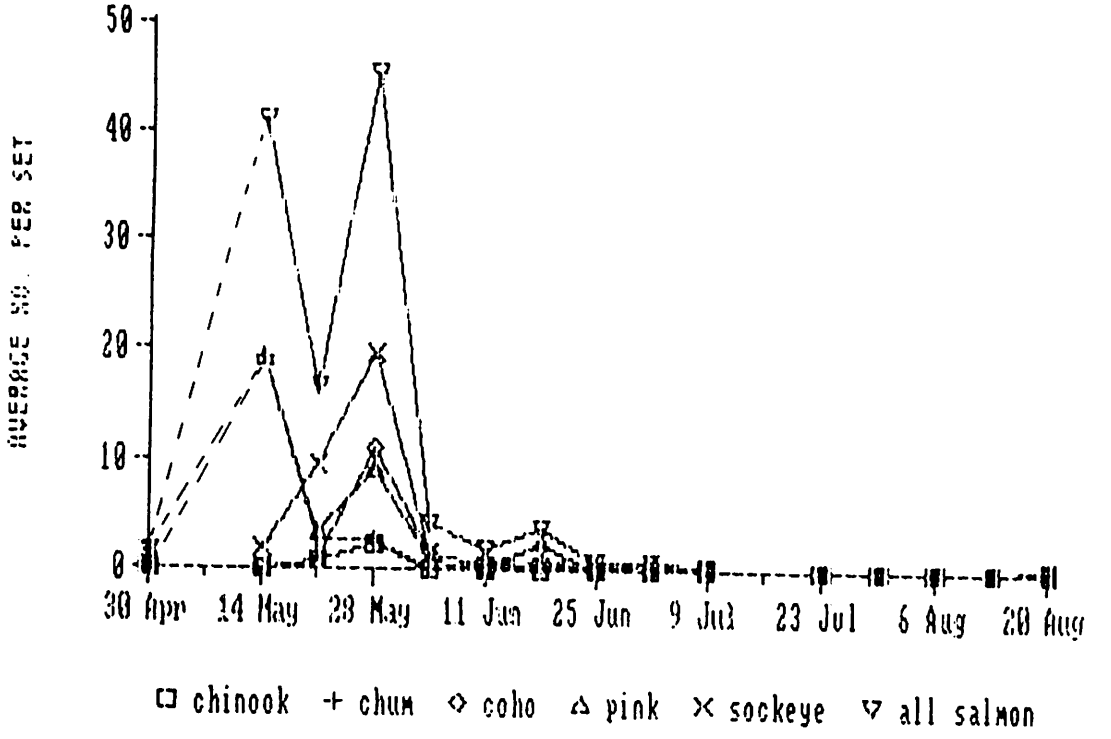


Figure 2. Main study area and sampling stations.



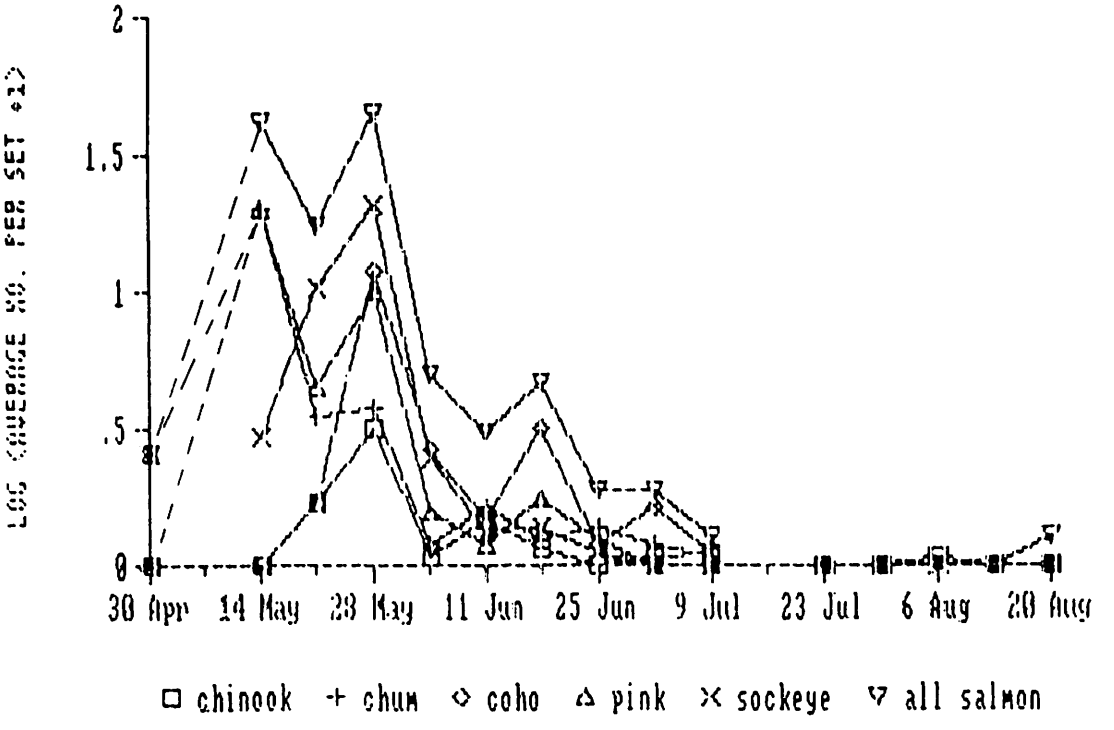
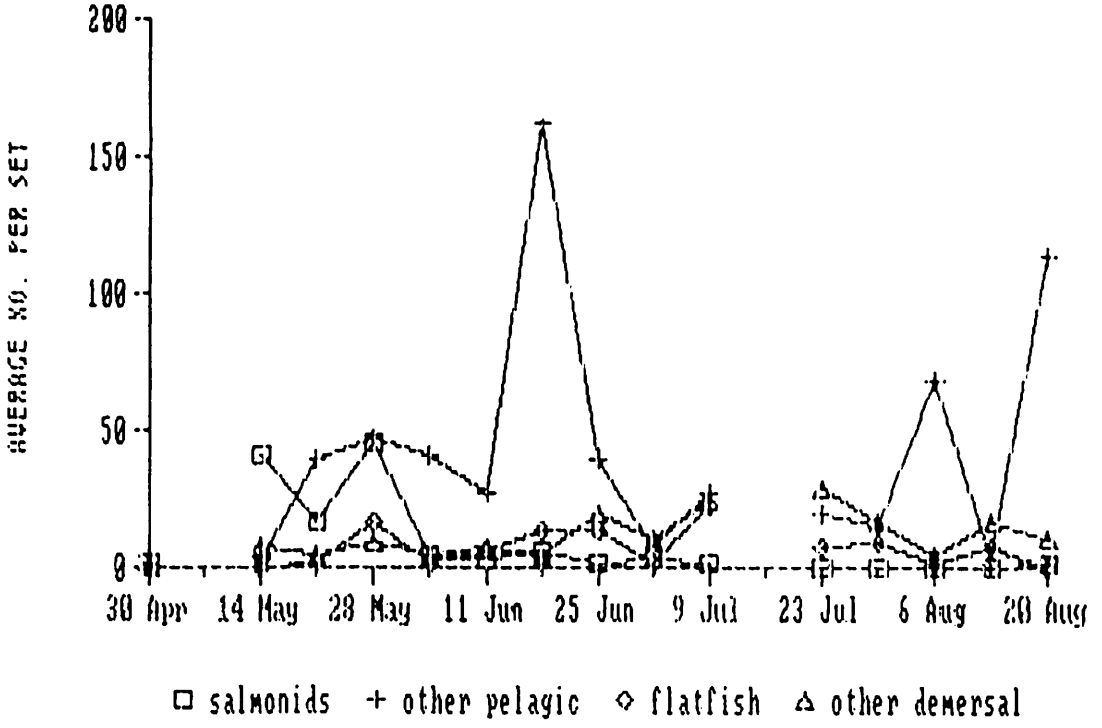


Figure 3. Weekly average captures, salmon species.



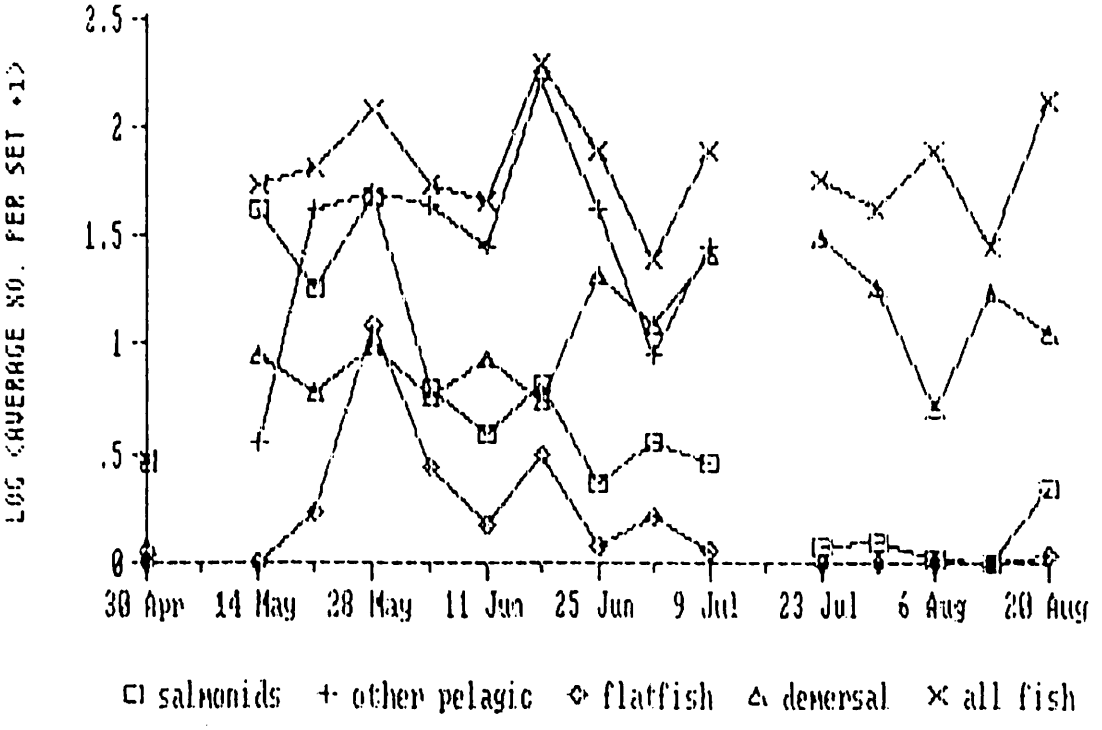


Figure 4. Weekly average captures, all fish.

Skeena Juvenile Salmon Project: Beach seine weekly summary

WEEK		21	22	23	24	25	26	27	28	29	30	31
Central Date		30 Apr	7 May	14 May	21 May	28 May	4 Jun	11 Jun	18 Jun	25 Jun	2 Jul	9 Jul
No. of Sets		5	0	2	9	16	22	22	22	17	11	17
		AVG		AVG	AVG	AVG	AVG	AVG	AVG	AVG	AVG	AVG
CHINOOK	A	.00		.00	.67	2.19	.09	.45	.14	.00	.09	.12
CHUM	A	.00		19.50	2.56	2.75	.18	.64	.23	.35	.18	.06
COHO	A	.00		.00	.67	11.13	1.68	.45	2.18	.18	.64	.12
DOLLY VAR	A	.20		.00	.00	.19	1.27	.77	1.91	.41	1.64	1.53
PINK	A	1.60		19.50	3.56	9.13	.59	.18	.73	.24	.00	.00
SOCKEYE	A	.00		2.00	9.44	19.94	1.45	.32	.36	.12	.00	.00
STL HEAD	A	.00		.00	.00	.00	.00	.05	.00	.00	.00	.00
ALL SALMONIDS		1.80		41.00	16.83	45.31	5.27	2.86	5.55	1.29	2.55	1.82
SALMON		1.60		41.00	16.83	45.13	4.00	2.05	3.64	.88	.91	.29
GREENLING	B	.00		.00	.00	.13	.00	.00	.05	.06	.00	.00
PAC COD	B	.00		.00	.00	.13	.00	.00	.05	.12	.00	.00
PAC HRNG	B	.00		.00	1.11	5.38	29.14	10.45	83.59	.12	.36	2.76
PAC SNDFS	B	.00		.00	.00	.00	.00	.14	2.23	2.29	.27	.35
ROCK COD	B	.00		.00	.00	.00	.00	.00	.05	.00	.00	.00
SHNR PRCH	B	.00		.00	.00	3.38	2.55	1.41	.64	.06	.45	3.12
SMELT	B	.00		2.50	34.44	38.38	8.59	12.23	73.41	36.76	2.45	16.24
SND LANCE	B	.00		.00	.56	.06	.68	.00	.09	.29	4.09	4.18
STGN PCHR	B	.00		.00	.00	.00	.00	.05	.00	.00	.00	.00
STKLBACK	B	.00		.00	3.33	.31	.86	3.14	2.86	.29	.27	.06
OTHER PELAGIC		.00		2.50	39.44	47.75	41.82	27.41	162.95	40.00	7.91	26.71
ENG SOLE	C	.00		.00	.00	6.38	.05	.18	4.68	9.35	.09	6.35
ROCK SOLE	C	.00		.00	.00	1.19	.00	.00	.05	.00	.00	.00
SAND SOLE	C	.00		.00	.00	1.25	.00	.00	.18	1.12	.00	.00
STARRY FL	C	.00		.50	1.00	7.75	2.09	6.00	9.41	3.94	1.82	16.18
FLATFISH		.00		.50	1.00	16.56	2.14	6.18	14.32	14.41	1.91	22.53
NOR SCULP	D	.00		.00	.11	.00	.00	.00	.00	.00	.00	.00
BUF SCULP	D	.00		.50	.00	.56	.00	.09	1.05	.47	.36	.12
CRES GUNN	D	.00		1.50	1.22	.69	.00	.68	3.55	1.06	.18	1.06
PNPT GUNN	D	.00		.00	.00	.00	.00	.00	.00	.71	1.18	2.41
DUN CRAB	D	.00		.00	.00	.31	.41	1.36	.00	.88	.00	.00
GRT SCULP	D	.00		.00	.00	.06	.00	.00	.00	.18	.00	.06
NO CLNFSH	D	.00		.50	.00	.06	.00	.09	.00	.00	.00	.00
RVR LMPRY	D	.00		.00	.00	.00	.00	.00	.00	.06	.00	.00
SNK PKLBK	D	.00		4.50	3.00	3.56	1.23	3.55	.00	9.18	7.09	12.06
STG SCULP	D	.20		1.00	.78	3.31	3.00	1.91	.00	7.12	2.55	8.88
OTHER DEMERSAL		.20		6.00	5.11	8.56	4.64	7.68	4.59	19.65	11.36	24.59

Table 1. Weekly summary: average catch per set.

WEEK		32	33	34	35	36	37
Central Date		16 Jul	23 Jul	30 Jul	6 Aug	13 Aug	20 Aug
No. of Sets		0	6	12	15	6	10
			AVG	AVG	AVG	AVG	AVG
CHINOOK	A		.00	.00	.07	.00	.00
CHUM	A		.00	.00	.00	.00	.00
COHO	A		.00	.00	.00	.00	.10
DOLLY VAR	A		.17	.25	.00	.00	.90
PINK	A		.00	.00	.00	.00	.20
SOCKEYE	A		.00	.00	.00	.00	.00
STL HEAD	A		.00	.00	.00	.00	.00
ALL SALMONIDS			.17	.25	.07	.00	1.20
SALMON			.00	.00	.07	.00	.30
GREENLING	B		.33	.00	.00	.00	.00
PAC COD	B		.00	.00	.00	.00	.00
PAC HRNG	B		.67	2.00	.07	.00	.10
PAC SNDFS	B		.33	.00	.40	.00	.10
RCK COD	B		.00	.00	.00	.00	.00
SHNR PRCH	B		3.83	6.92	9.13	3.33	8.90
SMELT	B		14.17	5.50	26.00	.00	.10
SND LANCE	B		.00	.17	32.87	.00	.00
STGN PCHR	B		.00	.00	.00	.00	.00
STLBACK	B		.00	.08	.00	.00	105.10
OTHER PELAGIC			19.33	14.67	68.47	3.33	114.30
ENG SOLE	C		.00	6.33	.80	1.17	.50
ROCK SOLE	C		.00	.00	.00	.00	.00
SAND SOLE	C		.00	.08	.20	.00	.00
STARRY FL	C		7.00	2.58	1.13	6.00	.10
FLATFISH			7.00	9.00	2.13	7.17	.60
NOR SCULP	D		.00	.00	.00	.00	.00
BUF SCULP	D		.00	.17	.00	.00	.10
CRES GUNN	D		.83	1.67	.67	.67	1.70
PNPT GUNN	D		.00	1.17	.07	.00	.10
DUN CRAB	D		.00	.25	.00	9.83	1.90
GRT SCULP	D		.00	.00	.00	.00	.00
NO CLNFSH	D		.00	.00	.00	.00	.00
RVR LMPRY	D		.00	.00	.00	.00	.00
SNK PKLBK	D		25.67	9.00	1.60	.17	3.90
STG SCULP	D		2.50	5.00	1.67	5.67	2.20
OTHER DEMERSAL			29.00	17.25	4.00	16.33	9.90

Skeena Juvenile Salmon Project: Beach seine raw data.

Seine#		3	4	5	6	7	8	9	10	11	12	13	14	15
Station		A	A	B	B	C	C	A	A	A	A	D	A	A
Time		09:08	09:16	09:43	09:56	10:41	10:53	11:45	13:15	12:30	12:39	14:15	09:20	10:00
Date		2may86	2may86	2may86	2may86	2may86	2may86	15may86	16may86	20may86	20may86	20may86	22may86	22may86
Julian Day		122	122	122	122	122	122	135	136	140	140	140	142	142
Tide		hf	lr	h	h	hf	hf	l	lr	lr	lr	lr	lr	lr
Current		e	f	s	s	e	e	s	f	f	f	f	f	f
Cloud /10		6	6	6	6	8	8	8	10	6	6	6	6	6
Precip 0/1/2/3		0	0	0	0	0	0	0	4	3	3	3	0	0
CHINOOK	A													
CHUM	A							30	9	1		4		16
COHO	A											1		
DOLLY VAR	A					1								
PINK	A		7			1		13	26		1		1	5
SOCKEYE	A							4						
STL HEAD	A													
ALL SALMONIDS		0	7	0	0	2	0	47	35	1	1	5	1	21
GREENLING	B													
PAC COD	B													
PAC HRNG	B													
PAC SNDFS	B													
ROCK COD	B													
SHNR PRCH	B													
SMELT	B							5		4				
SND LANCE	B													
STGN PCHR	B													
STKLBACK	B										30			
ALL OTHER PELAG		0	0	0	0	0	0	5	0	4	30	0	0	0
ENG SOLE	C													
ROCK SOLE	C													
SAND SOLE	C													
STARRY FL	C								1			7		
ALL FLATFISH		0	0	0	0	0	0	0	1	0	0	7	0	0
NOR SCULP	D											1		
BUF SCULP	D								1					
CRES GUNN	D							2	1				1	7
PNPT GUNN	D													
DUN CRAB	D													
GRT SCULP	D													
NO CLNFSH	D								1					
RVR LMPRY	D													
SNK PKLBK	D							8	1					23
STG SCULP	D			1			1	2				4		1
ALL OTHER DEMER		0	0	1	0	0	1	12	4	0	0	5	1	31
TOTAL		0	7	1	0	2	1	64	40	5	31	17	2	52

Table 2. Beach seine raw data.

Seine#		16	17	18	19	20	21	22	23	24	25	26	27	28
Station		E	E	D	D	F	G	G	H	H	I	I	J	J
Time		10:50	11:45	14:00	14:30	10:55	11:55	12:03	11:55	12:25	13:04	13:50	12:30	12:55
Date		22may86	22may86	22may86	22may86	26may86	26may86	26may86	27may86	27may86	27may86	27may86	28may86	29may86
Julian Day		142	142	142	142	146	146	146	147	147	147	147	148	149
Tide		lr	lr	h	h	l	lr	lr	lr	lr	lr	lr	lf	l
Current		f	f	s	e	s	f	f	f	f	f	f	e	s
Cloud /10		9	8	9	9	5	7	7	10	10	10	10	10	10
Precip 0/1/2/3		0	0	0	0	0	0	0	3	3	3	3	2	0
CHINOOK	A		6			3							2	
CHUM	A		2				5	7	2		2	1	6	
COHO	A		4		1	2							69	
DOLLY VAR	A												1	
PINK	A	24	1			10	8	3			3	15	12	
SOCKEYE	A	2	15		68	311	2	3				STL HEAD	A	
ALL SALMONIDS		26	28	0	69	326	15	13	2	0	5	19	90	0
GREENLING	B													
PAC COD	B													
PAC HRNG	B				10	3							10	
PAC SNDFS	B													
RCK COD	B													
SHNR PRCH	B										44			
SMELT	B	50	245		11		5	1	4					
SND LANCE	B				5									
STGN PCHR	B													
STKLBACK	B											3		
ALL OTHER PELAG		50	245	0	26	3	5	1	4	0	44	3	10	0
ENG SOLE	C													
ROCK SOLE	C								3	1			6	4
SAND SOLE	C													
STARRY FL	C				2		6	1	21	1	1	1	48	14
ALL FLATFISH		0	0	0	2	0	6	1	24	2	1	1	54	18
NOR SCULP	D													
BUF SCULP	D						1						6	
CRES GUNN	D		1		2						1	1	6	1
PNPT GUNN	D													
DUN CRAB	D					3								
GRT SCULP	D													
NO CLNFSH	D												1	
RVR LMPRY	D													
SNK PKLBK					4					3			44	
STG SCULP	D				2				3	1	1		12	5
ALL OTHER DEMER		0	1	0	8	3	1	0	3	4	2	1	69	6
TOTAL		76	274	0	105	332	27	15	33	6	52	24	223	24

Seine#		29	30	31	32	33	34	35	36	37	38	39	40	41
Station		C	C	K	K	L	K	M	F	F	K	K	L	L
Time		13:15	14:15	13:20	13:35	14:20	15:00	16:05	11:35	12:03	10:15	10:25	10:45	11:00
Date		29may86	29may86	30may86	30may86	30may86	30may86	30may86	02jun86	02jun86	03jun86	03jun86	03jun86	03jun86
Julian Day		149	149	150	150	150	150	150	153	153	154	154	154	154
Tide		l	lr	lf	lf	lr	lr	lr	hf	hf	hf	hf	hf	hf
Current		s	f	e	e	f	f	f	e	e	e	e	e	e
Cloud /10		10	9	1	1	1	1	1	5	5	0	0	0	0
Precip 0/1/2/3		0	0	0	0	0	0	0	0	0	0	0	0	0
CHINOOK	A	1	8					21						
CHUM	A	9	2			1	4	5						
COHO	A	15	31					61	4	2				
DOLLY VAR	A	1	1						2					
PINK	A	76	11					8			10			1
SOCKEYE	A								2	2		1		
STL HEAD	A													
ALL SALMONIDS		102	53	0	0	1	4	95	8	4	10	1	0	1
GREENLING	B	2												
PAC COD	B		2											
PAC HRNG	B	10	63								4			28
PAC SNDFS	B													
RCK COD	B													
SHNR PRCH	B	2					5	3						
SMELT	B					500	84	20	3			31	14	2
SND LANCE	B						1		1	3				
STGN PCHR	B													
STKLBACK	B		2											
ALL OTHER PELAG		14	67	0	0	500	90	23	4	3	4	31	14	30
ENG SOLE	C				1		14	87						
ROCK SOLE	C						5							
SAND SOLE	C					20								
STARY FL	C	1	1			4	1	24	2	4				
ALL FLATFISH		1	1	0	1	24	20	111	2	4	0	0	0	0
NOR SCULP	D													
BUF SCULP	D	1						1						
CRES GUNN	D	1	1											
PNPT GUNN	D													
DUN CRAB	D			2					7	2				
GRT SCULP	D	1												
NO CLNFSH	D													
RVR LMPRY	D													
SNK PKLBK	D	1		1			1	7	1	2				
STG SCULP	D		1			5	1	24	3	10				
ALL OTHER DEMER		4	2	3	0	5	2	32	11	14	0	0	0	0
TOTAL		121	123	3	1	530	116	261	25	25	14	32	14	31

Seine#		42	43	44	45	C1	46	C2	C3	47	C4	C5	48	49
Station		H	H	M	M	T	J	U	V	J	W	K	H	H
Time		11:35	11:50	12:20	12:38	10:50	11:05	11:20	1:40	12:05	12:05	12:45	13:13	13:22
Date		03jun86	03jun86	03jun86	03jun86	05jun86	05jun86	05jun86	05jun86	05jun86	05jun86	05jun86	05jun86	05jun86
Julian Day		154	154	154	154	156	156	156	156	156	156	156	156	156
Tide		hf	hf	hf	hf	lr	lr	lr	lr	lr	lr	lr	h	h
Current		e	e	e	e	f	f	f	f	f	f	f	s	s
Cloud /10		0	0	0	0	10	5	4	3	3	9	9	8	8
Precip 0/1/2/3		0	0	0	0	0	0	0	0	0	0	0	0	0
CHINOOK	A				1						1			
CHUM	A		1	1						1	1			
COHO	A		1	1	3		3	6		1	7	1		
DOLLY VAR	A				1					1	1	21		
PINK	A									1	1			
SOCKEYE	A	7	6						1		12			
STL HEAD	A													
ALL SALMONIDS		7	8	2	5	0	3	6	1	4	23	22	0	0
GREENLING	B													
PAC COD	B													
PAC HRNG	B			17	21	60		150	200	1	130	25		
PAC SNDFS	B													
RCK COD	B													
SHNR PRCH	B					25				1	30			
SMELT	B	6		3	6	10	4			5	40	60		3
SND LANCE	B											10		
STGN PCHR	B													
STKLBACK	B					6		1			6			
ALL OTHER PELAG		6	0	20	27	101	4	151	200	7	206	95	0	3
ENG SOLE	C													
ROCK SOLE	C													
SAND SOLE	C													
STARRY FL	C						24			13				
ALL FLATFISH		0	0	0	0	0	24	0	0	13	0	0	0	0
NOR SCULP	D													
BUF SCULP	D													
CRES GUNN	D													
PNPT GUNN	D													
DUN CRAB	D													
GRT SCULP	D													
NO CLNFSH	D													
RVR LMPRY	D													
SNK PKLBK	D						9			15				
STG SCULP	D				4	5	30			6				
ALL OTHER DEMER		0	0	0	4	5	39	0	0	21	0	0	0	0
TOTAL		13	8	22	36	106	70	157	201	45	229	117	0	3

Seine#		C6	50	C7	C8	51	52	53	54	C9	C10	C11	C12	C13
Station		X	M	Y	Z	M	C	C	D	K	V	AA	AA	AB
Time		13:40	13:55	14:05	14:20	14:50	10:30	11:15	11:50	11:43	12:15	13:20	13:30	13:45
Date		05jun86	05jun86	05jun86	05jun86	05jun86	06jun86	06jun86	06jun86	09jul86	09jul86	09jul86	09jul86	09jul86
Julian Day		156	156	156	156	156	157	157	157	160	160	160	160	160
Tide		h	hf	hf	hf	hf	lr	lr	lr	lr	lr	lr	lr	lr
Current		f	e	e	e	s	f	f	f	f	f	f	f	f
Cloud /10		9	10	9	6	10	9	9	10	10	10	10	10	10
Precip 0/1/2/3			0	0	0	0	0	0	0	0	0	0	0	0
CHINOOK	A													
CHUM	A					4		2	14		8	1		
COHO	A	2	6		2		4	1						
DOLLY VAR	A	1	1					4		3		1		
PINK	A					1	2	2						
SOCKEYE	A			1	2							1		
STL HEAD	A													
ALL SALMONIDS		3	7	1	4	5	6	9	14	3	8	3	0	0
GREENLING	B													
PAC COD	B													
PAC HRNG	B			5	45	9	42	18	1				3	22
PAC SNDFS	B													
RCK COD	B													
SHNR PRCH	B					1				4		9	1	
SMELT	B		2		30		10	10	4		13		6	
SND LANCE	B			1										
STGN PCHR	B													
STKLBACK	B	6			12		1	1						10
ALL OTHER PELAG		6	2	6	87	10	53	29	5	4	13	9	10	32
ENG SOLE	C		1			1			2	2	1			
ROCK SOLE	C													
SAND SOLE	C													
STARRY FL	C	1	2			1			6	49		1		
ALL FLATFISH		1	3	0	0	2	0	0	8	51	1	1	0	0
NOR SCULP	D													
BUF SCULP	D											2		
CRES GUNN	D					1	1	1	4		1	1		
PNPT GUNN	D													
DUN CRAB	D													
GRT SCULP	D													
NO CLNFSH	D													
RVR LMPRY	D													
SNK PKLBK	D							1	4	9	3	25	4	
STG SCULP	D		8			1			1	2				
ALL OTHER DEMER		0	8	0	0	2	1	2	9	11	4	28	4	0
TOTAL		10	20	7	91	19	60	40	36	69	26	41	14	32

Seine#		C14	C15	C16	C17	C18	C19	C20	C21	C22	55	56	57	58
Station		AB	Z	Z	X	X	Y	Y	I	T	E	E	E	E
Time		13:59	14:35	14:45	15:00	15:10	15:28	15:38	16:00	16:30	15:40	16:15	10:21	10:48
Date		09jul86	09jul86	09jul86	09jul86	09jul86	09jul86	09jul86	09jul86	09jul86	10jun86	10jun86	11jun86	11jun86
Julian Day		160	160	160	160	160	160	160	160	160	161	161	162	162
Tide		lr	lr	lr	lr	lr	lr	lr	lr	h	h	h	l	l
Current		f	f	f	f	f	f	f	f	s	s	s	s	s
Cloud /10		10	10	10	10	10	10	10	10	10	10	10	4	4
Precip 0/1/2/3		0	0	0	0	0	0	0	0	0	1	1	0	0
CHINOOK	A											1		2
CHUM	A		1							1		1		2
COHO	A				1							2		4
DOLLY VAR	A		2				2	1		1		1		
PINK	A													2
SOCKEYE	A													2
STL HEAD	A													1
ALL SALMONIDS		0	3	0	1	0	2	1	0	2	0	5	0	13
GREENLING	B													
PAC COD	B													
PAC HRNG	B	125	20						60					
PAC SNDFS	B										1	1		
ROK COD	B													
SHNR PRCH	B			1	15		1							
SMELT	B	25	1			13	3	55	40		33	45	4	3
SND LANCE	B													
STGN PCHR	B										1			
STKLBACK	B	15	5	1	28	8						1		1
ALL OTHER PELAG		165	26	2	43	21	4	55	100	0	35	47	4	4
ENG SOLE	C													
ROCK SOLE	C													
SAND SOLE	C													
STARRY FL	C		28		24	11	3	2					1	1
ALL FLATFISH		0	28	0	24	11	3	2	0	0	0	0	1	1
NOR SCULP	D													
BUF SCULP	D													
CRES GUNN	D		3										5	3
PNPT GUNN	D													
DUN CRAB	D							30						
GRT SCULP	D													
NO CLNFSH	D												2	
RVR LMPRY	D													
SNK PKLBK	D													
STG SCULP	D		6	1		7	1			1				
ALL OTHER DEMER		0	9	1	1	7	1	30	0	1	0	0	7	3
TOTAL		165	66	3	69	39	10	88	100	3	35	52	12	21

Seine#		59	60	61	62	63	64	65	66	67	68	69	70	71
Station		F	F	G	F	F	A	A	N	N	C	C	A	A
Time		11:25	11:50	12:37	16:34	17:02	11:23	11:49	12:43	13:07	13:37	13:54	15:05	15:30
Date		11jun86	11jun86	11jun86	11jun86	11jun86	12jun86	12jun86	12jun86	12jun86	12jun86	12jun86	16jun86	16jun86
Julian Day		162	162	162	162	162	163	163	163	163	163	163	167	167
Tide		l	lr	lr	h	h	l	l	lr	lr	lr	lr	lr	lr
Current		s	f	f	s	s	e	e	f	f		f	s	f
Cloud /10		4	2	3	0	1	0	0	0	0	0	0	0	0
Precip 0/1/2/3		0	0	0	0	0	0	0	0	0	0	0	0	0
CHINOOK	A	1		3	3	1	2	1	2		1			
CHUM	A					1		1					1	
COHO	A			1	2		2	6	1	3	2	1	6	2
DOLLY VAR	A		1		5	11	1	1			1	5	1	
PINK	A	2					6		2	6	3	1	3	
SOCKEYE	A	4					2	1			1		2	1
STL HEAD	A													
ALL SALMONIDS		7	1	4	10	13	13	10	5	9	8	7	13	3
GREENLING	B										1		1	
PAC COD	B													
PAC HRNG	B								12	27			1	
PAC SNDFS	B		1						1			1		
ROCK COD	B													
SHNR PRCH	B												1	
SMELT	B	15	13				8	21	33	33	1	10	8	3
SND LANCE	B													
STGN PCHR	B													
STKLBACK	B						1	3	1					
ALL OTHER PELAG		15	14	0	0	0	9	24	47	60	2	11	11	3
ENG SOLE	C	1								3	2	1	2	1
ROCK SOLE	C								3					
SAND SOLE	C								1					
STARRY FL	C	1		9	2			2	22	13	1		1	1
ALL FLATFISH		2	0	9	2	0	0	2	26	16	3	1	3	2
NOR SCULP	D													
BUF SCULP	D						1	2			9	3	2	
CRES GUNN	D		1		1		8	2			6	3	3	1
PNPT GUNN	D													
DUN CRAB	D								6	4			2	
GRT SCULP	D													
NO CLNFSH	D												1	
RVR LMPRY	D													
SNK PKLBK	D	15	21		1	1	4	7	100	85	47	7	5	24
STG SCULP	D	1	8	1	13	5	1	3	10	3	6		6	1
ALL OTHER DEMER		16	30	1	15	6	14	14	116	92	68	13	19	26
TOTAL		40	45	14	27	19	36	50	194	177	81	32	46	34

Seine#		72	73	74	75	76	77	79	80	81	82	83	84	85
Station		N	N	J	J	M	M	J	M	M	I	I	I	M
Time		16:40	17:05	15:01	15:28	16:30	16:43	10:14	10:50	11:16	11:50	12:21	13:56	15:15
Date		16jun86	16jun86	17jun86	17jun86	17jun86	17jun86	18jun86	18jun86	18jun86	18jun86	18jun86	18jun86	18jun86
Julian Day		167	167	168	168	168	168	169	169	169	169	169	169	169
Tide		lr	lr	f	f	lr	lr	lr	lr	h	hf	hf	hf	hf
Current		f	f	s	e	f	f	f	f	s	e	e	e	e
Cloud /10		2	1	4	4	3	4	7	4	8	7	7	7	4
Precip 0/1/2/3		0	0	1	0	0	0	1	0	0	0	0	0	0
CHINOOK	A		1								1	1		
CHUM	A		2		1									
COHO	A	1						2		1	6	2	25	
DOLLY VAR	A	2	2	1	2	3	4	1	9	2		1		2
PINK	A		7	1	1									
SOCKEYE	A					1				1	1			
STL HEAD	A													
ALL SALMONIDS		3	12	2	4	4	4	3	9	4	8	4	25	2
GREENLING	B													
PAC COD	B					1								
PAC HRNG	B		1			7	1560	2	20		9	14	40	168
PAC SNDFS	B								2			22	4	4
ROCK COD	B													1
SHNR PRCH	B						1				4	1	1	2
SMELT	B	128	68	1	32	5	101	145	12	1	208	135	77	35
SND LANCE	B													
STGN PCHR	B													
STKLBACK	B	1			17	6				2	27			
ALL OTHER PELAG		129	69	1	49	19	1662	147	34	3	248	172	12	210
ENG SOLE	C	8	13	6	3	27	10		2					15
ROCK SOLE	C						1							
SAND SOLE	C													3
STARRY FL	C	39	77	5	2	25	2	3	5					21
ALL FLATFISH		47	90	11	5	52	13	3	7	0	0	0	0	39
NOR SCULP	D													
BUF SCULP	D			17	3			1						
CRES GUNN	D	1	7	6	7	24								
PNPT GUNN	D													
DUN CRAB	D		4	5	3	5	5							10
GRT SCULP	D													
NO CLNFSH	D							1						
RVR LMPRY	D													
SNK PKLBK	D			16	5	3	4	7		1				22
STG SCULP	D	20	19	4	3	23	8	3				3		19
ALL OTHER DEMER		21	30	48	21	55	17	12	0	1	0	3	0	51
TOTAL		200	201	62	79	130	1696	165	50	8	256	179	147	302

Seine#		86	78	87	88	89	90	91	92	94	93	95	96	97
Station		M	J	K	K	K	K	O	O	J	J	P	H	H
Time		15:57	22:04	12:08	12:32	13:32	14:00	14:50	15:35	15:00	15:21	16:35	10:27	10:36
Date		18jun86	18jun86	19jun86	19jun86	19jun86	19jun86	20jun86	20jun86	23jun86	23jun86	23jun86	24jun86	24jun86
Julian Day		169	169	170	170	170	170	171	171	174	174	174	175	175
Tide		hf	lr	h	h	hf	hf	h	hf	h	h	hf	l	lr
Current		e	f	s	s	e	e	f	e	f	f	e	s	f
Cloud /10		4	4	7	3	9	10	4	9	10	10	10	1	4
Precip 0/1/2/3		0	0	0	0	0	1	0	0	0	0	1	0	0
CHINOOK	A													
CHUM	A			1										
COHO	A	2					1					2		
DOLLY VAR	A	1	3		6		2						1	
PINK	A	3		1										
SOCKEYE	A						1	1	3					
STL HEAD	A													
ALL SALMONIDS		6	3	2	6	0	4	1	3	0	0	2	1	0
GREENLING	B								2					
PAC COD	B													
PAC HRNG	B	17								1	1			
PAC SNDFS	B	10				4	3			1				
RCK COD	B													
SHNR PRCH	B					4			11					
SMELT	B	7	167	17	2	164	43	256	11	6	4	21	6	
SND LANCE	B				1	1							5	
STGN PCHR	B													
STKLBACK	B	7	3							2				
ALL OTHER PELAG		41	170	17	3	173	46	256	24	10	5	21	11	0
ENG SOLE	C	9			4	3							30	
ROCK SOLE	C													
SAND SOLE	C						1							12
STARRY FL	C	9	7		6		2	2	4					
ALL FLATFISH		18	7	0	10	3	3	2	4	0	0	0	30	12
NOR SCULP	D													
BUF SCULP	D													
CRES GUNN	D	29							2					
PNPT GUNN	D													
DUN CRAB	D	43												
GRT SCULP	D													
NO CLNFSH	D													
RVR LMPRY	D													
SNK PXLBK	D	3	8				1		3					
STG SCULP	D	22	5		2		4	15	12			4	5	1
ALL OTHER DEMER		97	13	0	2	0	5	15	17	0	0	4	5	1
TOTAL		162	193	19	21	176	58	274	48	10	5	27	47	13

Seine#		98	99	100	101	102	103	104	105	106	107	108	109	110
Station		M	M	K	K	N	N	E	E	F	F	A	A	Q
Time		11:23	11:58	10:20	10:50	12:03	12:22	11:23	11:50	12:4	12:20	13:36	13:53	12:55
Date		24jun86	24jun86	25jun86	25jun86	25jun86	25jun86	26jun86	26jun86	26jun86	26jun86	26jun86	26jun86	3jul86
Julian Day		175	175	176	176	176	176	177	177	177	177	177	177	184
Tide		lr	lr	lf	l	lr	l	l	lf	lf	lf	lr	lr	h
Current		f	f	e	s	f	f	e	e	e	e	f	f	s
Cloud /10		2	4	5	5	4	4	0	0	0	0	0	0	7
Precip 0/1/2/3		0	0	0	0	0	0	0	0	0	0	0	0	0
CHINOOK	A													1
CHUM	A	2				2						2		1
COHO	A					1								
DOLLY VAR	A			1	2			1		1	1			2
PINK	A	2						1				1		
SOCKEYE	A							2						
STL HEAD	A													
ALL SALMONIDS		4	0	1	2	3	0	4	0	1	1	3	0	4
GREENLING	B						1							
PAC COD	B	2												
PAC HRNG	B													
PAC SNDFS	B	1		1		4	4	1		12	2	4	9	
RCK COD	B													
SHNR PRCH	B						1							
SMELT	B	12	75	9	11	107	171	48	8	91	28	20	8	
SND LANCE	B													
STGN PCHR	B													
STKLBACK	B					2	1							
ALL OTHER PELAG		15	75	10	11	113	178	49	8	103	30	24	17	0
ENG SOLE	C	32		55	35		6			1				1
ROCK SOLE	C													
SAND SOLE	C	2	5											
STARY FL	C	30	4	7		5	14			7				7
ALL FLATFISH		64	9	62	35	5	20	0	0	8	0	0	0	8
NOR SCULP	D													
BUF SCULP	D	2	1								1	3	1	
CRES GUNN	D							1	2			7	8	
PNPT GUNN	D				3					1	7	1		
DUN CRAB	D	9	5	1										
GRT SCULP	D							1		1			1	
NO CNFSH	D													
RVR LMPRY	D										1			
SNK PKLBK	D	45	6	12	11	10	14			23	8	6	21	
STG SCULP	D	9	4	3	22	6	10	1	3	10	7	8	8	1
ALL OTHER DEMER		65	16	36	36	16	24	3	5	35	24	25	39	1
TOTAL		148	100	109	84	137	222	56	13	147	55	52	56	13

Seine#		111	112	113	114	115	116	117	118	119	120	121	122	123
Station		O	F	F	E	A	A	J	J	M	M	L	L	M
Time		13:08	13:27	13:38	13:52	11:56	12:10	13:01	13:18	13:49	14:01	10:03	10:24	11:01
Date		3jul86	3jul86	3jul86	3jul86	4jul86	4jul86	4jul86	4jul86	4jul86	4jul86	7jul86	7jul86	7jul86
Julian Dy		184	184	184	184	185	185	185	185	185	185	188	188	188
Tide		h	hf	hf	hf	lr	h	lf	hf	hf	hf	lr	lr	lr
Current		s	e	e	e	f	s	e	s	s	s	e	e	f
Cloud /10		7	9	8	8	7	9	10	10	9	8	9	9	10
Precip 0/1/2/3		0	0	1	1	0	0	0	0	0	0	0	0	0
CHINOOK	A													
CHUM	A				1									
COHO	A		1		1			2	1	2		1		
DOLLY VAR	A	1	5	5		3					2	3	3	1
PINK	A													
SOCKEYE	A													
STL HEAD	A													
ALL SALMONIDS		1	6	5	2	3	0	2	1	2	2	4	3	1
GREENLING	B													
PAC COD	B													
PAC HRNG	B				4									
PAC SNDFS	B		1	1				1						
ROK COD	B													
SHNR PRCH	B							2	3			2	20	2
SMELT	B		2	1	5			9		10			65	3
SND LANCE	B					1				1	43			
STGN PCHR	B													
STKLBACK	B										3			
ALL OTHER PELAG		0	3	2	9	1	0	12	3	11	46	2	85	5
ENG SOLE	C											26	20	4
ROCK SOLE	C													
SAND SOLE	C													
STARRY FL	C		6	1				2		3	1	16	10	6
ALL FLATFISH		0	6	1	0	0	0	2	0	3	1	42	30	10
NOR SCULP	D													
BUF SCULP	D					1	3							
CRES GUNN	D					1	1							2
PNPT GUNN	D		9	3				1						15
DUN CRAB	D													
GRT SCULP	D													
NO CLNFSH	D													
RVR LMPRY	D													
SNK PKLBK	D		37	18		5	8	7	3				3	4
STG SCULP	D	1	10	4			5	1		4	2	10	2	9
ALL OTHER DEMER		1	56	25	0	7	17	9	3	4	2	10	5	30
TOTAL		2	71	33	11	11	17	25	7	20	51	58	123	46

Seine#		124	125	126	127	128	129	130	131	132	133	134	135	136
Station		M	N	N	S	S	R	Q	Q	J	J	M	M	K
Time		11:22	12:09	12:17	10:14	10:27	11:47	13:04	13:27	12:25	13:05	14:28	14:54	15:27
Date		7jul86	7jul86	7jul86	8jul86	8jul86	8jul86	8jul86	8jul86	9jul86	9jul86	9jul86	9jul86	9jul86
Julian Day		188	188	188	189	189	189	189	189	190	190	190	190	190
Tide		lr	lr	lr	l	lr	lr	lr	lr	lr	lr	lr	lr	lr
Current		f	e	e	s	f	f	f	f	f	f	f	f	f
Cloud /10		9	8	9	9	9	9	9	9	8	8	7	8	8
Precip 0/1/2/3		0	0	0	1	2	0	1	0	0	0	0	0	0
CHINOOK	A				1		1							
CHUM	A									1				
COHO	A							1						
DOLLY VAR	A		2	1	4			2		1	3	1	3	1
PINK	A													
SOCKEYE	A													
STL HEAD	A													
ALL SALMONIDS		0	2	1	5	0	1	3	0	2	3	1	3	1
GREENLING	B													
PAC COD	B													
PAC HRNG	B				2								45	
PAC SNDFS	B							5					1	
RCK COD	B													
SHNR PRCH	B	1								1		6	8	4
SMELT	B	7			5					1			6	4
SND LANCE	B													1
STGN PCHR	B													
STKLBACK	B									1				
ALL OTHER PELAG		8	0	0	7	0	0	5	0	3	0	6	60	9
ENG SOLE	C	5	15	13	2	3	10	2	2	3		1	1	1
ROCK SOLE	C													
SAND SOLE	C													
STARRYFL	C	4	42	28	2	30	3	11	1	42	26	4	2	11
ALL FLATFISH		9	57	41	4	33	13	13	3	45	26	5	3	12
NOR SCULP	D													
BUF SCULP	D									2				
CRES GUNN	D	1	1	3				1		8	2			
PNPT GUNN	D	1			2	4		9	2	5			3	
DUN CRAB	D													
GRT SCULP	D									1				
NO CLNFSH	D													
RVR LMPRY	D													
SNK PKLBK	D				23	5	16	7	8	130	7		2	
STG SCULP	D	13	6	13	1	24	3	15	6	11	26	1	2	5
ALL OTHER DEMER		15	7	16	26	33	19	32	16	157	35	1	7	5
TOTAL		32	66	58	42	66	33	53	19	207	64	13	73	27

Skeena Juvenile Salmon Project: Beach seine raw data.

Seine#		137	138	139	140	141	142	143	144	145	146	147	148	149
Station		K	A	A	N	N	J	J	E	E	F	F	M	M
Time		15:45	12:19	12:32	13:06	13:27	13:51	14:13	13:57	14:03	14:25	14:50	13:55	14:06
Date		9jul86	21jul86	21jul86	21jul86	21jul86	21jul86	21jul86	28jul86	28jul86	28jul86	28jul86	29jul86	29jul86
Julian Day		190	202	202	202	202	202	202	209	209	209	209	210	210
Tide		h	hr	hr	hr	hr	h	h	lr	l	l	lf	lf	l
Current		s	f	f	f	f	s	s	f	f	f	f	e	s
Cloud /10		8	10	10	10	10	10	10	10	10	10	10	6	6
Precip 0/1/2/3		0	0	0	0	0	0	0	0	0	0	0	0	0
CHINOOK	A													
CHUM	A													
COHO	A													
DOLLY VAR	A	1		1							2			
PINK	A													
SOCKEYE	A													
STL HEAD	A													
ALL SALMONIDS		1	0	1	0	0	0	0	0	0	2	0	0	0
GREENLING	B				2									
PAC COD	B													
PAC HRNG	B						3	1						
PAC SNFS	B		1				1							
RCK COD	B													
SHNR PRCH	B	9			6	11	1	5			2	4	1	
SMELT	B	185	31	37			8	9			11	2		1
SND LANCE	B	70												
STGN PCHR	B													
STKLBACK	B													
ALL OTHER PELAG		264	32	37	8	11	13	15	0	0	13	6	1	1
ENG SOLE	C								1		14	7	16	4
ROCK SOLE	C													
SAND SOLE	C									1				
STARRY FL	C	37	8	11	12	10	1			2	3	6	1	
ALL FLATFISH		37	8	11	12	10	1	0	1	3	17	13	17	4
NOR SCULP	D													
BUF SCULP	D													
CRES GUNN	D				2	3			4	6				
PNPT GUNN	D										1		7	6
DUN CRAB	D													
GRT SCULP	D													
NO CLNFSH	D													
RVR LMPRY	D													
SNK PKLBK	D		31	21	60	39	1	2			24	13		
STG SCUL	D	4	7	4	1	2		1	1		5	3	1	2
ALL OTHER DEMER		4	38	25	63	44	1	3	5	6	30	16	8	8
TOTAL		306	78	74	83	65	15	18	6	9	62	35	26	13

Seine#		150	151	152	153	154	155	156	157	158	159	160	161	162
Station		K	N	N	A	A	J	L	L	M	M	N	N	E
Time		14:27	15:25	15:33	15:51	16:20	17:06	14:16	14:23	14:57	15:13	15:46	16:09	14:49
Date		29jul86	29jul86	29jul86	31jul86	31jul86	31jul86	05aug86	05aug86	05aug86	05aug86	05aug86	05aug86	06aug86
Julian Day		210	210	210	212	212	212	217	217	217	217	217	217	218
Tide		lr	lr	lr	l	l	lr	hr	hr	h	hf	hf	hf	h
Current		s	f	f	s	s	f	f	f	s	e	e	e	f
Cloud /10		5	4	3	10	10	10	9	9	9	9	9	9	1
Precip 0/1/2/3		0	0	0	3	3	3	0	0	0	0	0	0	0
CHINOOK	A													1
CHUM	A													
COHO	A													
DOLLY VAR	A					1								
PINK	A													
SOCKEYE	A													
STL HEAD	A													
ALL SALMONIDS		0	0	0	0	1	0	0	0	0	0	0	0	1
GREENLING	B													
PAC COD	B													
PAC HRNG	B	2			22									
PAC SNDFS	B								1		5			
RCK COD	B													
SHNR RCH	B	1			10	56	9		1	2	2	2		
SMELT	B	2			50				50	28	6			50
SND LANCE	B				2				300		3			
STGN PCHR	B													
STKLBACK	B		1											
ALL OTHER PELAG		5	1	0	84	56	9	0	352	30	16	2	0	50
ENG SOLE	C	15	10	1	3	2	3			1			3	
ROCK SOLE	C													
SAND SOLE	C							3						
STARRY FL	C		1	4			14	1		1				
ALL FLATFISH		15	11	5	3	2	17	4	0	2	0	0	3	0
NOR SCULP	D													
BUF SCULP	D	2												
CRES GUNN	D	2			5	3						1	2	
PNPT GUNN	D											1		
DUN CRAB	D				1		2							
GRT SCULP	D													
NO CLNFSH	D													
RVR LMPRY	D													
SNK PKLBK	D	9			36	17	9					3	2	
STG SCULP	D	3	20	2	8	2	13	1	1	1				
ALL OTHER DEMER		16	20	2	50	22	24	1	1	1	0	5	4	0
TOTAL		36	32	7	137	81	50	5	353	33	16	7	7	51

Seine#		163	164	165	166	167	168	169	170	171	172	173	174	175
Station		E	F	F	A	K	K	L	L	M	M	J	J	N
Time		15:00	15:15	15:39	16:29	15:20	15:45	16:18	16:27	12:43	12:59	13:38	13:59	14:47
Date		06aug86	06aug86	06aug86	06aug86	07aug86	07aug86	07aug86	07aug86	11aug86	11aug86	11aug86	11aug86	11aug86
Julian Day		218	218	218	218	219	219	219	219	223	223	223	223	223
Tide		h	h	hf	hf	h	h	hf	hf	lr	lr	lr	lr	lr
Current			s	e	e	s	s	e	e	f	f	f	f	f
Cloud /10		1	1	1	1	0	0	0	0	10	10	10	10	10
Precip 0/1/2/3		0	0	0	0	0	0	0	0	0	0	1	1	2
CHINOOK	A													
CHUM	A													
COHO	A													
DOLLY VAR	A													
PINK	A													
SOCKEYE	A													
STL HEAD	A													
ALL SALMONIDS		0	0	0	0	0	0	0	0	0	0	0	0	0
GREENLING	B													
PAC COD	B													
PAC HRNG	B				1									
PAC SNDFS	B													
RCK COD	B													
SHNR PRCH	B	6				73	27	15	9		3	5	7	
SMELT	B	106	70	50	25			4	1					
SND LANCE	B							30	160					
STGN PCHR	B													
STKLBACK	B													
ALL OTHER PELAG		112	70	50	26	73	27	49	170	5	3	5	7	0
ENG SOLE	C					1	7			2	2	3		
ROCK SOLE	C													
SAND SOLE	C													
STARRY FL	C		2	5		2	3	1	2	2	3	6	5	13
ALL FLATFISH		0	2	5	0	3	10	1	2	4	5	9	5	13
NOR SCULP	D													
BUF SCULP	D													
CRES GUNN	D		3	4								1	2	1
PNPT GUNN	D													
DUN CRAB	D									27	32			
GRT SCULP	D													
NO CLNFSH	D													
RVR LMPRY	D													
SNK PKLBK	D		11	8								1		
STG SCULP	D		7			3	5	4	3	2	1	10	8	7
ALL OTHER DEMER		0	21	12	0	3	5	4	3	29	33	12	10	8
TOTAL		112	93	67	26	79	42	54	175	38	41	26	22	21

Seine#		176	181	182	177	178	179	180	183	184	185	186
Station		N	A	A	E	E	F	F	AC	AC	AD	AD
Time		15:05	11:05	11:27	12:05	19:00	21:04	23:05	13:48	14:00	15:18	15:37
Date		11aug86	18aug86	18aug86	18aug86	18aug86	18aug86	18aug86	20aug86	20aug86	20aug86	20aug86
Julian Day		223	230	230	230	230	230	230	232	232	232	232
Tide		lr	lr	lr	lr	lr	lr	lr	h	h	hf	hf
Current		f	f	f	f	f	f	f	s	s	e	e
Cloud /10		10	4	4	4	4	4	4	0	0	0	0
Precip 0/1/2/3		2	0	0	0	0	0	0	0	0	0	0
CHINOOK	A											
CHUM	A											
COHO	A		1									
DOLLY VAR	A						2	5	2			
PINK	A		2									
SOCKEYE	A											
STL HEAD	A											
ALL SALMONIDS		0	3	0	0	0	2	5	2	0	0	0
GREENLING	B											
PAC COD	B											
PAC HRNG	B			1								
PAC SNDFS	B						1					
ROCK COD	B											
SHNR PRCH	B			6	1	1			11	50	15	5
SMELT	B		1									
SND LANCE	B											
STGN PCHR	B											
STKLBACK	B								146	900	1	4
ALL OTHER PELAG		0	1	7	1	1	1	0	157	950	16	9
ENG SOLE	C						2	3				
ROCK SOLE	C											
SAND SOLE	C											
STARRY FL	C	7									1	
ALL FLATFISH		7	0	0	0	0	2	3	0	0	1	0
NOR SCULP	D											
BUF SCULP	D											1
CRES GUNN	D			3	1	12			1			
PNPT GUNN	D											1
DUN CRAB	D			1	2	1	8	4			3	
GRT SCULP	D											
NO CLNFSH	D											
RVR LMPRY	D											
SNK PKLBK	D		8	23		1	1	6				
STG SCULP	D	6		2	1	3	2	4	5	2	2	1
ALL OTHER DEMER		6	8	29	4	17	11	14	6	2	5	3
TOTAL		13	12	36	5	18	16	22	165	952	22	12