

Eldorado River Salmon Counting Tower  
Project Summary Report, 1998

by

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## INTRODUCTION

The Eldorado River counting tower is a cooperative project funded and operated by the Kawerak Corporation. The Alaska Department of Fish & Game (ADF&G) provided equipment for this project. ADF&G analyzed and expanded the tower count data to produce this report, as part of its contribution to this cooperative effort.

The counting tower was successfully operated in 1995, 1996 and 1997 (Rob 1995, 1997 and 1998). The 1998 season was the fourth year a salmon counting tower has been operated on the Eldorado River. The project is operated to obtain timely and accurate escapement information required for the active management of the salmon stocks throughout the season. The Eldorado River drains into Safety Sound approximately 14 miles east of Nome (Figure 1). Historically this drainage supports the largest escapements of chum salmon of the various streams in the Nome Subdistrict.

## OBJECTIVES

To obtain daily and seasonal information concerning the timing and magnitude of the chum, pink, king and coho salmon escapement to the Eldorado River.

## METHODS

The Eldorado River counting tower camp is located on Sitnasuak Native Corporation land, just above the furthest upstream connecting channel to the Flambeau River. The camp is approximately 45 minutes by boat from the Safety Sound highway bridge.

A tent camp with two tent frames and an outhouse was set up at the end of June. A 15 foot high scaffolding tower was erected on the bank of the river to serve as an observation platform. A 50 x 8 foot vinyl canvas flash panel was placed on the river bottom directly in front of the tower. A weir to direct the fish over the flash panel was built from the mid-stream end of the flash panel to the opposite bank. An array of four 120 volt lights was mounted on a post below the tower to illuminate the flash panel during periods of low light and darkness.

Counting began on 29 June and ended on 12 August. The counting schedule was 18 half-hour counts each day from 12 noon to 0600 hours the following day. A 24 hour count and one day off were scheduled weekly. The daily counts considered in this report run from 0000 hours to 2400 hours. The counts for each half hour shift were doubled to produce the reported hourly counts for each species. Each day the reported hourly counts were added to produce a daily unexpanded total. Every day, the daily and cumulative unexpanded totals for each species were relayed to the Nome office by radio.

The expanded counts for this report were calculated using the following methods. The 18 hour counts for the days off were estimated by adding the counts of each hour of the day before to the counts of each hour of the day following and dividing the result by two, giving expanded hourly counts for the 18 hours of the day off. Next an expansion factor was calculated to compensate for the 6 hours not normally counted. This factor was derived from the weekly 24 hour count by dividing the total count from 0600 hours to 1200 hours during the 24 hour count by the total normal 18 hour count during the 24 hour count. Then each 18 hour count for the remaining days was expanded to 24 hour counts by applying the expansion factor to the three days before and after each 24 hour count by multiplying each days 18 hour total by the 24 hour expansion factor, and adding that number to the 18 hour count for each day. This expansion was done for all species counted.

The expanded counts for the days missed were linearly interpolated as follows. For a day with the normal 18 hour count missed, the count for the missing day was calculated by adding the counts of each hour of the day before the missed period to the counts of each hour of the day following the missed period and dividing the result by two. If two or more days were missed the count for the missing days was calculated by adding the counts of each hour of the day before the missed period to the counts of each hour of the day following the missed period and dividing the result by two. Then each 18 hour count was expanded to a 24 hour count by multiplying each days 18 hour total by the nearest 24 hour expansion factor, and adding that number to the 18 hour count for each day.

## RESULTS

Table 1 shows the expanded daily and cumulative totals for each species. The reported total hourly counts were: 9,584 chum salmon, 77,380 pink salmon, 348 king salmon, and 20 coho salmon (Tables 6-9). The expanded counts were: 13,808 chum salmon, 137,283 pink salmon, 446 king salmon, and 21 coho salmon (Tables 2-5).

Chum and king salmon were observed on 30 June, the second day of counting. Pink salmon were first observed on 1 July. Coho salmon were first observed on 1 August. The daily peak count of 2,574 chum salmon occurred on 11 July; the daily peak count of 20,840 pink salmon occurred on 11 July; the daily peak count of 264 king salmon occurred on 11 July; the daily peak count of 10 coho salmon occurred on 11 August (Table 1).

Most chum salmon returned during the three week period from 6 July through 26 July when 97% passed the tower (Table 2 and Figures 3 and 4). Most pink salmon returned during the three week period from 6 July through 26 July when 98% passed the tower (Table 3 and Figures 5 and 6). Most king salmon returned during the week from 11 July through 17 July when 86% passed the tower (Table 4 and Figures 7 and 8). All coho salmon counted returned during the last twelve days of counting (Table 5 and Figures 9 and 10).

All species counted exhibited a diurnal pattern of migration past the counting tower. During the nine hour period from 1800 through 0200 hours, 82% of the chum salmon passed the tower (Table 2 and Figure 11). During the ten hour period from 1800 through 0300 hours, 85% of the pink salmon passed the tower (Table 3 and Figure 12). During the ten hour period from 1800 through 0300 hours, 87% of the king salmon passed the tower (Table 4 and Figure 13). The return of coho salmon was just beginning when the counting season ended so we are unable to draw conclusions about the diurnal pattern of coho salmon migration (Table 5 and Figure 14).

An aerial survey of the Eldorado River counted 3,000 chum salmon on 20 July, 1998. The total season expanded tower count of chum salmon was 13,808. The aerial survey counted 22% of the total season expanded tower count of chum salmon. The aerial survey counted 2,280 chum salmon above the counting tower on 20 July, when the cumulative tower count of chum salmon was 11,447. The aerial survey counted 20% of the cumulative tower count on 20 July (Table 1).

An aerial survey of the Eldorado River counted 123,950 pink salmon on 20 July, 1998. The total season expanded tower count of pink salmon was 137,283. The aerial survey counted 90% of the total season expanded tower count of pink salmon. The aerial survey counted 116,400 pink salmon above the counting tower on 20 July, when the cumulative tower count of pink salmon was 117,214. The aerial survey counted 99% of the cumulative tower count on 20 July (Table 1).

## DISCUSSION

This was the fourth consecutive year of operation for the Eldorado River counting tower. The 1995 and 1998 escapements of chum salmon began about one week later than in 1996 and 1997. The size of the 1995 escapement was three times larger than in 1996, 1997 and 1998 (Figure 15). The odd year escapement of pink salmon began about one week earlier in 1997 and was only about 20% of the odd year escapement in 1995 (Figure 16). The even year escapement of pink salmon began about five days later in 1998 and was about 3 ½ times larger than the even year escapement in 1996 (Figure 17). The 1998 escapement of king salmon was about 4 ½ times larger than in 1997 (Figure 17). The 1997 escapement of coho salmon began eleven days earlier than in 1995, 1996 and 1998. The size of the 1998 coho salmon escapement was the smallest on record for the date that counting ended (Figure 18).

The value of a counting tower on this watershed is evident. The chum salmon escapement documented through the 1995, 1996, 1997 and 1998 seasons shows the relative importance of the Eldorado and Flambeau watersheds to the various salmon user groups in the Nome Subdistrict. The Eldorado tower provided fishery managers a valuable tool for assessing the salmon returns of the Safety Sound watersheds.

It is recommended that if funding is available the project should start yet another week earlier to count chum, pink and king salmon and if additional funding is available should remain in operation three weeks later to count coho salmon.

#### ACKNOWLEDGEMENTS

The ADF&G thanks Kawerak Corporation for operating this project and in particular the tower crew who operated the tower. A draft of this report was reviewed by Larry Buklis.

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Table 1. Expanded daily and cumulative migration of all salmon species past the Eldorado River counting tower, Norton Sound, 1998.

Date	Chum	Cumulative Chum	Pink	Cumulative Pink	King	Cumulative King	Coho	Cumulative Coho
29-Jun	0	0	0	0	0	0	0	0
30-Jun	35	35	0	0	2	2	0	0
1-Jul	107	142	47	47	0	2	0	0
2-Jul	43	185	62	109	0	2	0	0
3-Jul	43	228	145	254	0	2	0	0
4-Jul	32	260	74	328	2	4	0	0
5-Jul	40	300	90	418	2	6	0	0
6-Jul	145	445	660	1,078	1	7	0	0
7-Jul	159	604	669	1,747	0	7	0	0
8-Jul	445	1,049	1,528	3,275	0	7	0	0
9-Jul	1,672	2,721	5,860	9,135	9	16	0	0
10-Jul	1,143	3,864	8,247	17,382	16	32	0	0
11-Jul	2,574	6,438	20,840	38,222	264	296	0	0
12-Jul	946	7,384	18,739	56,961	25	321	0	0
13-Jul	639	8,023	11,053	68,014	19	340	0	0
14-Jul	639	8,662	11,053	79,067	19	359	0	0
15-Jul	639	9,301	11,053	90,120	19	378	0	0
16-Jul	639	9,940	11,053	101,173	19	397	0	0
17-Jul	441	10,381	6,252	107,425	17	414	0	0
18-Jul	732	11,113	7,832	115,257	12	426	0	0
19-Jul	22	11,135	322	115,579	0	426	0	0
20-Jul	312	11,447	1,635	117,214	0	426	0	0
21-Jul	1,004	12,451	6,458	123,672	4	430	0	0
22-Jul	617	13,068	4,375	128,047	2	432	0	0
23-Jul	291	13,359	2,302	130,349	0	432	0	0
24-Jul	266	13,625	3,135	133,484	2	434	0	0
25-Jul	16	13,641	108	133,592	0	434	0	0
26-Jul	50	13,691	742	134,334	2	436	0	0
27-Jul	20	13,711	354	134,688	0	436	0	0
28-Jul	46	13,757	558	135,246	4	440	0	0
29-Jul	24	13,781	332	135,578	2	442	0	0
30-Jul	17	13,798	280	135,858	0	442	0	0
31-Jul	0	13,798	72	135,930	0	442	0	0
1-Aug	0	13,798	22	135,952	0	442	6	6
2-Aug	4	13,802	187	136,139	0	442	-2	4
3-Aug	6	13,808	209	136,348	0	442	0	4
4-Aug	0	13,808	130	136,478	0	442	0	4
5-Aug	0	13,808	127	136,605	0	442	1	5
6-Aug	0	13,808	118	136,723	0	442	2	7
7-Aug	0	13,808	123	136,846	0	442	0	7
8-Aug	0	13,808	70	136,916	2	444	0	7
9-Aug	0	13,808	96	137,012	2	446	4	11
10-Aug	0	13,808	59	137,071	0	446	0	11
11-Aug	0	13,808	212	137,283	0	446	10	21
12-Aug	0	13,808	0	137,283	0	446	0	21

Table 2. Expanded daily hourly chum salmon migration past the Eldorado River counting tower, Norton Sound, 1998.

Outlined areas indicate hours not counted. Numbers in outlined areas indicate estimated passage.																			Total	% of Total		
Date	0000	0100	0200	0300	0400	0500	0600 - 1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total	
29-Jun																				0	0.0%	
30-Jun	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	26	0	35	0.3%
1-Jul	0	0	0	10	34	5	27	30	0	0	4	0	0	0	0	0	0	0	2	0	107	0.8%
2-Jul	2	0	4	4	0	0	11	0	16	0	0	0	0	0	0	0	0	0	6	0	43	0.3%
3-Jul	10	2	4	0	8	6	11	0	2	0	0	0	0	0	0	0	0	0	0	0	43	0.3%
4-Jul	0	2	0	2	0	0	8	0	0	0	0	0	0	0	4	0	16	0	0	0	32	0.2%
5-Jul	2	0	2	0	0	0	10	0	0	0	0	2	2	0	0	4	10	1	7	0	40	0.3%
6-Jul	2	28	15	11	9	11	36	3	0	0	2	3	3	0	0	4	10	1	7	0	145	1.1%
7-Jul	2	28	15	11	9	11	40	3	0	0	4	4	0	0	8	4	2	2	14	0	159	1.2%
8-Jul	2	56	28	22	18	22	20	8	0	0	0	5	4	4	38	54	42	54	70	0	445	3.2%
9-Jul	630	120	140	106	84	58	74	0	0	6	0	6	50	186	34	12	2	18	144	0	1,672	12.1%
10-Jul	294	232	80	22	26	18	51	2	0	3	0	3	14	6	14	6	16	74	282	0	1,143	8.3%
11-Jul	320	174	80	168	120	50	114	0	0	0	0	0	4	24	26	248	832	254	168	0	2,574	18.6%
12-Jul	166	80	82	8	12	16	42	2	0	0	0	2	10	72	78	104	98	90	84	0	946	6.9%
13-Jul	115	47	58	-1	10	11	28	1	0	1	1	4	14	73	42	80	51	49	55	0	639	4.6%
14-Jul	115	47	58	-1	10	11	28	1	0	1	1	4	14	73	42	80	51	49	55	0	639	4.6%
15-Jul	115	47	58	-1	10	11	28	1	0	1	1	4	14	73	42	80	51	49	55	0	639	4.6%
16-Jul	115	47	58	-1	10	11	28	1	0	1	1	4	14	73	42	80	51	49	55	0	639	4.6%
17-Jul	115	47	58	-1	10	11	6	1	0	1	1	4	14	74	6	56	4	8	26	0	441	3.2%
18-Jul	64	14	34	-10	8	8	10	0	0	2	2	6	18	88	224	184	46	32	4	0	732	5.3%
19-Jul	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	4	2	12	0	22	0.2%
20-Jul	36	14	8	0	4	10	4	0	0	0	2	14	8	116	50	4	6	2	32	0	312	2.3%
21-Jul	100	64	30	8	12	18	14	0	0	6	10	12	26	22	140	90	360	46	46	0	1,004	7.3%
22-Jul	58	48	27	11	11	13	9	3	22	10	11	13	14	12	70	46	182	29	28	0	617	4.5%
23-Jul	58	48	27	11	11	13	4	3	44	14	12	14	2	2	0	2	4	12	10	0	291	2.1%
24-Jul	16	32	24	14	10	8	4	6	8	2	18	34	46	10	2	24	12	0	0	0	266	1.9%
25-Jul	4	0	0	0	2	0	0	0	0	0	0	2	0	0	2	2	0	2	2	0	16	0.1%
26-Jul	2	2	0	4	0	0	0	4	22	4	0	2	0	2	0	4	2	0	2	0	50	0.4%
27-Jul	4	2	0	2	0	2	0	0	0	2	0	0	0	0	2	2	0	0	4	0	20	0.1%
28-Jul	6	8	16	0	0	0	0	0	0	0	0	0	0	0	8	8	0	0	2	0	46	0.3%
29-Jul	3	4	8	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	1	0	24	0.2%
30-Jul	3	4	8	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	17	0.1%
31-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
1-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
2-Aug	0	0	0	0	0	0	0	0	0	0	2	-2	0	0	0	0	0	0	4	0	4	0.0%
3-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	0	0	6	0.0%
4-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
5-Aug	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
6-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
7-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
8-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
9-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
10-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
11-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
12-Aug	End of counting season																					
Total	2,358	1,197	922	401	428	319	616	67	112	1	70	140	275	914	872	1,186	1,858	859	1,159	13,808	100.0%	
	17.1%	8.7%	6.7%	2.9%	3.1%	2.3%	4.5%	0.5%	0.8%		0.5%	1.0%	2.0%	6.6%	6.3%	8.6%	13.5%	6.2%	8.4%			

Table 3. Expanded daily hourly pink salmon migration past the Eldorado River c lower, Norton Sound, 1998.

Outlined areas indicate hours not counted. Numbers in outlined areas indicate estimated passage.

Date	0000	0100	0200	0300	0400	0500	0600 - 1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total	
29-Jun										0	0	0	0	0	0	0	0	0	0	0	0	0.0%
30-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
1-Jul	0	2	0	0	8	0	0	15	16	0	0	8	0	0	0	0	0	0	0	0	47	0.0%
2-Jul	0	0	0	0	0	0	0	20	0	26	0	0	0	0	0	0	0	0	18	0	62	0.0%
3-Jul	28	8	26	0	16	10	0	47	2	0	2	0	0	0	8	0	0	0	0	0	145	0.1%
4-Jul	0	2	10	6	2	0	0	24	0	4	0	0	0	0	2	4	16	0	4	0	74	0.1%
5-Jul	12	10	4	12	0	0	0	29	0	0	0	0	0	0	0	8	9	1	5	0	90	0.1%
6-Jul	12	176	115	52	34	26	0	214	0	0	1	2	2	2	0	1	8	9	1	5	660	0.5%
7-Jul	12	176	115	52	34	26	0	217	0	0	1	4	4	4	0	2	12	2	2	6	669	0.5%
8-Jul	12	342	226	92	68	52	0	136	0	0	2	0	0	0	114	68	54	116	238	0	1,528	1.1%
9-Jul	1,890	550	400	284	236	150	0	528	0	0	4	0	8	0	664	94	80	32	356	584	5,860	4.3%
10-Jul	2,082	1,870	1,310	904	156	84	0	743	14	0	2	0	4	24	0	4	2	28	148	872	8,247	6.0%
11-Jul	2,376	1,708	1,180	912	460	590	0	1,678	0	0	0	0	0	2	40	100	2,350	4,372	2,806	2,066	20,840	15.2%
12-Jul	2,960	1,710	1,660	1,080	122	158	0	1,689	0	2	0	0	2	14	600	1,690	3,984	1,502	1,124	442	18,739	13.6%
13-Jul	1,780	968	904	522	47	110	0	996	3	7	4	6	54	191	554	875	2,105	822	694	413	11,053	8.1%
14-Jul	1,780	966	904	522	47	110	0	996	3	7	4	6	54	191	554	875	2,105	822	694	413	11,053	8.1%
15-Jul	1,780	966	904	522	47	110	0	996	3	7	4	6	54	191	554	875	2,105	822	694	413	11,053	8.1%
16-Jul	1,780	966	904	522	47	110	0	996	3	7	4	6	54	191	554	875	2,105	822	694	413	11,053	8.1%
17-Jul	1,780	966	904	522	47	110	0	74	3	7	4	6	54	191	508	60	226	142	264	384	6,252	4.6%
18-Jul	600	222	148	-36	-28	62	0	92	6	12	8	12	106	368	1,150	2,620	1,880	458	142	10	7,832	5.7%
19-Jul	0	0	4	8	10	22	0	4	0	0	4	36	22	26	4	2	2	34	10	134	322	0.2%
20-Jul	262	90	120	14	58	54	0	19	0	0	4	16	42	48	500	220	2	66	46	76	1,635	1.2%
21-Jul	340	230	180	46	70	44	0	76	0	0	32	14	26	46	300	700	636	2,936	426	356	6,458	4.7%
22-Jul	327	206	173	53	55	34	0	51	53	168	66	48	24	50	150	364	318	1,498	258	479	4,375	3.2%
23-Jul	327	206	173	53	55	34	0	27	53	336	100	82	22	54	0	28	0	60	90	602	2,302	1.7%
24-Jul	314	182	166	60	40	24	0	37	106	60	76	264	374	538	384	290	106	98	20	-6	3,135	2.3%
25-Jul	30	0	0	0	6	10	0	18	0	26	0	0	8	8	2	0	0	0	0	0	108	0.1%
26-Jul	50	40	0	0	0	0	0	122	32	350	100	0	0	0	12	4	30	0	0	2	742	0.5%
27-Jul	40	44	4	20	10	14	0	58	0	0	2	16	8	4	2	22	26	12	22	50	354	0.3%
28-Jul	50	62	72	32	36	58	0	92	2	2	2	4	6	10	0	66	60	0	0	2	558	0.4%
29-Jul	26	33	38	19	25	30	0	55	1	2	1	6	4	5	1	36	36	4	6	2	332	0.2%
30-Jul	26	33	38	19	25	30	0	46	1	2	1	6	4	5	2	8	12	8	12	2	280	0.2%
31-Jul	2	4	4	6	14	2	0	12	0	2	0	8	2	0	0	0	0	2	8	6	72	0.1%
1-Aug	0	2	0	14	0	0	0	2	0	0	0	0	0	0	0	0	0	4	0	0	22	0.0%
2-Aug	0	0	0	0	0	0	0	17	0	0	14	30	0	8	8	18	14	20	28	30	187	0.1%
3-Aug	0	18	26	10	2	8	0	19	10	6	4	8	12	10	10	8	18	24	12	4	209	0.2%
4-Aug	10	4	8	10	6	0	0	12	2	0	2	0	2	4	8	8	20	32	2	2	130	0.1%
5-Aug	13	9	6	8	5	0	0	12	1	2	3	0	2	5	11	7	17	19	5	2	127	0.1%
6-Aug	13	9	6	8	5	0	0	11	1	2	3	0	2	6	10	6	14	6	0	2	118	0.1%
7-Aug	16	14	4	6	4	0	0	11	0	4	4	6	10	8	12	14	4	6	-4	4	123	0.1%
8-Aug	8	10	8	0	2	2	0	6	0	0	2	4	2	2	2	8	10	0	2	4	70	0.1%
9-Aug	10	4	0	2	2	0	0	8	0	0	6	4	12	10	24	6	0	4	0	4	96	0.1%
10-Aug	6	2	0	2	0	4	0	5	0	0	0	2	4	6	2	4	6	4	4	8	59	0.0%
11-Aug	22	10	24	14	8	4	0	18	12	6	20	15	10	12	16	4	0	4	6	6	212	0.2%
12-Aug	End of counting season																					
Total	20,776	12,818	10,766	6,372	1,781	2,062	10,430	327	1,047	486	624	1,000	2,232	6,648	10,014	18,375	14,749	6,717	8,030	137,263	100.0%	
	15.1%	9.3%	7.8%	4.6%	1.3%	1.5%	7.6%	0.2%	0.8%	0.4%	0.5%	0.7%	1.6%	4.8%	7.3%	13.4%	10.7%	6.3%	5.9%			

Table 4. Expanded daily hourly king salmon migration past the Eldorado River counting tower, Norton Sound, 1998.

Outlined areas indicate hours not counted. Numbers in outlined areas indicate estimated passage.

Date	0000	0100	0200	0300	0400	0500	0600 - 1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total	
29-Jun									0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
30-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0.4%
1-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
2-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
3-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
4-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0.4%
5-Jul	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0.4%
6-Jul	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0.2%
7-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
8-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
9-Jul	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4	0	0	4	0	9	2.0%
10-Jul	0	2	0	2	0	2	2	0	0	0	0	0	0	0	0	0	0	2	6	0	76	3.6%
11-Jul	0	6	20	8	4	4	28	0	0	0	0	0	2	0	18	84	44	46	0	264	59.2%	
12-Jul	4	6	4	2	0	0	3	0	0	0	0	3	0	2	0	0	0	4	0	0	25	5.6%
13-Jul	4	4	2	1	0	0	2	0	0	0	0	0	0	3	0	0	0	2	1	0	19	4.3%
14-Jul	4	4	2	1	0	0	2	0	0	0	0	0	0	3	0	0	0	2	1	0	19	4.3%
15-Jul	4	4	2	1	0	0	2	0	0	0	0	0	0	3	0	0	0	2	1	0	19	4.3%
16-Jul	4	4	2	1	0	0	2	0	0	0	0	0	0	3	0	0	0	2	1	0	19	4.3%
17-Jul	4	4	2	1	0	0	0	0	0	0	0	0	0	4	0	0	0	0	2	0	17	3.8%
18-Jul	4	2	0	0	0	0	0	0	0	0	0	0	0	2	2	2	0	0	0	0	12	2.7%
19-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
20-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
21-Jul	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	4	0.9%
22-Jul	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	2	0.4%
23-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
24-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0.4%
25-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
26-Jul	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.4%
27-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
28-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	0.9%
29-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0.4%
30-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
31-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
1-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
2-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
3-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
4-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
5-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
6-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
7-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
8-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	0.4%
9-Aug	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0.4%
10-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
11-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
12-Aug	End of counting season																					
Total	28	36	34	17	6	0	42	0		3	0	0	3	24	11	24	84	66	62	446		
	6.3%	8.1%	7.6%	3.8%	1.3%	1.3%	9.4%	0.0%		.7%	0.0%	0.0%	0.7%	5.4%	2.5%	5.4%	18.8%	14.8%	13.9%	100.0%		

Table 5. Expanded daily hourly coho salmon migration past the Eldorado River counting tower, Norton Sound, 1998.

Outlined areas indicate hours not counted. Numbers in outlined areas indicate estimated passage.

Date	0000	0100	0200	0300	0400	0500	0600 - 1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total		
29-Jun																					0	0.0%	
30-Jun																						0	0.0%
1-Jul																						0	0.0%
2-Jul																						0	0.0%
3-Jul																						0	0.0%
4-Jul																						0	0.0%
5-Jul																						0	0.0%
6-Jul																						0	0.0%
7-Jul																						0	0.0%
8-Jul																						0	0.0%
9-Jul																						0	0.0%
10-Jul																						0	0.0%
11-Jul																						0	0.0%
12-Jul																						0	0.0%
13-Jul																						0	0.0%
14-Jul																						0	0.0%
15-Jul																						0	0.0%
16-Jul																						0	0.0%
17-Jul																						0	0.0%
18-Jul																						0	0.0%
19-Jul																						0	0.0%
20-Jul																						0	0.0%
21-Jul																						0	0.0%
22-Jul																						0	0.0%
23-Jul																						0	0.0%
24-Jul																						0	0.0%
25-Jul																						0	0.0%
26-Jul																						0	0.0%
27-Jul																						0	0.0%
28-Jul																						0	0.0%
29-Jul																						0	0.0%
30-Jul																						0	0.0%
31-Jul																						0	0.0%
1-Aug						4																6	28.6%
2-Aug													-2									-2	-9.5%
3-Aug																						0	0.0%
4-Aug																						0	0.0%
5-Aug																	1					1	4.8%
6-Aug																	2					2	9.5%
7-Aug																						0	0.0%
8-Aug																						0	0.0%
9-Aug															2	2						4	19.0%
10-Aug																						0	0.0%
11-Aug				6				2							2							10	47.8%
12-Aug	End of counting season																						
Total	0	0	8	0	4	0	0	2	0	0	0	-2	0	4	2	3	0	0	0	2	21	100.0%	
	0.0%	0.0%	28.6%	0.0%	19.0%	0.0%	0.0%	9.5%	0.0%	0.0%	0.0%	-9.5%	0.0%	19.0%	9.5%	14.3%	0.0%	0.0%	9.5%				

Table 6. Reported hourly chum salmon observations at the Eldorado River counting lower, Norton Sound, 1998.

Outlined areas indicate hours not counted

Date	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total	
29-Jun														0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
30-Jun		0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	26	0	26	0.3%
1-Jul		0	0	0	10	34							30	0	0	4	0	0	0	0	0	0	0	2	0	80	0.8%
2-Jul		2	0	4	4	0							0	16	0	0	0	0	0	0	0	0	0	6	0	32	0.3%
3-Jul		10	2	4	0	8							0	2	0	0	0	0	0	0	0	0	0	0	0	32	0.3%
4-Jul		0	2	0	2	0		4	0	4	0	0	0	0	0	0	0	0	0	4	0	16	0	0	0	32	0.3%
5-Jul		2	0	2	0	0							0	0	0	0	2	2	0	0						8	0.1%
6-Jul																										0	0.0%
7-Jul															4	4	4	0	0	0	8	4	2	14		40	0.4%
8-Jul		2	56	28	22	18	22						6	0	0	0	4	4	38	54	42	54	70		420	4.4%	
9-Jul		630	120	140	106	84	58						0	0	6	0	6	50	188	34	12	2	18	144	1,598	16.7%	
10-Jul		294	232	80	22	26	18						2				14	6	14	6	16	74	282		1,086	11.3%	
11-Jul		320	174	80	168	120	50	44	32	16	4	14	4	0	0	0	0	4	24	28	248	632	254	158	2,574	26.9%	
12-Jul		166	80	82	8	12	16						2	0	0	0	2	10	72	78	104	86	90	84	904	9.4%	
13-Jul																										0	0.0%
14-Jul																										0	0.0%
15-Jul																										0	0.0%
16-Jul																										0	0.0%
17-Jul																			74	6	56	4	8	28		174	1.8%
18-Jul		64	14	34	-10	8	6						0	0	2	2	6	18	86	224	184	46	32	4	722	7.5%	
19-Jul		0	0	0	2	0	0						0	0	0	0	0	0	0	0	0	4	2	12	22	22	0.2%
20-Jul		36	14	8	0	4	10						0	0	0	2	14	8	118	50	4	6	2	32	308	3.2%	
21-Jul		100	64	30	8	12	18	10	0	0	0	4	0	0	0	6	10	12	26	22	140	90	260	46	46	1,004	10.5%
22-Jul																										0	0.0%
23-Jul														44	14	12	14	2	2	0	2	4	12	10		116	1.2%
24-Jul		16	30	24	14	10	8						6	6	2	16	34	46	10	2	24	12	0	0	262	2.7%	
25-Jul		4	0	0	0	2	0						0	0	0	0	2	0	0	2	2	0	2	2	16	16	0.2%
26-Jul		2	2	0	4	0	0						4	22	4	0	2	0	2	0	4	2	0	2	50	50	0.5%
27-Jul		4	2	0	2	0	0						0	0	2	0	0	0	0	2	2	0	0	4	20	20	0.2%
28-Jul		6	8	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	6	0	0	2	46	46	0.5%
29-Jul																										0	0.0%
30-Jul																			0	0	2	0	0	0	2	2	0.0%
31-Jul		0	0	0	0	0	0						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
1-Aug		0	0	0	0	0	0						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
2-Aug		0	0	0	0	0	0						0	0	0	2	0	0	0	0	0	0	0	0	4	4	0.0%
3-Aug		0	0	0	0	0	0						0	0	0	0	0	0	0	0	0	0	4	2	0	5	0.1%
4-Aug		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
5-Aug																										0	0.0%
6-Aug																										0	0.0%
7-Aug		0	0	0	0	0	0						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
8-Aug		0	0	0	0	0	0						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
9-Aug		0	0	0	0	0	0						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
10-Aug		0	0	0	0	0	0						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
11-Aug		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
12-Aug	End of counting season																										
Total	1,658	802	532	362	338	216	58	32	20	4	18	4	50	80	36	52	96	188	610	630	808	1,452	632	896	9,584	100.0%	
	17.5%	8.4%	5.6%	3.8%	3.5%	2.3%	0.6%	0.3%	0.2%	0.0%	0.2%	0.0%	0.9%	0.4%	0.5%	1.0%	2.0%	6.4%	6.6%	8.4%	15.2%	6.6%	9.3%				



Table 8. Reported hourly king salmon observations at the Eldorado River counting tower, Norton Sound, 1998.

Outlined areas indicate hours not counted

Date	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total	
29-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
30-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.6%	
1-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
2-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
3-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
4-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.6%	
5-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	0.6%	
6-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
7-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
8-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
9-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
10-Jul	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2.3%	
11-Jul	0	6	20	8	4	4	5	14	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4.0%	
12-Jul	4	6	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	18	64	44	46	264	75.9%	
13-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	4	6.3%	
14-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
15-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
16-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
17-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
18-Jul	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	2	1.7%	
19-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	12	3.4%
20-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
21-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
22-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
23-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
24-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
25-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
26-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
27-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
28-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
29-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
30-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
31-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
1-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
2-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
3-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
4-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
5-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
6-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
7-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
8-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
9-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
10-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
11-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
12-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
End of counting season	8	16	24	12	6	6	6	14	6	0	0	0	0	0	0	2	0	0	2	12	10	24	84	56	58	264	75.9%
Total	2.3%	4.6%	6.9%	3.4%	1.7%	1.7%	1.7%	4.0%	2.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	0.0%	0.0%	0.6%	3.4%	2.9%	6.9%	24.1%	16.1%	16.7%	75.9%	100%	

Table 9. Reported hourly coho salmon observations at the Eldorado River confluence, Norton Sound, 1998.

Outlined areas indicate hours not counted

Date	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total		
29-Jun														0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
30-Jun	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
1-Jul	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
2-Jul	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
3-Jul	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
4-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
5-Jul	0	0	0	0	0	0							0	0	0	0	0	0	0	0						0	0.0%	
6-Jul																											0	0.0%
7-Jul																0	0	0	0	0	0	0	0	0	0	0	0	0.0%
8-Jul	0	0	0	0	0	0							0	0	0	0		0	0	0	0	0	0	0	0	0	0.0%	
9-Jul	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
10-Jul	0	0	0	0	0	0																					0	0.0%
11-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
12-Jul	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
13-Jul																											0	0.0%
14-Jul																											0	0.0%
15-Jul																											0	0.0%
16-Jul																											0	0.0%
17-Jul																					0	0	0	0	0	0	0	0.0%
18-Jul	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
19-Jul	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
20-Jul	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
21-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
22-Jul																											0	0.0%
23-Jul															0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
24-Jul	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
25-Jul	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
26-Jul	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
27-Jul	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
28-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
29-Jul																											0	0.0%
30-Jul																					0	0	0	0	0	0	0	0.0%
31-Jul	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
1-Aug	0	0	0	0	4	0							0	0	0	0	0	0	0	0	0	0	0	0	0	2	30.0%	
2-Aug	0	0	0	0	0	0							0	0	0	0	-2	0	0	0	0	0	0	0	0	0	-10.0%	
3-Aug	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
4-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
5-Aug																											0	0.0%
6-Aug															0	0	0	0	0	0	2	0	0	0	0	0	2	10.0%
7-Aug	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
8-Aug	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
9-Aug	0	0	0	0	0	0							0	0	0	0	0	0	0	2	2	0	0	0	0	0	4	20.0%
10-Aug	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
11-Aug	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	10	50.0%
12-Aug	End of counting season																											
Total	0	0	6	0	4	0	0	0	0	0	0	0	2	0	0	0	-2	0	4	2	2	0	0	0	2	20	100.0%	

Figure 1. Area location map of the Eldorado River counting tower project site, Norton Sound, 1998.

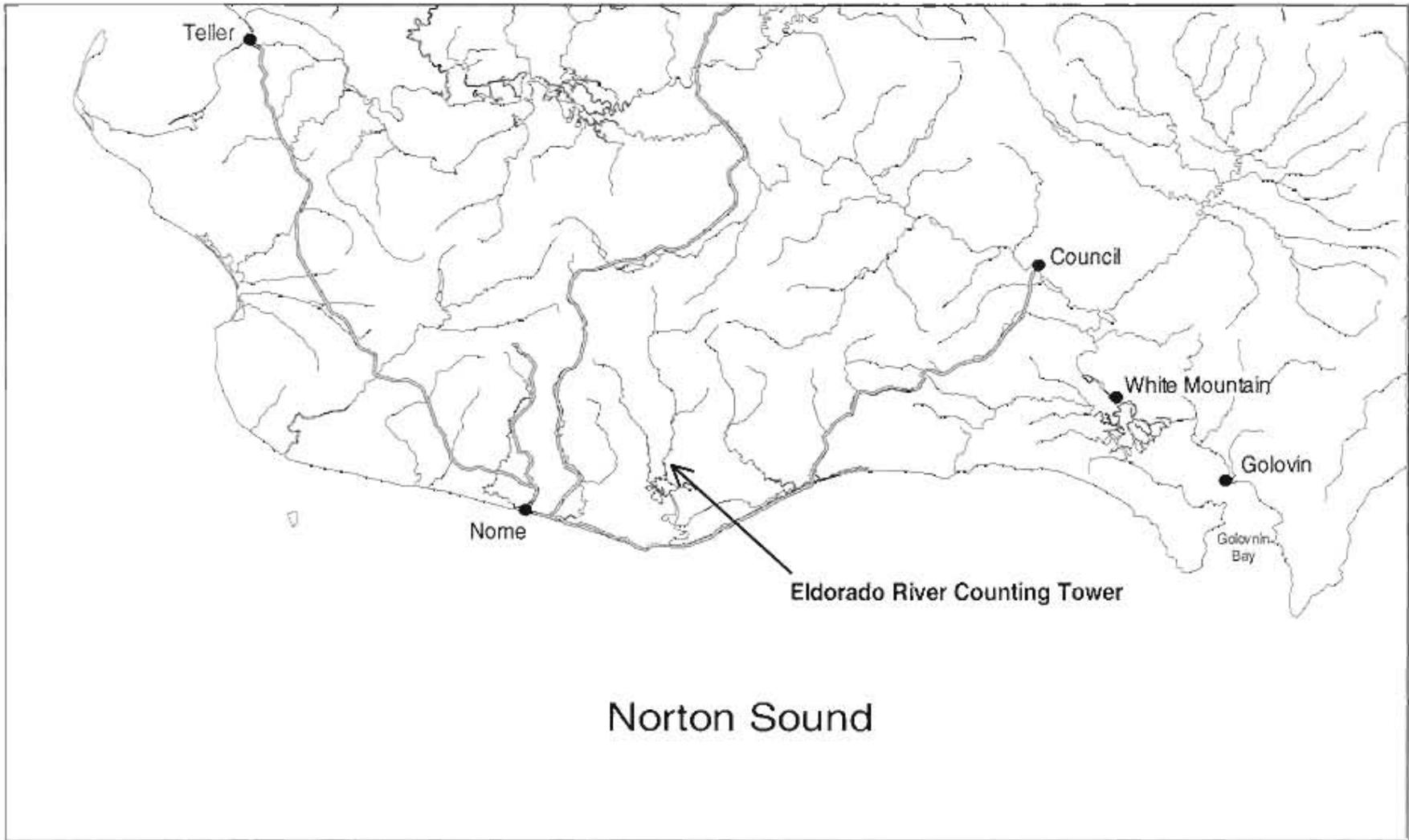


Figure 2. Cumulative migration of all salmon species, except pink salmon, past the Eldorado River counting tower, Norton Sound, 1998.

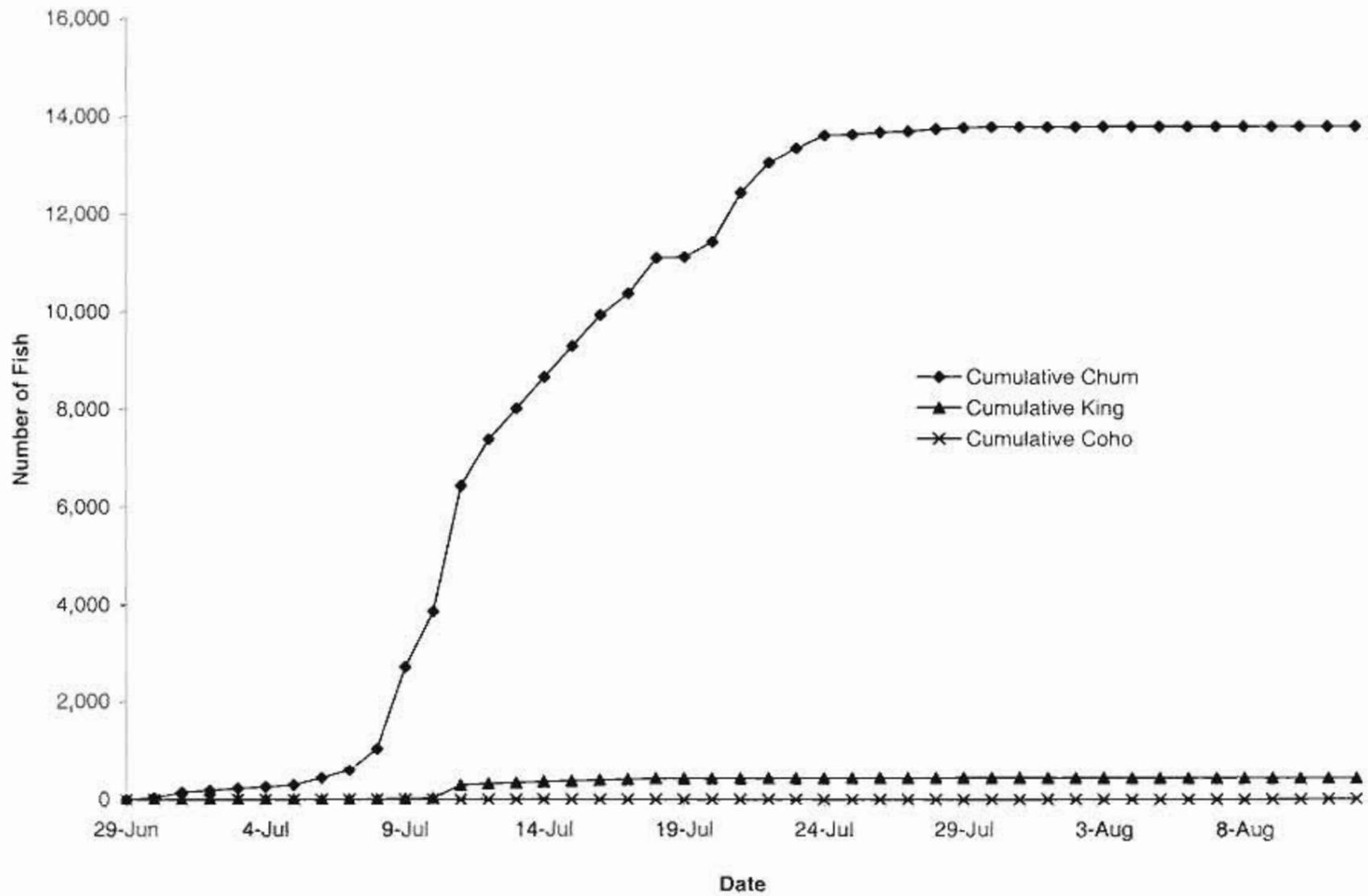


Figure 3. Daily chum salmon migration past the Eldorado River counting tower, Norton Sound, 1998.

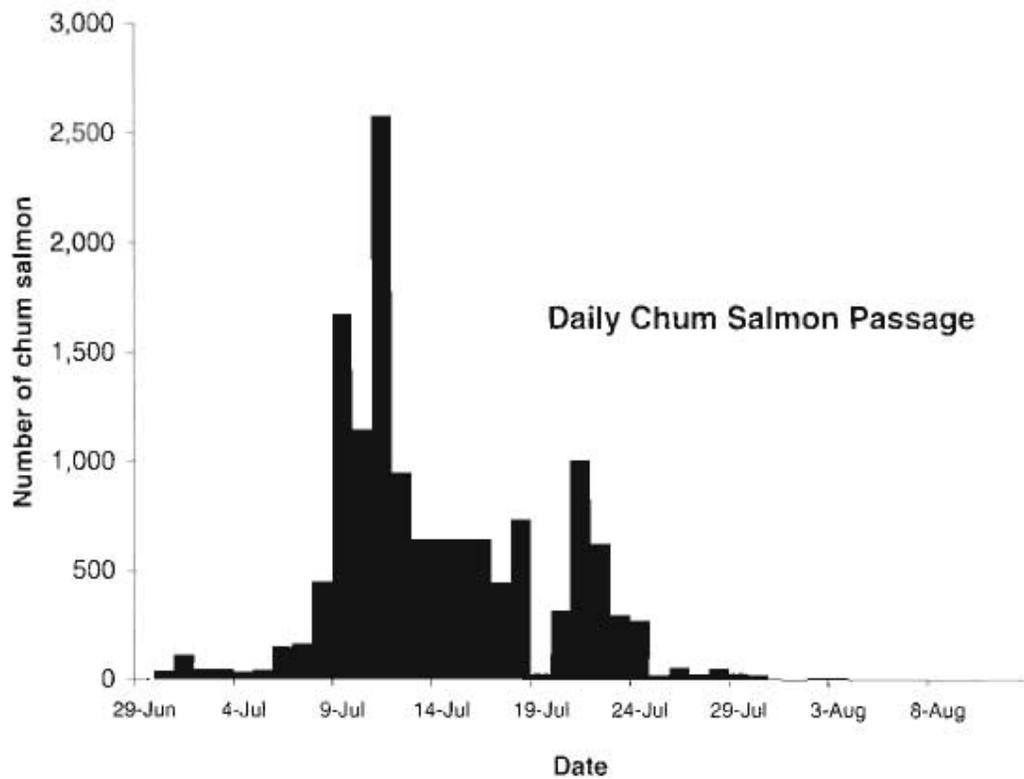


Figure 4. Cumulative chum salmon migration past the Eldorado River counting tower, Norton Sound, 1998.

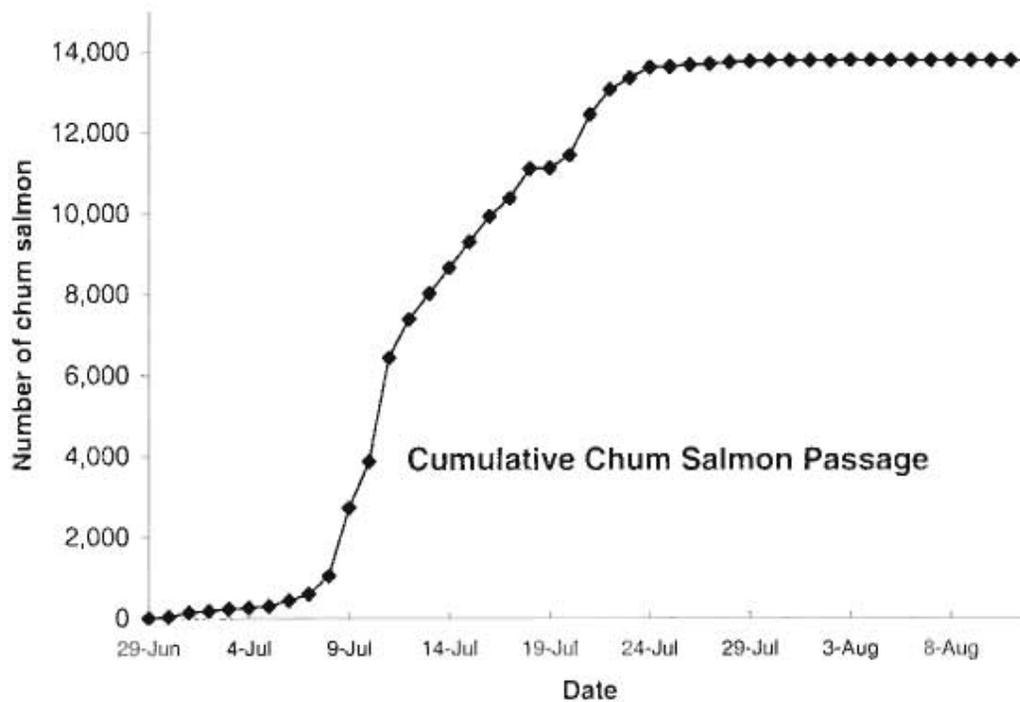


Figure 5. Daily pink salmon migration past the Eldorado River counting tower, Norton Sound, 1998.

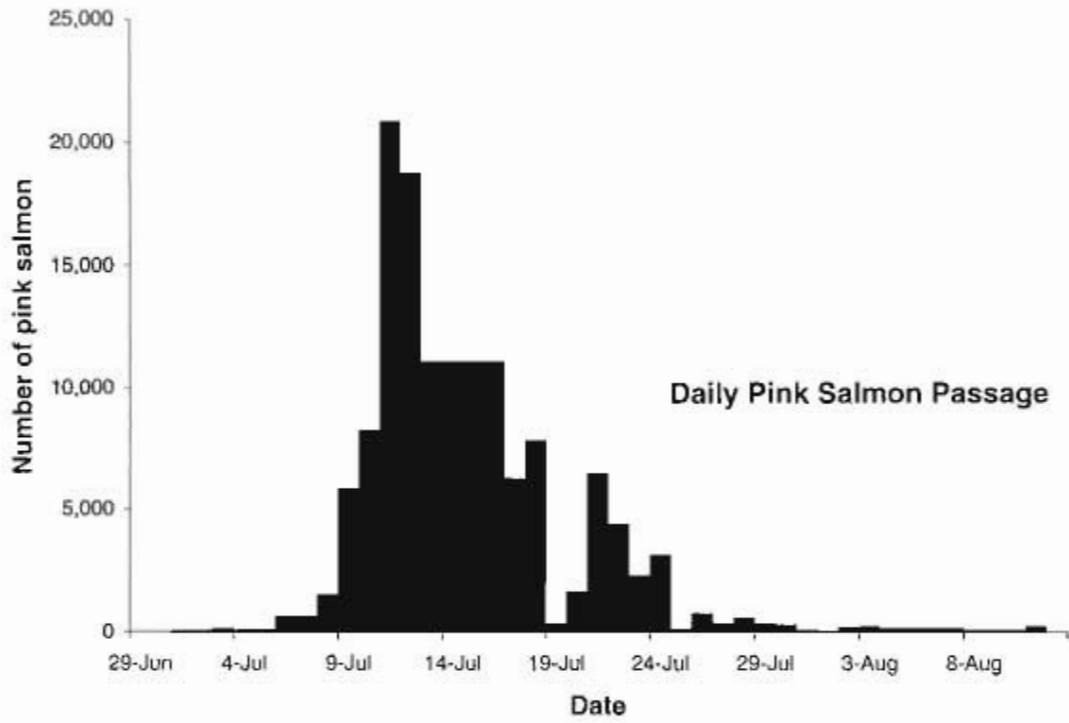


Figure 6. Cumulative pink salmon migration past the Eldorado River counting tower, Norton Sound, 1998.

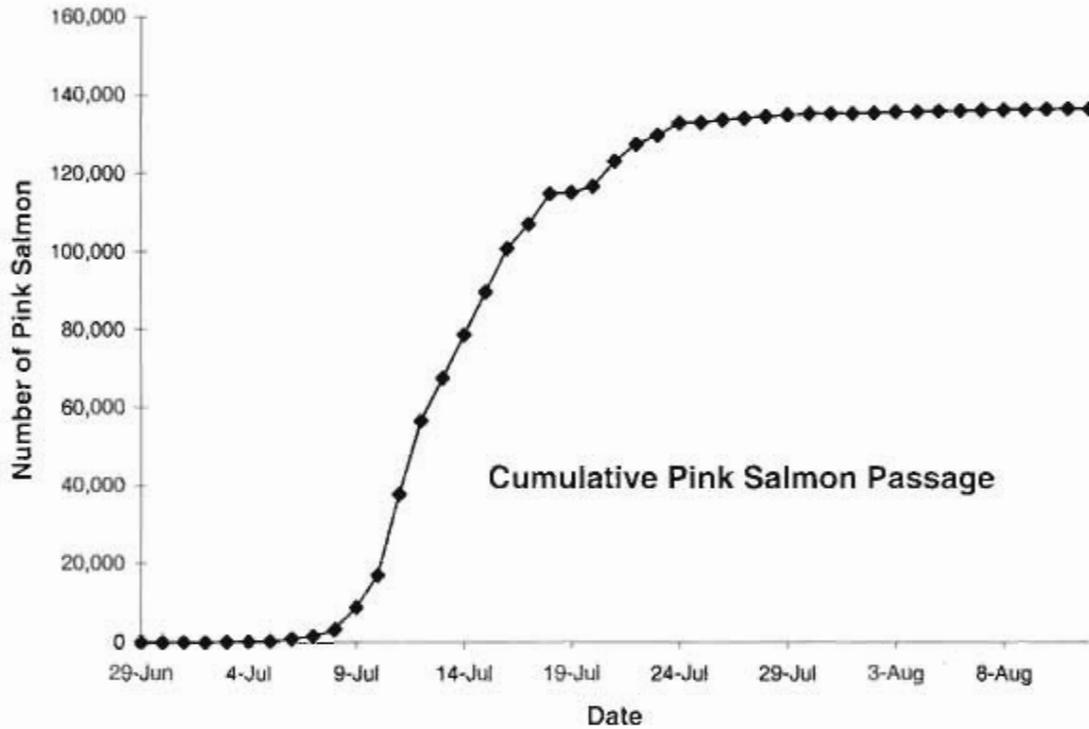


Figure 7. Daily king salmon migration past the Eldorado River counting tower, Norton Sound, 1998.

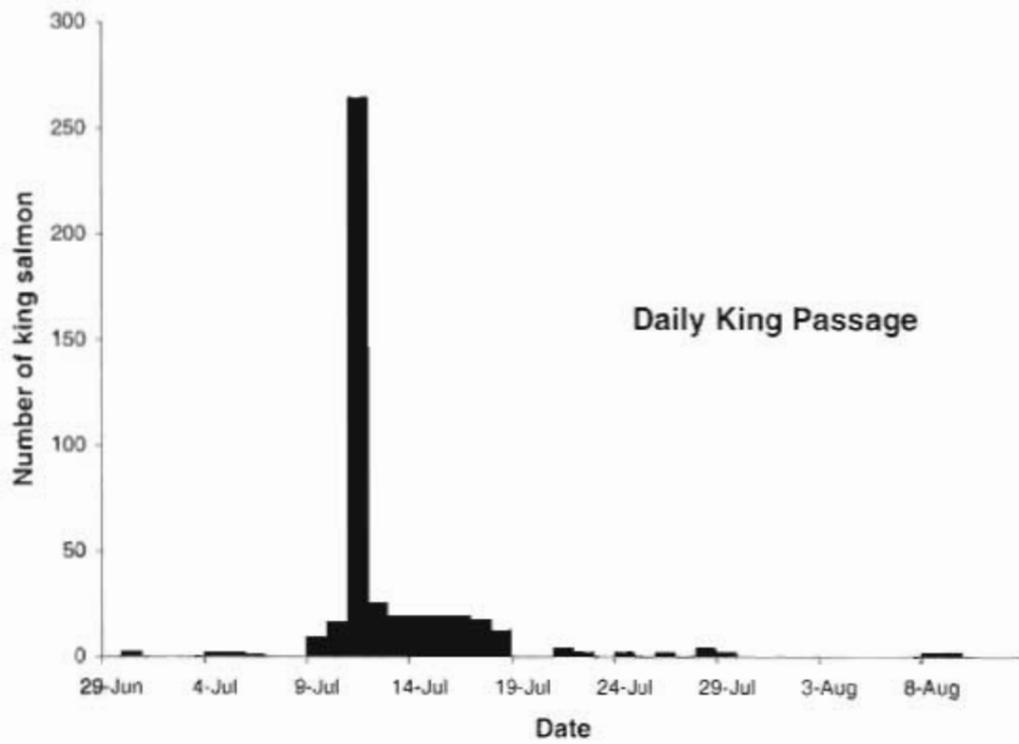


Figure 8. Cumulative king salmon migration past the Eldorado River counting tower, Norton Sound, 1998.

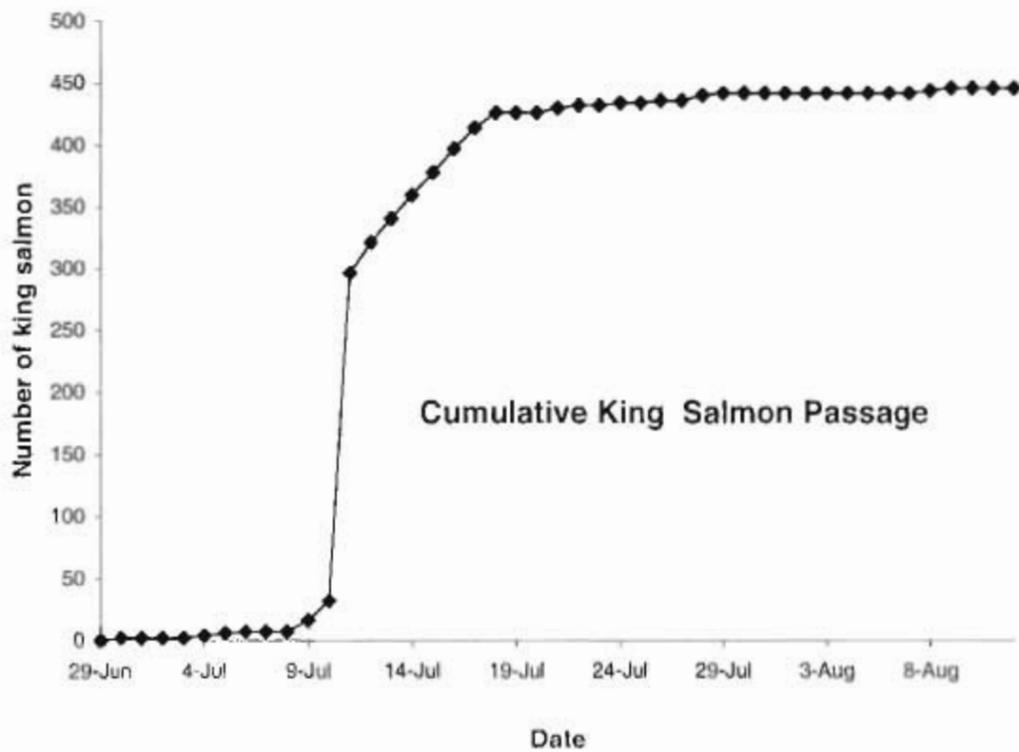


Figure 9. Daily coho salmon migration past the Eldorado River counting tower, Norton Sound, 1998.

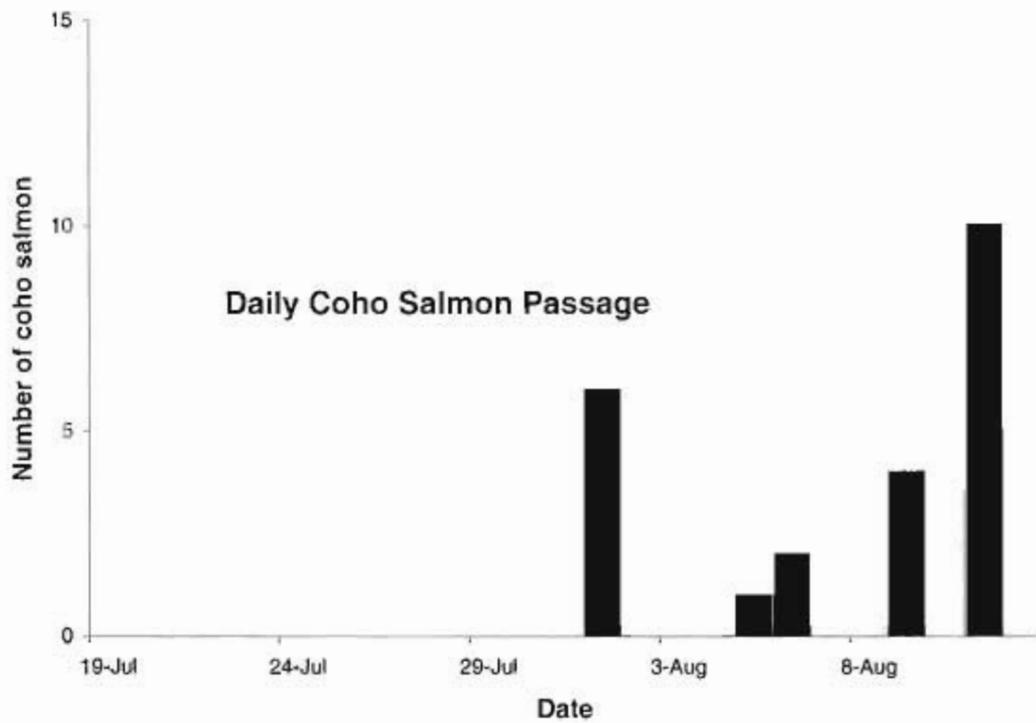


Figure 10. Cumulative coho salmon migration past the Eldorado River counting tower, Norton Sound, 1998.

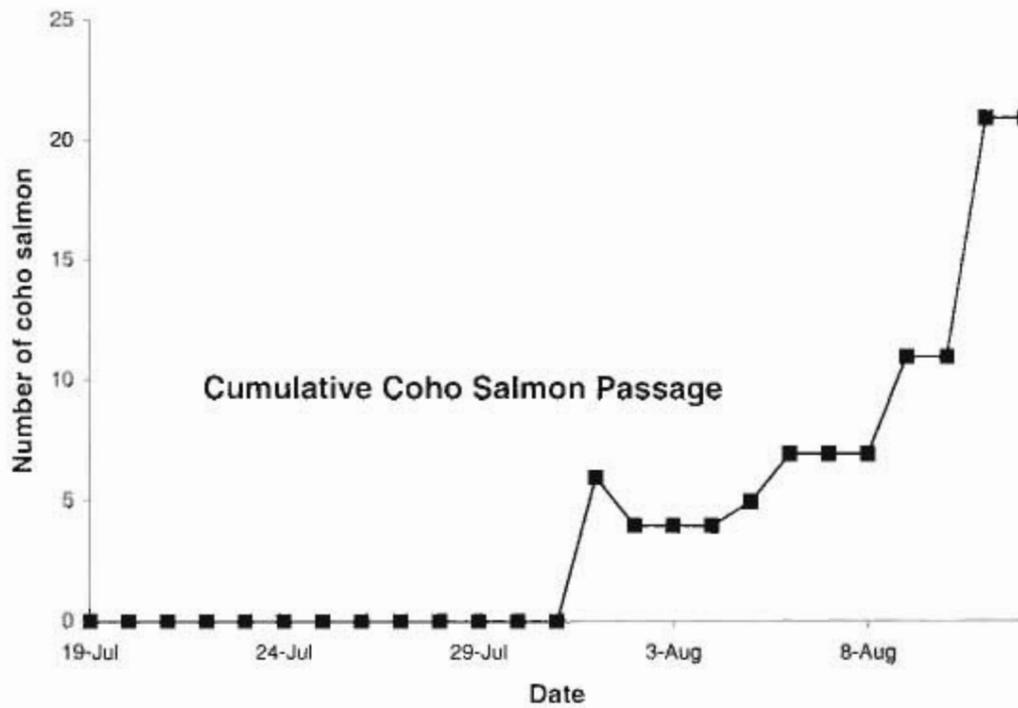


Figure 11. Diurnal pattern of chum salmon migration past the Eldorado River counting tower, Norton Sound, 1998.

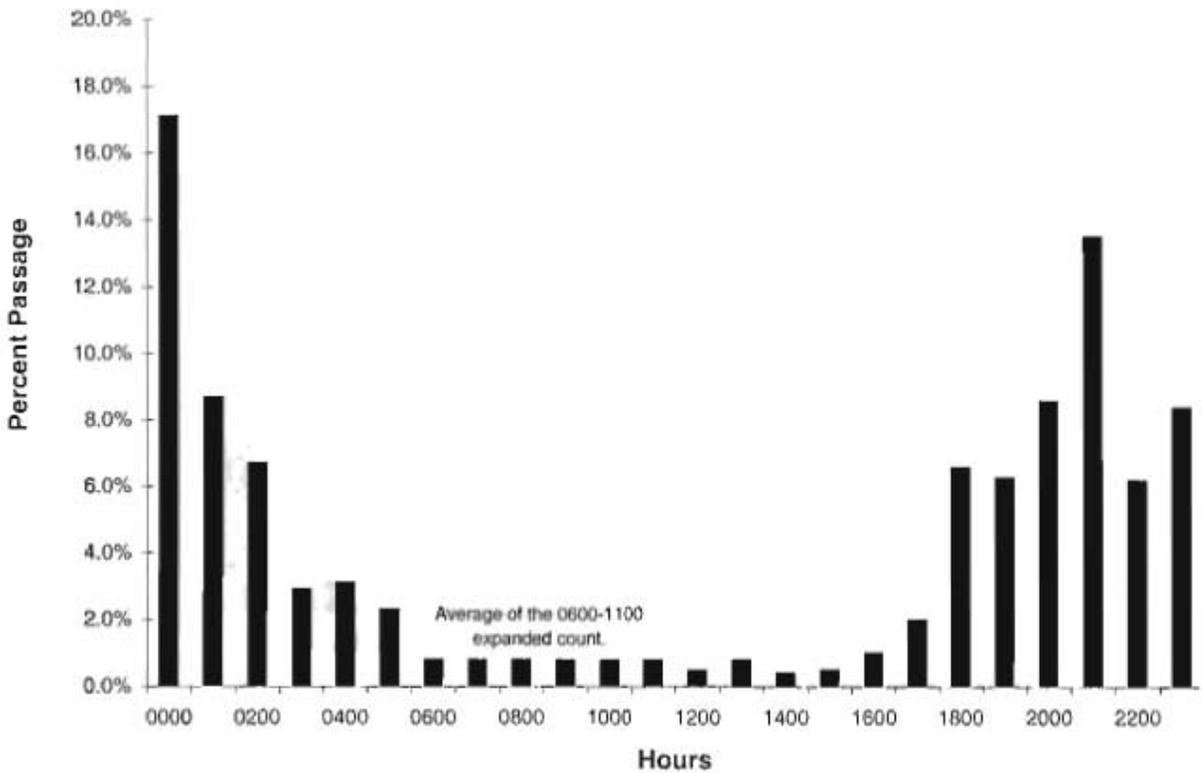


Figure 12. Diurnal pattern of pink salmon migration past the Eldorado River counting tower, Norton Sound, 1998.

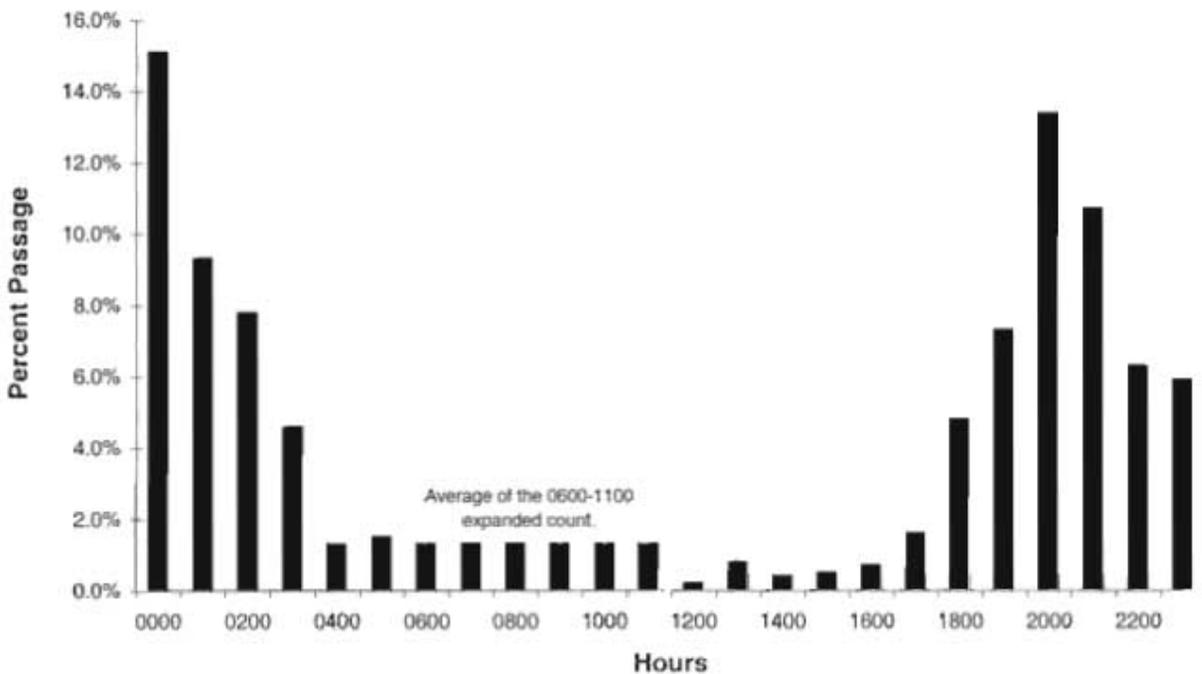


Figure 13. Diurnal pattern of king salmon migration past the Eldorado River counting tower, Norton Sound, 1998.

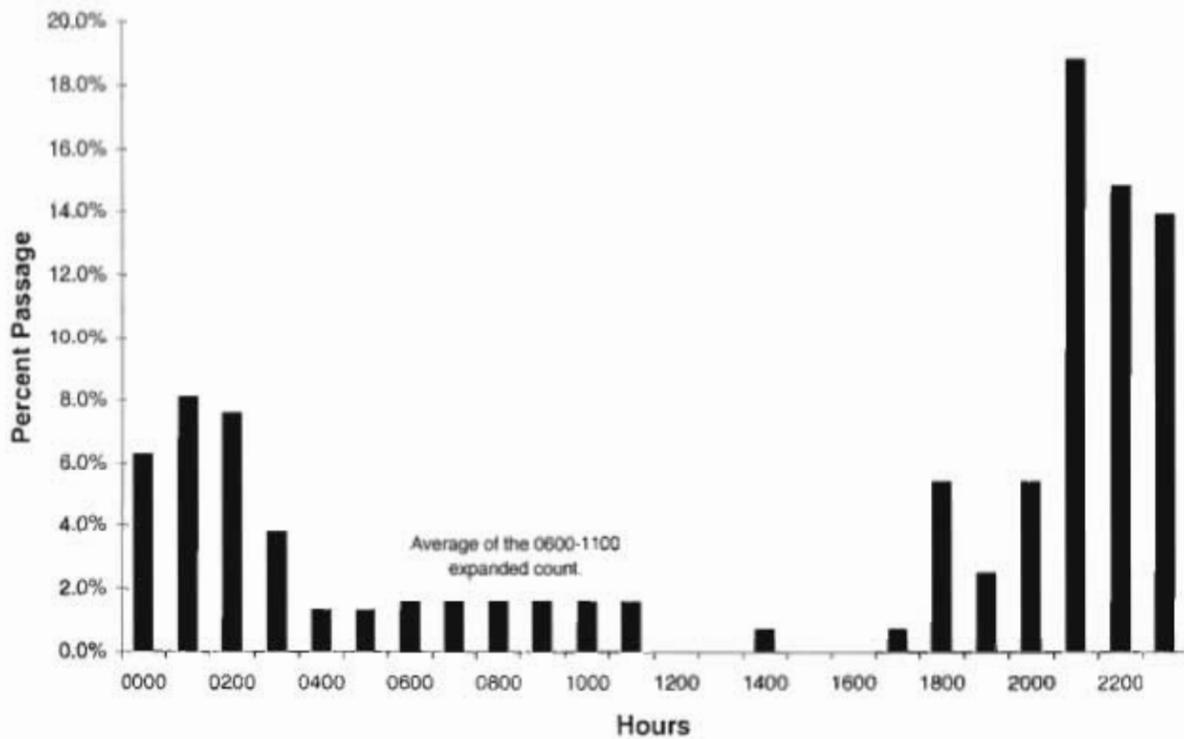


Figure 14. Diurnal pattern of coho salmon migration past the Eldorado River counting tower, Norton Sound, 1998.

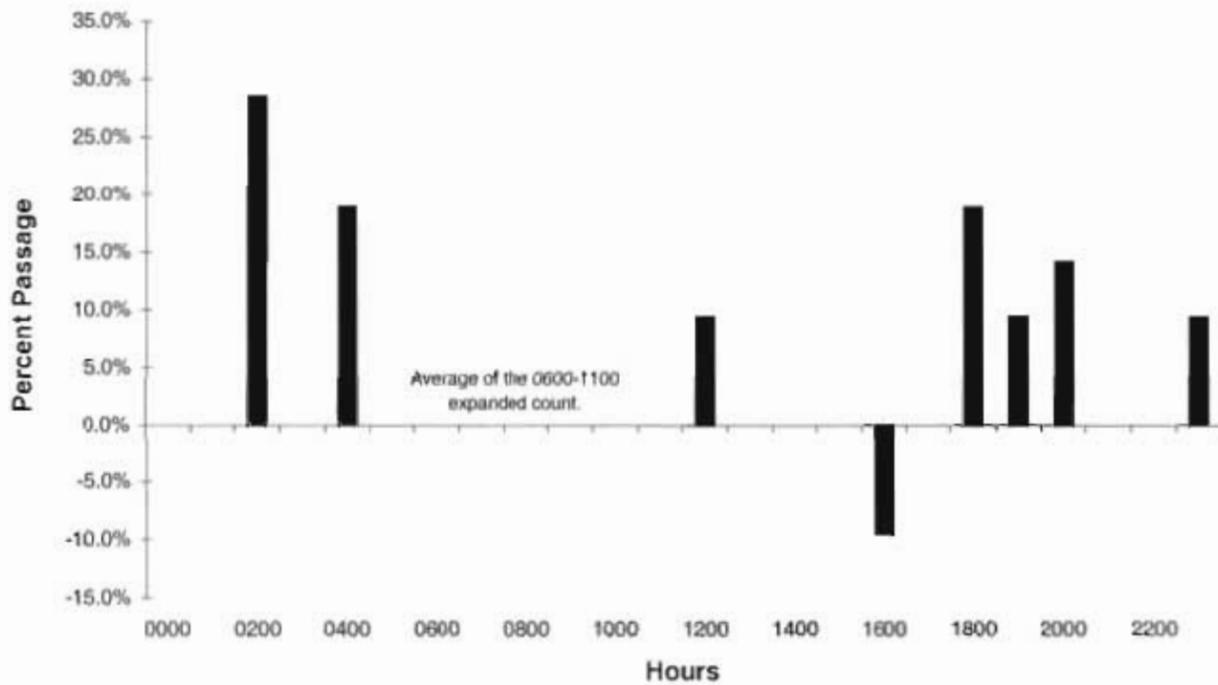


Figure 15. Cumulative migration of chum salmon past the Eldorado River counting tower, Norton Sound, 1995-1998.

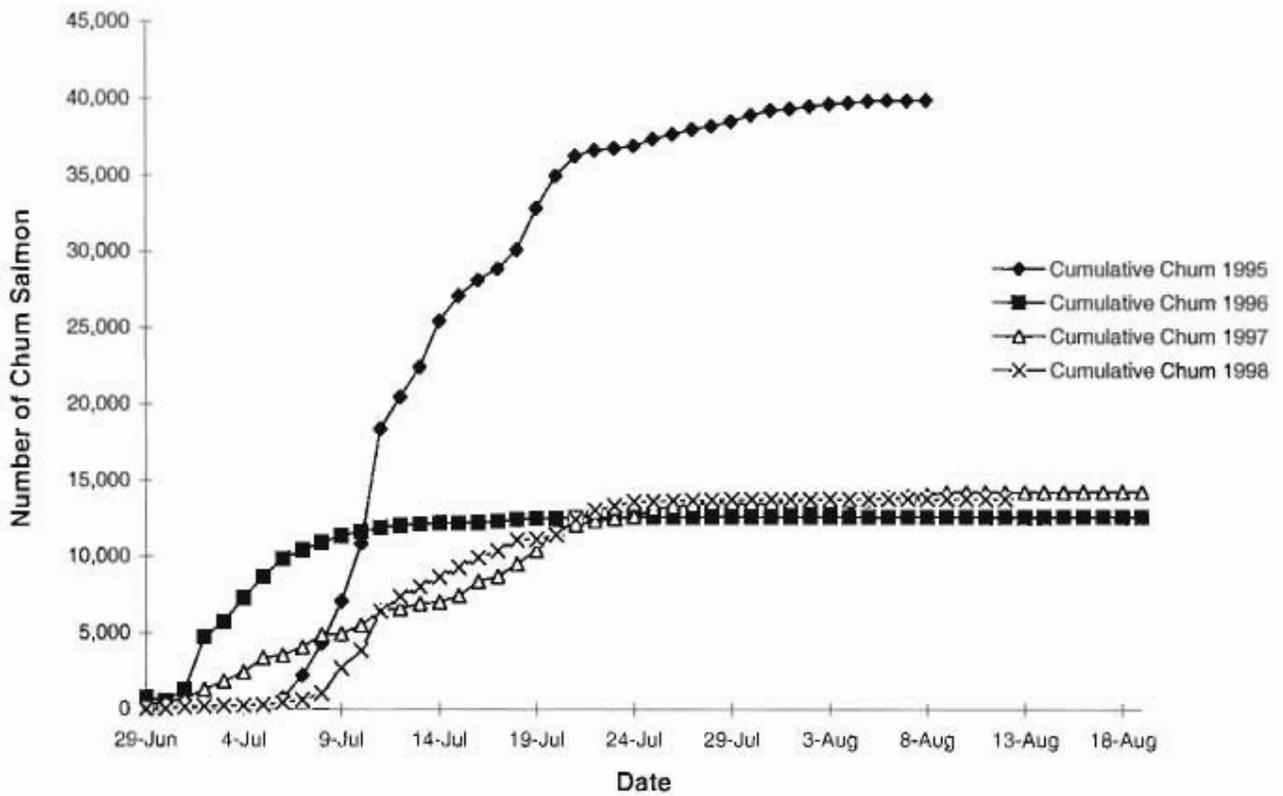


Figure 16. Cumulative odd year migration of pink salmon past the Eldorado River counting tower, Norton Sound, 1995-1997.

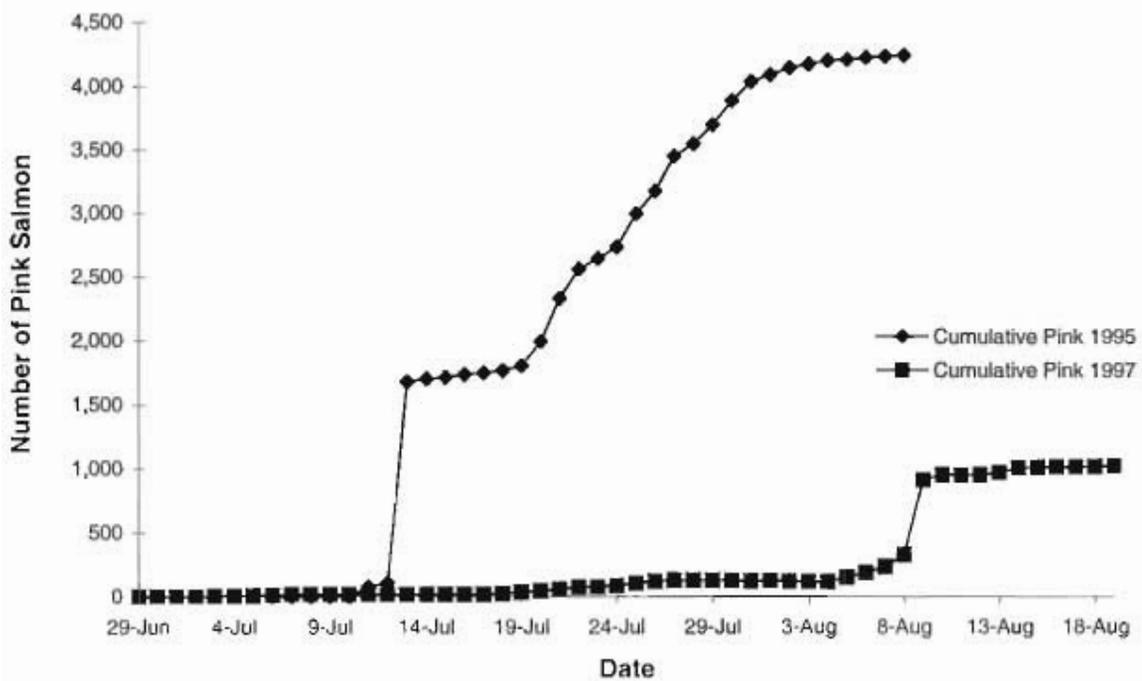


Figure 17. Cumulative even year migration of pink salmon past the Eldorado River counting tower, Norton Sound, 1996-1998.

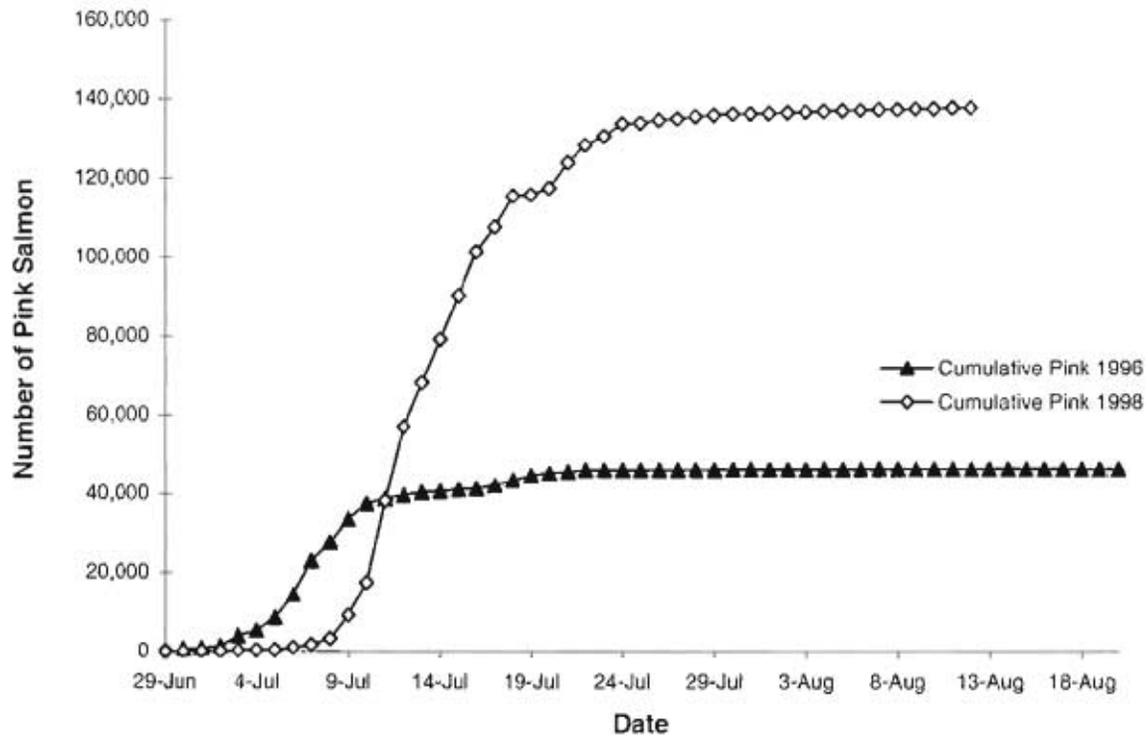


Figure 18. Cumulative migration of king salmon past the Eldorado River counting tower, Norton Sound, 1995-1998.

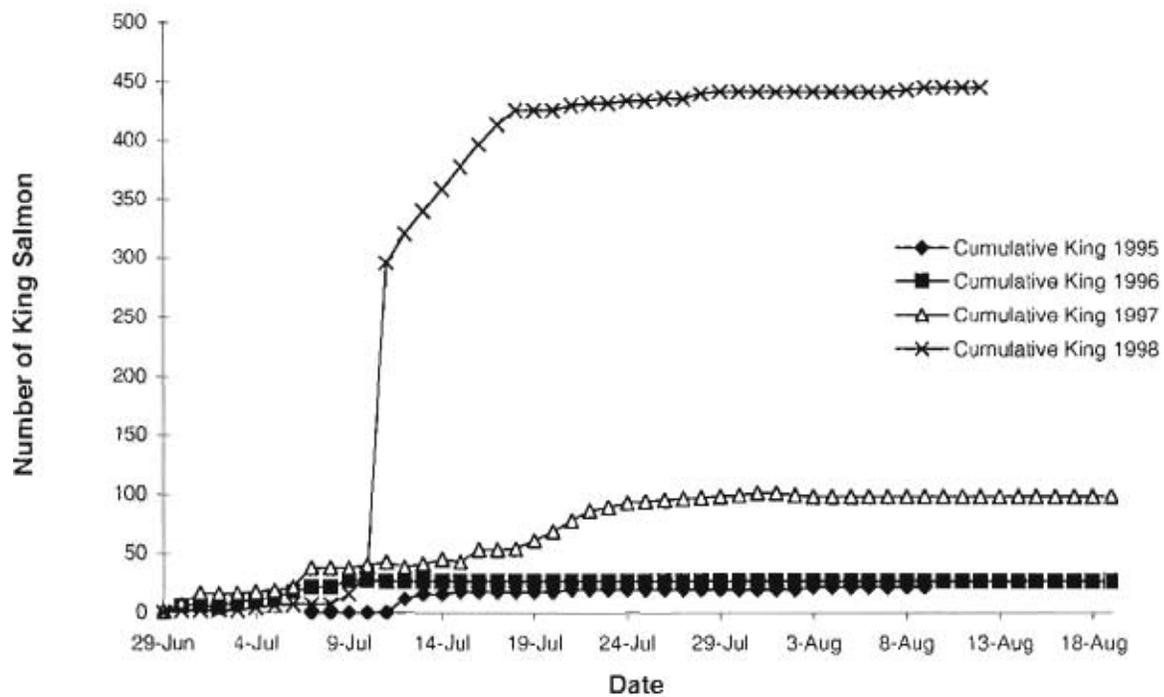


Figure 19. Cumulative migration of coho salmon past the Eldorado River counting tower, Norton Sound, 1995-1998.

