ELDORADO RIVER SALMON COUNTING TOWER PROJECT, 2001

By

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and

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ABSTRACT

The 2001 season was the seventh year a salmon counting tower was 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. Historically, this drainage supports the largest chum salmon escapement of the various streams within the Nome Subdistrict. During 2001, the reported total hourly counts were: 9,246 chum salmon, 392 pink salmon, 32 chinook salmon, and 1,192 coho salmon. The expanded counts were: 11,635 chum salmon, 488 pink salmon, 50 chinook salmon, and 1,509 coho salmon. A total of 587 usable chum salmon scales were collected from the Eldorado River. The age composition was 0.3% age-0.2, 4.4% age-0.3, 94.4% age-0.4, and 0.9% age-0.5. The sample was 58.3% male and 41.7% female.

INTRODUCTION

The Eldorado River counting tower is a cooperative project between Kawerak Inc, the Bering Sea Fishermen's Association, the Norton Sound Economic Development Corporation, and the Alaska Department of Fish and Game (ADF&G). Kawerak Inc. has provided the funds and has operated this project; ADF&G provided equipment for the project and analyzed and expanded the tower count data used in this report.

The counting tower has successfully operated since 1995 (Rob 1995, 1997, 1998 and 1999; Kohler 2000 and 2001). The 2001 season was the seventh 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 chum salmon escapement of the various streams within the Nome Subdistrict.

OBJECTIVES

The objectives of this project were to:

1) estimate the chum, pink, king and coho salmon escapement to the Eldorado River
2) describe the timing of the salmon escapements passed the Eldorado River tower site.
3) obtain age-sex data from Eldorado River chum salmon.

METHODS

The Eldorado River counting tower camp is located on Sitnasuak Native Corporation land, one half-mile 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 established at the end of June. A 15-foot high scaffolding tower erected on the bank of the river served as an observation platform. A 50' x 8' vinyl canvas flash panel was placed on the river bottom directly in front of the tower. A weir, built from the mid-stream end of the flash panel to the opposite bank, directed the fish over the flash panel. An array of four 120-volt lights mounted on a post below the tower illuminated the flash panel during periods of low light and darkness.

Counting began on 8 July and ended on 13 September. 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. The daily unexpanded counts by species were relayed to the Nome office by radio every day.

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. 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 day's 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. Each 18-hour count was expanded to a 24-hour count by multiplying each day's 18-hour total by the nearest 24-hour expansion factor, and adding that number to the 18-hour count for each day.[1]

Scales were taken, lengths measured, and sex identified from chum salmon that were collected by beach seine from the Eldorado River. Samples were also collected from carcasses where in many cases, sex and length could not be determined.

RESULTS

Table 1 and Figure 2 show the expanded daily and cumulative salmon passage totals for each species. During 2001, the expanded counts were: 11,635 chum salmon, 488 pink salmon, 50 chinook salmon, and 1,509 coho salmon (Tables 2-5). The reported total hourly counts were: 9,246 chum salmon, 392 pink salmon, 32 chinook salmon, and 1,192 coho salmon (Tables 6-9).

Chum and pink salmon were observed on 8 July, the first day of counting. Chinook salmon were first observed on 10 July. Coho salmon were first observed on 31 July. The daily peak count of

[1] From Rob 1999

1,627 chum salmon occurred on 11 July; the daily peak count of 49 pink salmon occurred on 12 August; the daily peak count of 227 coho salmon occurred on 4 September (Table 1).

Most chum salmon returned during the two-week period from 8 July through 22 July when 88% passed the tower, although smaller numbers were counted through September (Table 2; Figures 3 and 4). Pink salmon returned from 8 July through 13 September with a peak date of 12 August (Table 3; Figures 5 and 6). Few chinook salmon were counted (Table 4; Figures 7 and 8). All coho salmon counted returned after 31 July (Table 5; and Figures 9 and 10).

All species counted exhibited a diurnal pattern of migration as they passed the counting tower. During the 8-hour period from 1900 through 0400 hours, 69% of the chum salmon passed the tower (Table 2; Figure 11). During the 10-hour period from 1800 through 0400 hours, 76% of the pink salmon escapement passed the tower (Table 3; Figure 12). During the periods from 0100 to 0500 and 1300 to 1700 hours, 94% of the chinook salmon escapement passed the tower (Table 4; Figure 13). Similarly, 69% of coho salmon escapement passed the counting tower between 2000 and 0500 hours (Table 5; Figure 14).

An aerial survey of the Eldorado River counted 4,450 chum salmon on 20 July 2001. The aerial survey counted 38% of the total season expanded tower count of 11,635 chum salmon. The cumulative tower count of chum salmon was 9,643 on that date (Table 1). The aerial survey count was 46% of the cumulative tower count on 20 July 2001.

An aerial survey of the Eldorado River up and downstream of the tower counted 8 pink salmon on 27 August 2001. The total season expanded tower count of pink salmon was 488. This aerial survey counted 1.6% of the total season expanded tower count of pink salmon. The aerial survey above the counting tower counted 8 pink salmon on 27 August, when the cumulative tower count of pink salmon was 460. This aerial survey counted 1.7% of the cumulative tower count on 27 August (Table 1).

A total of 587 usable chum salmon scales were collected from the Eldorado River. The age composition was 0.3% age-0.2, 4.4% age-0.3, 94.4% age-0.4, and 0.9% age-0.5. The sample was 58.3% male and 41.7% female (Table 10).

DISCUSSION

The 2001 escapement of chum salmon was the third weakest since the project began in 1995. The size of the 2001 chum escapement was 28% below the 1995 to 2000 average (Figure 15). The 2001 escapement of pink salmon was the weakest since the project began and only 50% of its parent year 1999 (Figure 16). For comparison purposes even-numbered years escapements are shown in Figure 17. The 2001 escapement of chinook salmon was the third largest since 1995 (Figure 18). The 2001 coho salmon escapement timing was about average and the escapement the highest on record (Figure 19). Note that in previous years the tower was never

operated as late in the season and much of the coho salmon run was not counted (Appendix 1). High water precluded counts on 24-27 August. Passage estimates were made in the same manner as leave days. Appendix 2 shows the percentage of salmon by species that were estimated each year from 1995 to 2001.

A counting tower on this watershed is a valuable tool for fishery managers because the chum salmon escapement documented from 1995 to the present shows the relative importance of the Eldorado and Flambeau watersheds to the chum salmon stocks in the Nome Subdistrict. Nome Subdistrict subsistence permits indicate that this user group relies heavily on this watershed for their subsistence needs.

If funding is available, we recommend the project start a week earlier to more completely count chum, pink and chinook salmon. Funding made available in 2001 allowed the project to remain in operation three weeks later than in previous years to more completely count coho salmon.

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Table 1. Expanded daily and cumulative migration of all salmon species past the Eldorado River counting tower, Norton Sound, 2001.

Date	Chum	Cumulative Chum	Pink	Cumulative Pink	Chinook	Cumulative Chinook	Coho	Cumulative Coho
8-Jul	542	542	10	10	0	0	0	0
9-Jul	1,082	1,624	0	10	0	0	0	0
10-Jul	876	2,500	0	10	4	4	0	0
11-Jul	1,627	4,127	0	10	0	4	0	0
12-Jul	572	4,699	0	10	0	4	0	0
13-Jul	799	5,498	0	10	0	4	0	0
14-Jul	706	6,204	0	10	0	4	0	0
15-Jul	674	6,878	0	10	0	4	0	0
16-Jul	902	7,780	0	10	0	4	0	0
17-Jul	585	8,365	0	10	4	8	0	0
18-Jul	565	8,930	0	10	8	16	0	0
19-Jul	507	9,437	0	10	14	30	0	0
20-Jul	206	9,643	0	10	5	35	0	0
21-Jul	299	9,942	10	20	2	37	0	0
22-Jul	267	10,209	10	30	2	39	0	0
23-Jul	194	10,403	8	38	0	39	0	0
24-Jul	51	10,454	10	48	0	39	0	0
25-Jul	107	10,561	16	64	0	39	0	0
26-Jul	120	10,681	10	74	0	39	0	0
27-Jul	69	10,750	6	80	0	39	0	0
28-Jul	91	10,841	10	90	0	39	0	0
29-Jul	57	10,898	12	102	0	39	0	0
30-Jul	79	10,977	11	113	0	39	0	0
31-Jul	53	11,030	23	136	2	41	2	2
1-Aug	48	11,078	18	154	0	41	2	4
2-Aug	70	11,148	18	172	0	41	4	8
3-Aug	57	11,205	23	195	1	42	0	8
4-Aug	37	11,242	12	207	1	43	0	8
5-Aug	15	11,257	11	218	2	45	0	8
6-Aug	14	11,271	10	228	0	45	0	8
7-Aug	24	11,295	17	245	0	45	0	8
8-Aug	48	11,343	37	282	0	45	10	18
9-Aug	48	11,391	20	302	0	45	6	24
10-Aug	10	11,401	14	316	0	45	3	27
11-Aug	15	11,416	3	319	0	45	0	27
12-Aug	47	11,463	49	368	0	45	12	39
13-Aug	30	11,493	30	398	2	47	9	48
14-Aug	28	11,521	34	432	1	48	24	72
15-Aug	14	11,535	0	432	0	48	16	88
16-Aug	16	11,551	14	446	0	48	24	112
17-Aug	16	11,567	0	446	0	48	26	138
18-Aug	12	11,579	0	446	0	48	21	159
19-Aug	0	11,579	0	446	0	48	14	173
20-Aug	8	11,587	6	452	0	48	14	187
21-Aug	12	11,599	4	456	0	48	16	203
22-Aug	0	11,599	4	460	0	48	4	207
23-Aug	4	11,603	0	460	0	48	4	211
24-Aug	3	11,606	0	460	0	48	10	221
25-Aug	3	11,609	0	460	0	48	10	231
26-Aug	3	11,612	0	460	0	48	10	241
27-Aug	3	11,615	0	460	0	48	11	252
28-Aug	2	11,617	2	462	0	48	12	264
29-Aug	0	11,617	0	462	0	48	138	402
30-Aug	0	11,617	0	462	0	48	89	491
31-Aug	0	11,617	2	464	0	48	56	547
1-Sep	0	11,617	16	480	0	48	185	732
2-Sep	0	11,617	0	480	0	48	42	774
3-Sep	4	11,621	0	480	0	48	78	852
4-Sep	8	11,629	4	484	0	48	227	1,079
5-Sep	4	11,633	2	486	0	48	157	1,236
6-Sep	0	11,633	0	486	0	48	62	1,298
7-Sep	0	11,633	0	486	0	48	45	1,343
8-Sep	0	11,633	0	486	0	48	43	1,386
9-Sep	0	11,633	0	486	2	50	36	1,422
10-Sep	0	11,633	0	486	0	50	42	1,464
11-Sep	0	11,633	0	486	0	50	14	1,478
12-Sep	0	11,633	0	486	0	50	17	1,495
13-Sep	2	11,635	2	488	0	50	14	1,509
Total	11,635		488		50		1,509	

Table 2. Expanded daily hourly chum salmon migration past the Eldorado River counting tower, Norton Sound, 2001.

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
8-Jul												18	32	22	150	18	28	118	156	542	4.7%
9-Jul	552	106	94	16	0	0	34	0	0	0	0	0	2	0	0	0	10	166	102	1,082	9.3%
10-Jul	116	120	0	160	100	74	28	0	0	0	0	0	0	0	0	20	64	70	124	876	7.5%
11-Jul	136	132	236	12	28	0	51	0	0	4	154	0	20	66	96	44	160	208	280	1,627	14.0%
12-Jul	116	112	74	18	0	0	18	2	16	8	10	2	32	30	12	0	20	48	54	572	4.9%
13-Jul	244	196	40	0	0	0	20	1	8	24	5	3	22	19	6	8	40	52	111	799	6.9%
14-Jul	122	126	67	4	9	4	17	1	8	24	0	4	12	8	0	16	60	56	168	706	6.1%
15-Jul	0	56	94	8	18	8	16	0	0	40	78	18	60	82	72	2	40	46	36	674	5.8%
16-Jul	140	20	146	30	34	0	22	14	40	18	76	0	74	14	62	38	42	52	80	902	7.8%
17-Jul	70	22	32	6	16	18	14	8	69	34	69	11	37	7	46	19	38	26	43	585	5.0%
18-Jul	58	23	20	17	17	9	14	8	69	34	69	11	37	7	46	19	38	26	43	565	4.9%
19-Jul	46	24	8	28	18	0	12	2	98	50	62	22	0	0	30	0	38	26	43	507	4.4%
20-Jul	36	23	12	17	21	5	10	12	6	0	0	0	6	18	0	0	34	0	6	206	1.8%
21-Jul	26	22	16	6	24	10	15	4	4	0	2	6	0	0	4	12	4	56	88	299	2.6%
22-Jul	74	26	10	2	0	14	13	0	12	0	0	0	0	92	8	2	4	6	4	267	2.3%
23-Jul	6	6	8	8	0	16	10	2	0	12	0	0	0	30	56	8	18	12	2	194	1.7%
24-Jul	12	0	6	2	2	0	3	0	0	0	4	0	2	0	2	0	4	4	10	51	0.4%
25-Jul	14	6	0	8	2	4	5	0	8	0	8	6	24	4	2	4	6	6	0	107	0.9%
26-Jul	14	6	12	40	10	2	6	2	0	4	2	10	0	2	0	6	0	4	0	120	1.0%
27-Jul	0	0	10	4	0	6	0	1	0	2	1	5	9	3	1	3	11	9	4	69	0.6%
28-Jul	7	1	5	2	1	6	0	1	0	0	0	0	18	4	2	0	22	14	8	91	0.8%
29-Jul	14	2	0	0	2	6	0	1	6	0	2	0	4	2	2	0	4	8	4	57	0.5%
30-Jul	12	14	0	4	0	0	7	0	0	0	0	6	0	8	4	20	2	0	2	79	0.7%
31-Jul	0	0	0	8	0	0	5	0	0	0	2	2	20	0	6	0	0	8	2	53	0.5%
1-Aug	4	16	2	0	2	0	4	0	0	0	0	0	0	4	0	0	0	2	14	48	0.4%
2-Aug	0	2	12	0	0	0	6	8	0	0	0	0	0	4	6	22	10	0	0	70	0.6%
3-Aug	0	14	2	0	0	0	5	4	1	2	0	0	0	2	3	13	5	0	6	57	0.5%
4-Aug	0	8	1	0	2	0	3	4	1	2	0	0	0	0	0	4	0	0	12	37	0.3%
5-Aug	0	2	0	0	4	0	1	0	2	4	0	0	0	2	0	0	0	0	0	15	0.1%
6-Aug	0	0	0	4	0	0	6	0	0	0	0	0	0	0	2	0	0	2	0	14	0.1%
7-Aug	0	0	6	0	0	0	10	2	0	0	0	0	0	0	0	0	0	0	6	24	0.2%
8-Aug	0	0	18	0	4	0	20	0	0	0	0	0	0	0	2	0	0	0	4	48	0.4%
9-Aug	0	10	4	4	2	0	20	0	0	0	0	0	2	0	0	2	0	0	4	48	0.4%
10-Aug	0	0	0	0	0	0	4	0	0	0	0	0	2	0	0	2	0	0	2	10	0.1%
11-Aug	2	0	0	2	0	1	6	0	0	0	0	0	2	0	0	2	0	0	0	15	0.1%
12-Aug	4	0	0	4	0	2	19	0	0	6	0	0	0	0	4	0	0	8	0	47	0.4%
13-Aug	0	2	6	0	4	0	0	0	0	2	8	0	0	2	4	2	0	0	0	30	0.3%
14-Aug	0	1	3	1	3	0	0	4	2	4	0	4	4	0	2	0	0	0	0	28	0.2%
15-Aug	0	0	0	2	2	0	0	2	0	0	0	2	2	0	0	2	2	0	0	14	0.1%
16-Aug	0	0	4	0	4	0	0	0	0	0	0	2	0	0	0	0	0	6	0	16	0.1%
17-Aug	2	2	0	0	4	0	0	0	0	0	0	1	0	1	0	1	0	3	2	16	0.1%
18-Aug	1	1	0	0	2	0	0	0	0	0	0	0	0	2	0	2	0	0	4	12	0.1%
19-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
20-Aug	0	0	2	4	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	8	0.1%
21-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	2	0	12	0.1%
22-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
23-Aug	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	4	0.0%
24-Aug	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	3	0.0%
25-Aug	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	3	0.0%
26-Aug	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	3	0.0%
27-Aug	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	3	0.0%
28-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0.0%
29-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
30-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
31-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
1-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
2-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
3-Sep	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	4	0.0%
4-Sep	0	0	0	0	0	0	4	0	0	0	2	0	0	2	0	0	0	0	0	8	0.1%
5-Sep	0	0	0	0	0	0	2	0	0	0	1	0	0	1	0	0	0	0	0	4	0.0%
6-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
7-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
8-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
9-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
10-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
11-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
12-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
13-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0.0%
Total	1,828	1,103	950	421	335	185	432	83	350	274	555	133	431	440	630	296	716	1,044	1,429	11,635	100%
	15.7%	9.5%	8.2%	3.6%	2.9%	1.6%	3.7%	0.7%	3.0%	2.4%	4.8%	1.1%	3.7%	3.8%	5.4%	2.5%	6.2%	9.0%	12.3%	100.0%	

Table 3. Expanded daily hourly pink salmon migration past the Eldorado River counting tower, Norton Sound, 2001.

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	Total
8-Jul												0	0	10	0	0	0	0	0	10	2.0%
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	0	0	0	0	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%
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
14-Jul	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%
16-Jul	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%
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	6	4	10	2.0%
22-Jul	2	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	2	0	2	10	2.0%
23-Jul	2	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	8	1.6%
24-Jul	4	0	2	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	10	2.0%
25-Jul	2	0	2	4	6	0	0	0	0	0	0	0	0	2	0	0	0	0	0	16	3.3%
26-Jul	2	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	10	2.0%
27-Jul	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	6	1.2%
28-Jul	4	2	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	10	2.0%
29-Jul	8	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	12	2.5%
30-Jul	0	6	0	0	0	0	1	0	0	0	0	0	0	0	0	0	4	0	0	11	2.3%
31-Jul	0	4	12	0	0	0	3	0	0	0	0	0	0	0	0	4	0	0	0	23	4.7%
1-Aug	0	0	0	0	0	0	2	0	0	0	0	0	0	12	0	0	4	0	0	18	3.7%
2-Aug	0	6	2	0	0	0	2	0	0	0	0	0	0	0	2	6	0	0	0	18	3.7%
3-Aug	0	2	12	0	0	0	3	0	0	1	1	0	0	0	1	3	0	0	0	23	4.7%
4-Aug	0	1	8	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	12	2.5%
5-Aug	0	0	4	0	0	0	1	0	0	2	2	0	0	0	0	2	0	0	0	11	2.3%
6-Aug	4	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	10	2.0%
7-Aug	8	2	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	17	3.5%
8-Aug	2	0	2	0	0	0	15	0	0	0	0	0	2	10	2	0	0	4	0	37	7.6%
9-Aug	0	0	0	0	0	0	8	0	0	0	0	2	0	0	0	4	0	2	4	20	4.1%
10-Aug	0	2	4	0	0	0	2	0	0	0	0	1	0	0	0	2	0	1	2	14	2.9%
11-Aug	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.6%
12-Aug	0	0	0	0	0	0	7	0	0	0	0	0	0	0	2	0	0	40	0	49	10.0%
13-Aug	8	0	12	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	2	30	6.1%
14-Aug	4	0	6	0	0	0	0	4	2	8	0	2	0	2	2	0	0	0	4	34	7.0%
15-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
16-Aug	0	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	2.9%
17-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
18-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
19-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
20-Aug	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	6	1.2%
21-Aug	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0.8%
22-Aug	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	4	0.8%
23-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
24-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
25-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
26-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
27-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
28-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0.4%
29-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
30-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
31-Aug	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	0.4%
1-Sep	0	4	0	2	0	0	0	0	0	0	4	0	0	0	0	0	2	0	4	16	3.3%
2-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
3-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
4-Sep	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0.8%
5-Sep	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0.4%
6-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
7-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
8-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
9-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
10-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
11-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
12-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
13-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0.4%
Total	50	40	84	19	6	7	56	4	2	19	10	5	7	38	11	31	14	56	29	488	100.0%
	10.2%	8.2%	17.2%	3.9%	1.2%	1.4%	11.5%	0.8%	0.4%	3.9%	2.0%	1.0%	1.4%	7.8%	2.3%	6.4%	2.9%	11.5%	5.9%	100.0%	

Table 4. Expanded daily hourly chinook salmon migration past the Eldorado River counting tower, Norton Sound, 2001.

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
8-Jul	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%
10-Jul	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	8.0%
11-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
14-Jul	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%
16-Jul	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	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	4	8.0%
18-Jul	0	5	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	8	16.0%
19-Jul	0	10	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	14	28.0%
20-Jul	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	10.0%
21-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	4.0%
22-Jul	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4.0%
23-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
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%
29-Jul	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%
31-Jul	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	4.0%
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	0	0	0	0	0	0	0	0	0	0	0	0.0%
3-Aug	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	2.0%
4-Aug	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	2.0%
5-Aug	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	4.0%
6-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
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%
12-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
13-Aug	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4.0%
14-Aug	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2.0%
15-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
16-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
17-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
18-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
19-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
20-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
21-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
22-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
23-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
24-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
25-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
26-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
27-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
28-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
29-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
30-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
31-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
1-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
2-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
3-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
4-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
5-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
6-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
7-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
8-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
9-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	4.0%
10-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
11-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
12-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
13-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
Total	0	23	5	2	2	0	0	0	4	8	0	2	0	0	4	0	0	0	0	50	100.0%
	0.0%	46.0%	10.0%	4.0%	4.0%	0.0%	0.0%	0.0%	8.0%	16.0%	0.0%	4.0%	0.0%	0.0%	8.0%	0.0%	0.0%	0.0%	0.0%	100.0%	

Table 5. Expanded daily hourly coho salmon migration past the Eldorado River counting tower, Norton Sound, 2001.

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	Total
8-Jul	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%
10-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	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%
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
14-Jul	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%
16-Jul	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%
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%
22-Jul	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%
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%
29-Jul	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%
31-Jul	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0.1%
1-Aug	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1%
2-Aug	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0.3%
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%
5-Aug	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%
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	6	0	0	4	10	0.7%
9-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	4	0	6	0.4%
10-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	3	0.2%
11-Aug	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	2	0	0	4	0	2	0	2	2	0	12	0.8%
13-Aug	0	0	0	0	0	0	0	0	0	0	4	0	0	0	2	0	0	0	3	9	0.6%
14-Aug	0	1	0	1	2	4	0	4	0	4	0	0	2	0	0	0	0	0	6	24	1.6%
15-Aug	0	2	0	2	4	8	0	0	0	0	0	0	0	0	0	0	0	0	0	16	1.1%
16-Aug	0	2	4	8	2	0	0	0	0	0	0	2	0	0	0	0	2	0	4	24	1.6%
17-Aug	4	2	8	0	4	0	0	1	0	0	0	1	0	0	0	1	1	0	4	26	1.7%
18-Aug	3	1	6	0	4	0	0	1	0	0	0	0	0	0	0	2	0	0	4	21	1.4%
19-Aug	2	0	4	0	4	0	0	2	0	0	0	0	0	0	0	2	0	0	0	14	0.9%
20-Aug	6	2	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0.9%
21-Aug	0	2	2	0	0	0	0	0	0	0	0	0	0	0	4	0	0	6	2	16	1.1%
22-Aug	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0.3%
23-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0.3%
24-Aug	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3	10	0.7%
25-Aug	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3	10	0.7%
26-Aug	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3	10	0.7%
27-Aug	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2	11	0.7%
28-Aug	4	0	0	6	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	12	0.8%
29-Aug	2	8	8	4	0	0	14	0	2	0	0	0	0	0	0	98	0	0	2	138	9.1%
30-Aug	30	16	20	0	4	8	9	0	0	0	0	0	0	0	0	0	0	0	2	89	5.9%
31-Aug	18	12	6	2	6	2	6	0	0	2	0	0	0	0	0	0	0	0	2	56	3.7%
1-Sep	132	0	4	22	0	0	19	0	0	4	0	0	0	0	0	4	0	0	0	185	12.3%
2-Sep	0	0	12	4	4	18	4	0	0	0	0	0	0	0	0	0	0	0	0	42	2.8%
3-Sep	0	4	16	14	0	2	8	0	0	0	0	0	0	0	0	0	0	22	12	78	5.2%
4-Sep	28	8	18	0	4	0	23	0	0	0	6	64	0	46	0	0	0	8	22	227	15.0%
5-Sep	8	30	20	12	4	4	16	0	0	1	4	32	3	23	0	0	0	0	0	157	10.4%
6-Sep	12	4	4	0	8	6	6	0	0	2	2	0	6	0	0	0	12	0	0	62	4.1%
7-Sep	0	4	8	8	0	0	5	0	0	2	1	0	3	0	0	0	6	5	3	45	3.0%
8-Sep	2	4	4	6	0	0	9	0	0	2	0	0	0	0	0	0	0	10	6	43	2.8%
9-Sep	4	4	0	4	0	0	10	0	0	2	0	2	0	0	2	0	2	6	0	36	2.4%
10-Sep	12	6	0	0	4	0	12	0	0	0	0	0	0	0	6	0	0	0	2	42	2.8%
11-Sep	2	0	2	0	0	4	4	0	0	0	0	0	2	0	0	0	0	0	0	14	0.9%
12-Sep	2	4	4	0	0	2	5	0	0	0	0	0	0	0	0	0	0	0	0	17	1.1%
13-Sep	0	0	2	0	2	0	4	0	0	0	2	0	0	0	2	0	0	0	2	14	0.9%
Total	281	118	154	115	56	58	154	8	2	21	19	103	20	69	18	123	25	70	95	1,509	100.0%
	18.6%	7.8%	10.2%	7.6%	3.7%	3.8%	10.2%	0.5%	0.1%	1.4%	1.3%	6.8%	1.3%	4.6%	1.2%	8.2%	1.7%	4.6%	6.3%	100.0%	

Table 6. Reported hourly chum salmon observations at the Eldorado River counting tower, Norton Sound, 2001.

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
8-Jul																	18	32	22	150	18	28	118	156	542	5.9%
9-Jul	552	106	94	16	0	0											0	2	0	0	0	10	166	102	1,048	11.3%
10-Jul	116	120	0	160	100	74							0	0	0	0	0	0	0	0	20	64	70	124	848	9.2%
11-Jul	136	132	236	12	28	0							0	0	4	154	0	20	66	96	44	160	208	280	1,576	17.0%
12-Jul	116	112	74	18	0	0	0	0	0	4	8	6	2	16	8	10	2	32	30	12	0	20	48	54	572	6.2%
13-Jul	244	196	40	0	0	0	0	0	0	0															480	5.2%
14-Jul																0	4	12	8	0	16	60	56	168	324	3.5%
15-Jul	0	56	94	8	18	8							0	0	40	78	18	60	82	72	2	40	46	36	658	7.1%
16-Jul	140	20	146	30	34	0							14	40	18	76	0	74	14	62	38	42	52	80	880	9.5%
17-Jul	70	22	32	6	16	18																			164	1.8%
18-Jul																									0	0.0%
19-Jul	46	24	8	28	18	0							2	98	50	62	22	0	0	30	0				388	4.2%
20-Jul													12	6	0	0	0	6	18	0	0	34	0	6	82	0.9%
21-Jul	26	22	16	6	24	10							4	4	0	2	6	0	0	4	12	4	56	88	284	3.1%
22-Jul	74	26	10	2	0	14							0	12	0	0	0	0	92	8	2	4	6	4	254	2.7%
23-Jul	6	6	8	8	0	16							2	0	12	0	0	0	30	56	8	18	12	2	184	2.0%
24-Jul	12	0	6	2	2	0							0	0	0	4	0	2	0	2	0	4	4	10	48	0.5%
25-Jul	14	6	0	8	2	4							0	8	0	8	6	24	4	2	4	6	6	0	102	1.1%
26-Jul	14	6	12	40	10	2	2	4	0	0	0	0	2	0	4	2	10	0	2	0	6	0	4	0	120	1.3%
27-Jul	0	0	10	4	0	6	0	0	0																20	0.2%
28-Jul														0	0	0	0	18	4	2	0	22	14	8	68	0.7%
29-Jul	14	2	0	0	2	6								6	0	2	0	4	2	2	0	4	8	4	56	0.6%
30-Jul	12	14	0	4	0	0							0	0	0	0	6	0	8	4	20	2	0	2	72	0.8%
31-Jul	0	0	0	8	0	0							0	0	0	2	2	20	0	6	0	0	8	2	48	0.5%
1-Aug	4	16	2	0	2								0	0	0	0	0	0	4	0	0	0	2	14	44	0.5%
2-Aug	0	2	12	0	0	0	0	0	0	2	4	0	8	0	0	0	0	0	4	6	22	10	0	0	70	0.8%
3-Aug	0	14	2	0	0	0																			16	0.2%
4-Aug																				0	0	4	0	0	16	0.2%
5-Aug	0	2	0	0	4	0							0	2	4	0	0	0	2	0	0	0	0	0	14	0.2%
6-Aug	0	0	0	4	0	0							0	0	0	0	0	0	0	2	0	0	2	0	8	0.1%
7-Aug	0	0	6	0	0	0							2	0	0	0	0	0	0	0	0	0	0	6	14	0.2%
8-Aug	0	0	18	0	4	0							0	0	0	0	0	0	0	2	0	0	0	4	28	0.3%
9-Aug	0	10	4	4	2	0	2	0	18	0	0	0	0	0	0	0	0	2	0	0	2	0	0	4	48	0.5%
10-Aug	0	0	0	0	0	0	4	0	0																4	0.0%
11-Aug															0	0	0	2	0	0	2	0	0	0	4	0.0%
12-Aug	4	0	0	4	0	2							0	0	6	0	0	0	0	4	0	0	8	0	28	0.3%
13-Aug	0	2	6	0	4	0							0	0	2	8	0	0	2	4	2	0	0		30	0.3%
14-Aug													4	2	4	0	4	4	0	2	0	0	0	0	20	0.2%
15-Aug	0	0	0	2	2	0							2	0	0	0	2	2	0	0	2	2	0	0	14	0.2%
16-Aug	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	6	0	16	0.2%
17-Aug	2	2	0	0	4	0	0	0																	8	0.1%
18-Aug																0	0	0	2	0	2	0	0	4	8	0.1%
19-Aug	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
20-Aug	0	0	2	4	0	0							0	0	0	0	0	2	0	0	0	0	0	0	8	0.1%
21-Aug	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	10	2	0	12	0.1%
22-Aug	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
23-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	4	0.0%
24-Aug																									0	0.0%
25-Aug																									0	0.0%
26-Aug																									0	0.0%
27-Aug																			0	0	2	0	0	0	2	0.0%
28-Aug	0	0	0	0	0	0							0	0	0	0	0	0	2	0	0	0	0	0	2	0.0%
29-Aug	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
30-Aug	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
31-Aug	0	0	0	0	0	0											0	0	0	0	0	0	0	0	0	0.0%
1-Sep	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
2-Sep	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
3-Sep	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0.0%
4-Sep	0	0	0	0	0	0							0	0	0	2	0	0	2	0	0	0	0	0	4	0.0%
5-Sep	0	0	0	0	0	0							0							0	0	0	0	0	0	0.0%
6-Sep	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
7-Sep	0	0	0	0	0	0																			0	0.0%
8-Sep																0	0	0	0	0	0	0	0	0	0	0.0%
9-Sep	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
10-Sep	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
11-Sep	0	0	0	0	0	0										0	0	0	0	0	0	0	0	0	0	0.0%
12-Sep	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
13-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0.0%
Total	1,602	920	842	378	280	160	10	4	18	6	12	6	54	194	152	410	102	320	400	528	228	546	902	1,172	9,246	100%
	17.3%	10.0%	9.1%	4.1%	3.0%	1.7%	0.1%	0.0%	0.2%	0.1%	0.1%	0.1%	0.6%	2.1%	1.6%	4.4%	1.1%	3.5%	4.3%	5.7%	2.5%	5.9%	9.8%	12.7%	100.0%	

Table 7. Reported hourly pink salmon observations at the Eldorado River counting tower, Norton Sound, 2001.

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
8-Jul																	0	0	10	0	0	0	0	0	10	2.6%
9-Jul	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	0	0	0	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%
12-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%
13-Jul	0	0	0	0	0	0	0	0	0	0															0	0.0%
14-Jul																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%
16-Jul	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%
18-Jul																									0	0.0%
19-Jul	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%
21-Jul	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	6	4	10	2.6%
22-Jul	2	0	0	0	0	0							0	0	2	0	0	0	0	2	0	2	0	2	10	2.6%
23-Jul	2	0	2	0	0	2							0	0	0	0	0	0	0	0	0	0	0	2	8	2.0%
24-Jul	4	0	2	2	0	0							0	0	0	0	0	2	0	0	0	0	0	0	10	2.6%
25-Jul	2	0	2	4	6	0							0	0	0	0	0	0	2	0	0	0	0	0	16	4.1%
26-Jul	2	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	10	2.6%
27-Jul	0	2	0	2	0	0	0	0	0																4	1.0%
28-Jul														0	0	0	0	0	0	0	0	0	2	0	2	0.5%
29-Jul	8	2	0	0	0	2								0	0	0	0	0	0	0	0	0	0	0	12	3.1%
30-Jul	0	6	0	0	0	0							0	0	0	0	0	0	0	0	0	4	0	0	10	2.6%
31-Jul	0	4	12	0	0	0							0	0	0	0	0	0	0	0	4	0	0	0	20	5.1%
1-Aug	0	0	0	0	0								0	0	0	0	0	0	12	0	0	4	0	0	16	4.1%
2-Aug	0	6	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	6	0	0	0	18	4.6%
3-Aug	0	2	12	0	0	0																			14	3.6%
4-Aug																									0	0.0%
5-Aug	0	0	4	0	0	0							0	0	2	2	0	0	0	0	2	0	0	0	10	2.6%
6-Aug	4	0	2	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	6	1.5%
7-Aug	8	2	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	10	2.6%
8-Aug	2	0	2	0	0	0							0	0	0	0	0	2	10	2	0	0	4	0	22	5.6%
9-Aug	0	0	0	0	0	0	2	0	6	0	0	0	0	0	0	0	2	0	0	0	4	0	2	4	20	5.1%
10-Aug	0	2	4	0	0	0	0	2	0																8	2.0%
11-Aug															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	2	0	0	40	0	42	10.7%
13-Aug	8	0	12	0	0	0							0	0	0	0	0	0	0	0	8	0	0		28	7.1%
14-Aug													4	2	8	0	2	0	2	2	0	0	0	4	24	6.1%
15-Aug	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
16-Aug	0	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	3.6%
17-Aug	0	0	0	0	0	0	0	0																	0	0.0%
18-Aug																0	0	0	0	0	0	0	0	0	0	0.0%
19-Aug	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
20-Aug	0	0	2	2	0	0							0	0	0	0	0	0	0	0	0	2	0	0	6	1.5%
21-Aug	0	2	0	0	0	2							0	0	0	0	0	0	0	0	0	0	0	0	4	1.0%
22-Aug	0	0	0	0	0	0							0	0	2	0	0	0	0	0	0	0	0	2	4	1.0%
23-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%
24-Aug																									0	0.0%
25-Aug																									0	0.0%
26-Aug																									0	0.0%
27-Aug																			0	0	0	0	0	0	0	0.0%
28-Aug	0	0	0	0	0	0							0	0	0	0	0	0	2	0	0	0	0	0	2	0.5%
29-Aug	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
30-Aug	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
31-Aug	0	0	0	0	0	0											0	0	0	0	0	0	0	0	0	0.0%
1-Sep	0	4	0	2	0	0							0	0	0	4	0	0	0	0	2	0	0	4	16	4.1%
2-Sep	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
3-Sep	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-Sep	0	0	0	0	0	0							0	0	2	0	0	2	0						4	1.0%
5-Sep	0	0	0	0	0	0							0							0	0	0	0	0	0	0.0%
6-Sep	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
7-Sep	0	0	0	0	0	0																			0	0.0%
8-Sep																0	0	0	0	0	0	0	0	0	0	0.0%
9-Sep	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
10-Sep	0	0	0	0	0	0							0	0	0										0	0.0%
11-Sep	0	0	0	0	0	0										0	0	0	0	0	0	0	0	0	0	0.0%
12-Sep	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
13-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0.5%
Total	42	36	68	18	6	6	2	2	6	0	2	0	4	2	16	6	4	6	38	10	26	14	54	24	392	100.0%
	10.7%	9.2%	17.3%	4.6%	1.5%	1.5%	0.5%	0.5%	1.5%	0.0%	0.5%	0.0%	1.0%	0.5%	4.1%	1.5%	1.0%	1.5%	9.7%	2.6%	6.6%	3.6%	13.8%	6.1%	100.0%	

Table 8. Reported hourly chinook salmon observations at the Eldorado River counting tower, Norton Sound, 2001.

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
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%
10-Jul	0	0	0	2	2	0							0	0	0	0	0	0	0	0	0	0	0	0	4	12.5%
11-Jul	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	0	0	0	0.0%
13-Jul	0	0	0	0	0	0	0	0	0	0															0	0.0%
14-Jul																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%
16-Jul	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	2	0	0	0																			2	6.3%
18-Jul																									0	0.0%
19-Jul	0	10	0	0	0	0							0	0	4	0	0	0	0	0	0				14	43.8%
20-Jul													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	2	0	0	0	0	2	6.3%
22-Jul	0	0	2	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	2	6.3%
23-Jul	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%
25-Jul	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%
27-Jul	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%
29-Jul	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%
31-Jul	0	0	0	0	0	0							0	0	0	0	2	0	0	0	0	0	0	0	2	6.3%
1-Aug	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%
3-Aug	0	0	0	0	0	0																			0	0.0%
4-Aug																			0	0	0	0	0	0	0	0.0%
5-Aug	0	0	0	0	0	0							0	2	0	0	0	0	0	0	0	0	0	0	2	6.3%
6-Aug	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%
8-Aug	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%
10-Aug	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%
12-Aug	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
13-Aug	0	2	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0		2	6.3%
14-Aug													0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
15-Aug	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
16-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%
17-Aug	0	0	0	0	0	0	0	0																	0	0.0%
18-Aug																0	0	0	0	0	0	0	0	0	0	0.0%
19-Aug	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
20-Aug	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
21-Aug	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
22-Aug	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
23-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%
24-Aug																									0	0.0%
25-Aug																									0	0.0%
26-Aug																									0	0.0%
27-Aug																			0	0	0	0	0	0	0	0.0%
28-Aug	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
29-Aug	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
30-Aug	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
31-Aug	0	0	0	0	0	0											0	0	0	0	0	0	0	0	0	0.0%
1-Sep	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
2-Sep	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
3-Sep	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-Sep	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
5-Sep	0	0	0	0	0	0							0						0	0	0	0	0	0	0	0.0%
6-Sep	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
7-Sep	0	0	0	0	0	0																			0	0.0%
8-Sep																0	0	0	0	0	0	0	0	0	0	0.0%
9-Sep	0	0	0	0	0	0							0	0	0	0	0	0	0	2	0	0	0	0	2	6.3%
10-Sep	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
11-Sep	0	0	0	0	0	0										0	0	0	0	0	0	0	0	0	0	0.0%
12-Sep	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
13-Sep	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%
Total	0	12	4	2	2	0	0	0	0	0	0	0	0	2	4	0	2	0	0	4	0	0	0	0	32	100.0%
	0.0%	37.5%	12.5%	6.3%	6.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.3%	12.5%	0.0%	6.3%	0.0%	0.0%	12.5%	0.0%	0.0%	0.0%	0.0%	100.0%	

Table 9. Reported hourly coho salmon observations at the Eldorado River counting tower, Norton Sound, 2001.

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
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%
10-Jul	0	0	0	0	0	0							0	0	0	0	0	0	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%
12-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%
13-Jul	0	0	0	0	0	0	0	0	0	0															0	0.0%
14-Jul																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%
16-Jul	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%
18-Jul																									0	0.0%
19-Jul	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%
21-Jul	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%
23-Jul	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%
25-Jul	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%
27-Jul	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%
29-Jul	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%
31-Jul	0	0	0	0	0	0							0	0	0	0	2	0	0	0	0	0	0	0	2	0.2%
1-Aug	2	0	0	0	0								0	0	0	0	0	0	0	0	0	0	0	0	2	0.2%
2-Aug	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0.3%
3-Aug	0	0	0	0	0	0																			0	0.0%
4-Aug																			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%
6-Aug	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%
8-Aug	0	0	0	0	0	0							0	0	0	0	0	0	0	0	6	0	0	4	10	0.8%
9-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	4	0	6	0.5%
10-Aug	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%
12-Aug	0	0	0	0	0	0							0	0	2	0	0	4	0	2	0	2	2	0	12	1.0%
13-Aug	0	0	0	0	0	0							0	0	0	4	0	0	0	2	0	0	0		6	0.5%
14-Aug													4	0	4	0	0	2	0	0	0	0	0	6	16	1.3%
15-Aug	0	2	0	2	4	8							0	0	0	0	0	0	0	0	0	0	0	0	16	1.3%
16-Aug	0	2	4	8	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	4	24	2.0%
17-Aug	4	2	8	0	4	0	0	0																	18	1.5%
18-Aug																0	0	0	0	0	2	0	0	4	6	0.5%
19-Aug	2	0	4	0	4	0							2	0	0	0	0	0	0	0	2	0	0	0	14	1.2%
20-Aug	6	2	0	6	0	0							0	0	0	0	0	0	0	0	0	0	0	0	14	1.2%
21-Aug	0	2	2	0	0	0							0	0	0	0	0	0	0	4	0	0	6	2	16	1.3%
22-Aug	0	0	0	4	0	0							0	0	0	0	0	0	0	0	0	0	0	0	4	0.3%
23-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	4	0.3%
24-Aug																									0	0.0%
25-Aug																									0	0.0%
26-Aug																									0	0.0%
27-Aug																			0	0	2	0	2	2	6	0.5%
28-Aug	4	0	0	6	0	0							0	0	0	0	0	0	0	0	2	0	0	0	12	1.0%
29-Aug	2	8	8	4	0	0							0	2	0	0	0	0	0	0	98	0	0	2	124	10.4%
30-Aug	30	16	20	0	4	8							0	0	0	0	0	0	0	0	0	0	0	2	80	6.7%
31-Aug	18	12	6	2	6	2											0	0	0	0	0	0	0	2	48	4.0%
1-Sep	132	0	4	22	0	0							0	0	4	0	0	0	0	0	4	0	0	0	166	13.9%
2-Sep	0	0	12	4	4	18							0	0	0	0	0	0	0	0	0	0	0	0	38	3.2%
3-Sep	0	4	16	14	0	2	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	12	78	6.5%
4-Sep	28	8	18	0	4	0							0	0	0	6	64	0	46	0	0	0	8	22	204	17.1%
5-Sep	8	30	20	12	4	4							0							0	0	0	0	0	78	6.5%
6-Sep	12	4	4	0	8	6							0	0	2	2	0	6	0	0	0	12	0	0	56	4.7%
7-Sep	0	4	8	8	0	0																			20	1.7%
8-Sep																0	0	0	0	0	0	0	10	6	16	1.3%
9-Sep	4	4	0	4	0	0							0	0	2	0	2	0	0	2	0	2	6	0	26	2.2%
10-Sep	12	6	0	0	4	0							0	0	0	0	0	0	0	6	0	0	0	2	30	2.5%
11-Sep	2	0	2	0	0	4										0	0	2	0	0	0	0	0	0	10	0.8%
12-Sep	2	4	4	0	0	2							0	0	0	0	0	0	0	0	0	0	0	0	12	1.0%
13-Sep	0	0	2	0	2	0	0	0	0	0	4	0	0	0	0	2	0	0	0	2	0	0	0	2	14	1.2%
Total	268	112	144	96	50	54	8	0	0	0	4	0	6	2	14	14	70	14	46	18	118	18	60	76	1,192	100.0%
	22.5%	9.4%	12.1%	8.1%	4.2%	4.5%	0.7%	0.0%	0.0%	0.0%	0.3%	0.0%	0.5%	0.2%	1.2%	1.2%	5.9%	1.2%	3.9%	1.5%	9.9%	1.5%	5.0%	6.4%	100.0%	

Table 10. Age by sex composition of chum salmon samples, Eldorado River counting tower, Norton Sound, 2001.

Sample Dates: 7/22-8/16
Sample Size: 587

	Brood Year and Age Group				
	1998(0.2)	1997(0.3)	1996(0.4)	1995(0.5)	
	# of fish	# of fish	# of fish	# of fish	Totals
Number in Sample	1	12	328	1	342
% of Sample	0.2%	38.5%	4.2%	0.2%	58.3%
Number in Sample	1	14	226	4	245
% of Sample	0.2%	48.5%	38.5%	0.7%	41.7%
Totals	2	26	554	5	587
	0.3%	4.4%	94.4%	0.9%	100%

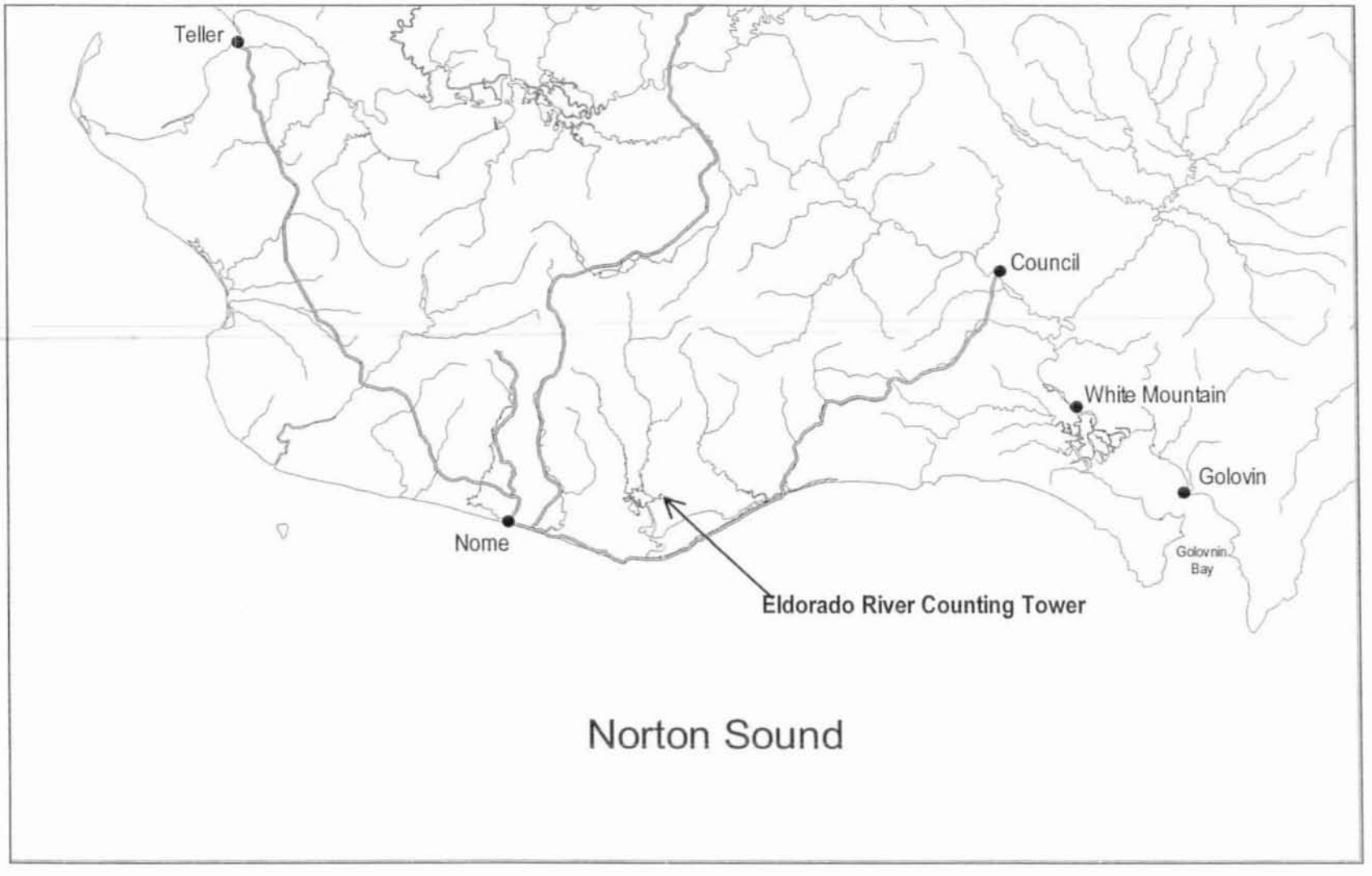

Figure 1. Area location map of the Eldorado River counting tower project site, Norton Sound, 2001.

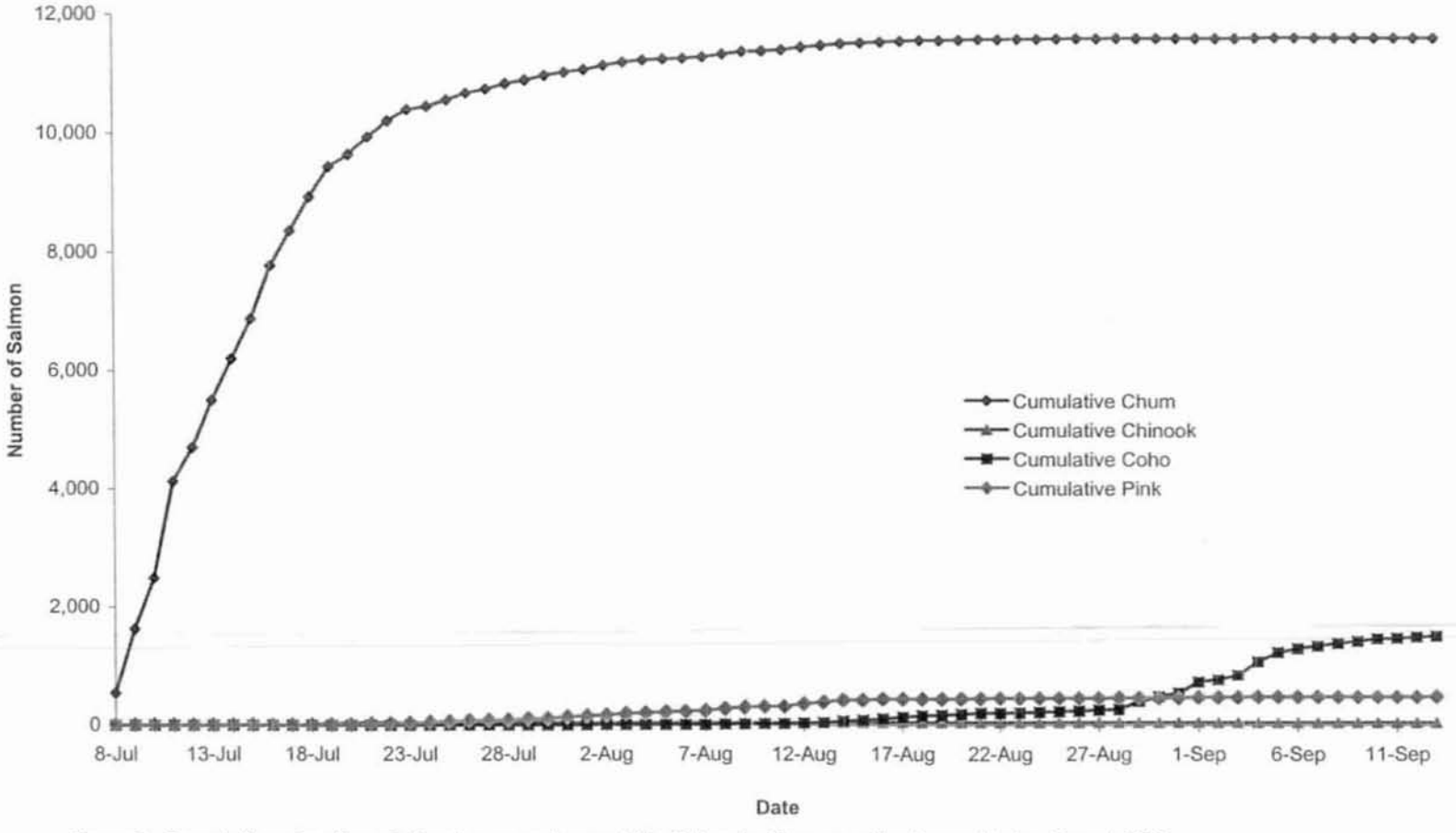

Figure 2. Cumulative migration of all salmon species past the Eldorado River counting tower, Norton Sound, 2001.

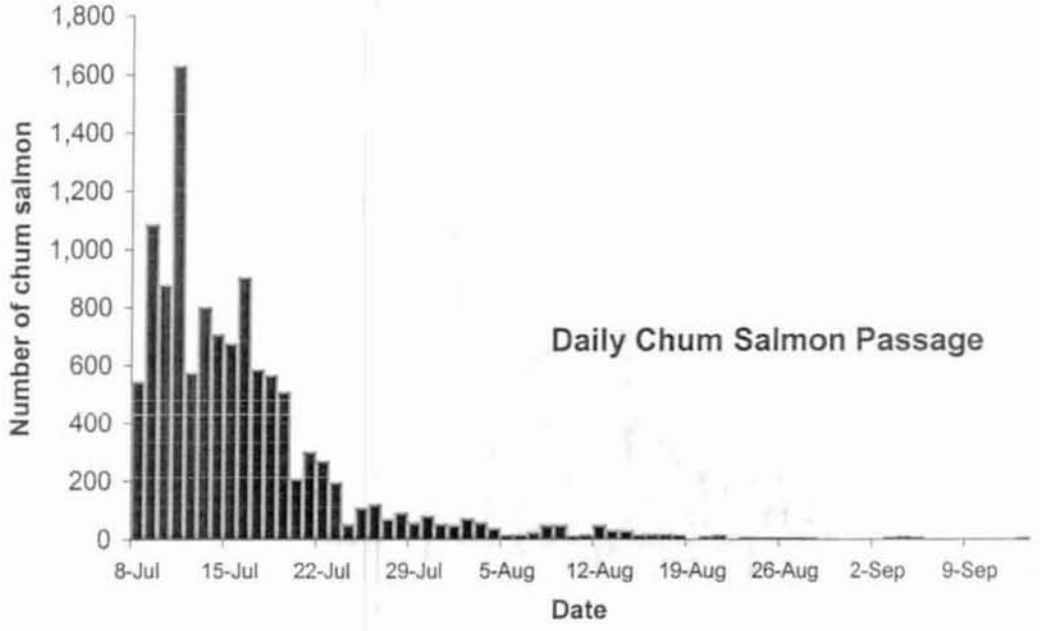

Figure 3. Daily chum salmon migration past the Eldorado River counting tower, Norton Sound, 2001.

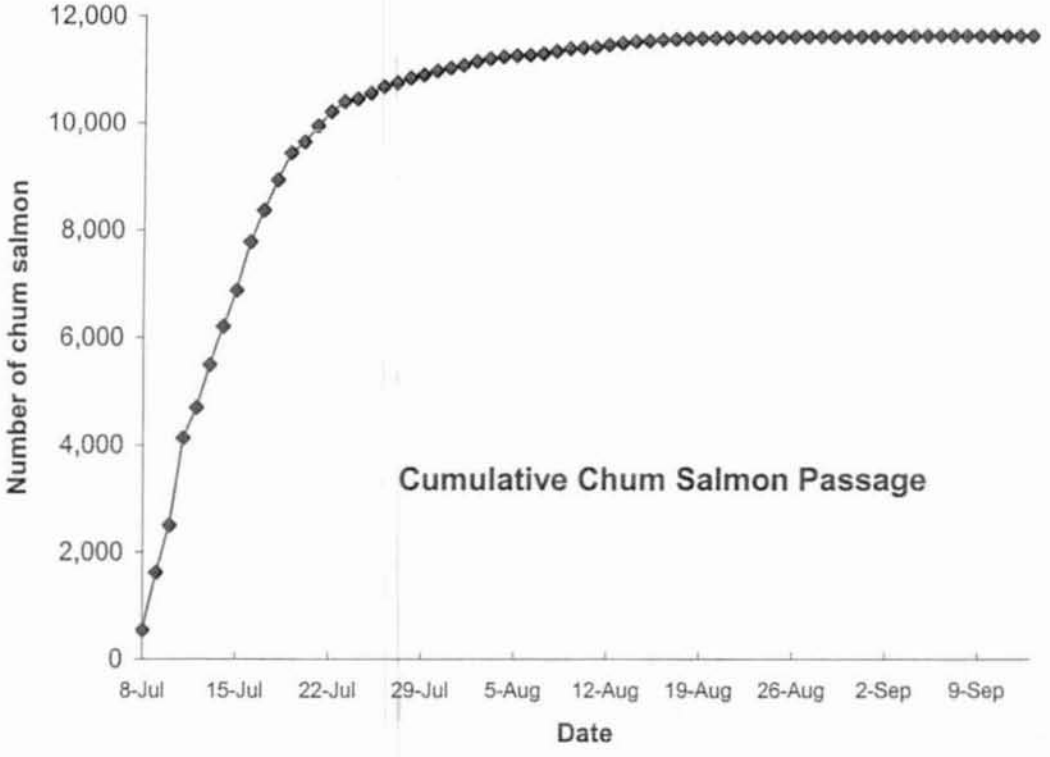

Figure 4. Cumulative chum salmon migration past the Eldorado River counting tower, Norton Sound, 2001.

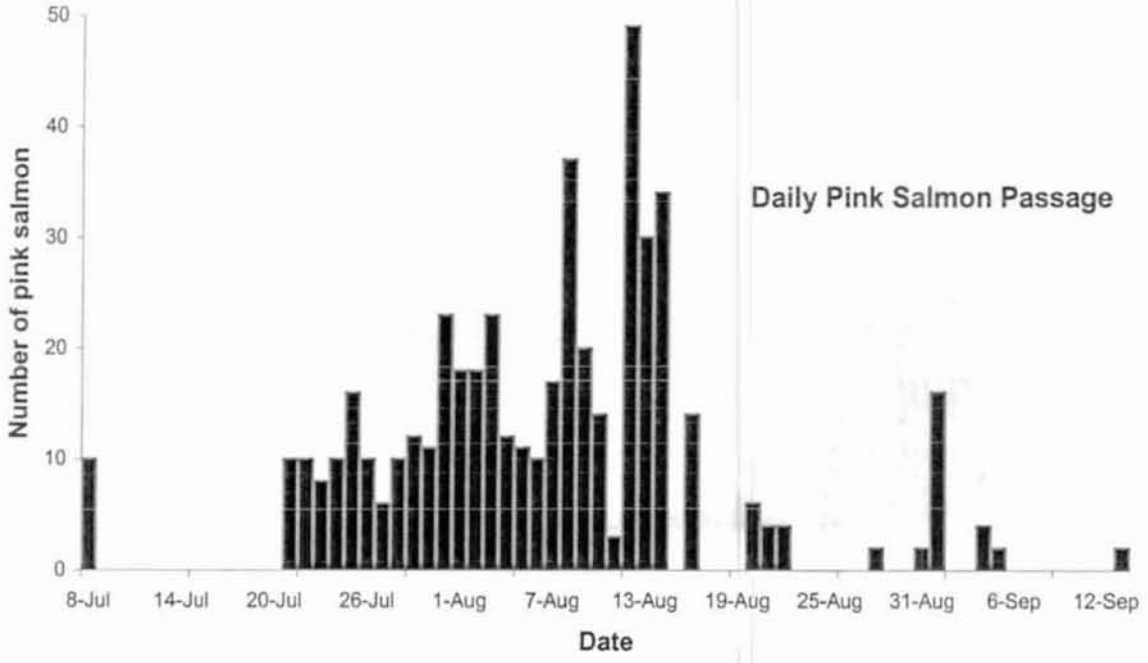

Figure 5. Daily pink salmon migration past the Eldorado River counting tower, Norton Sound, 2001.

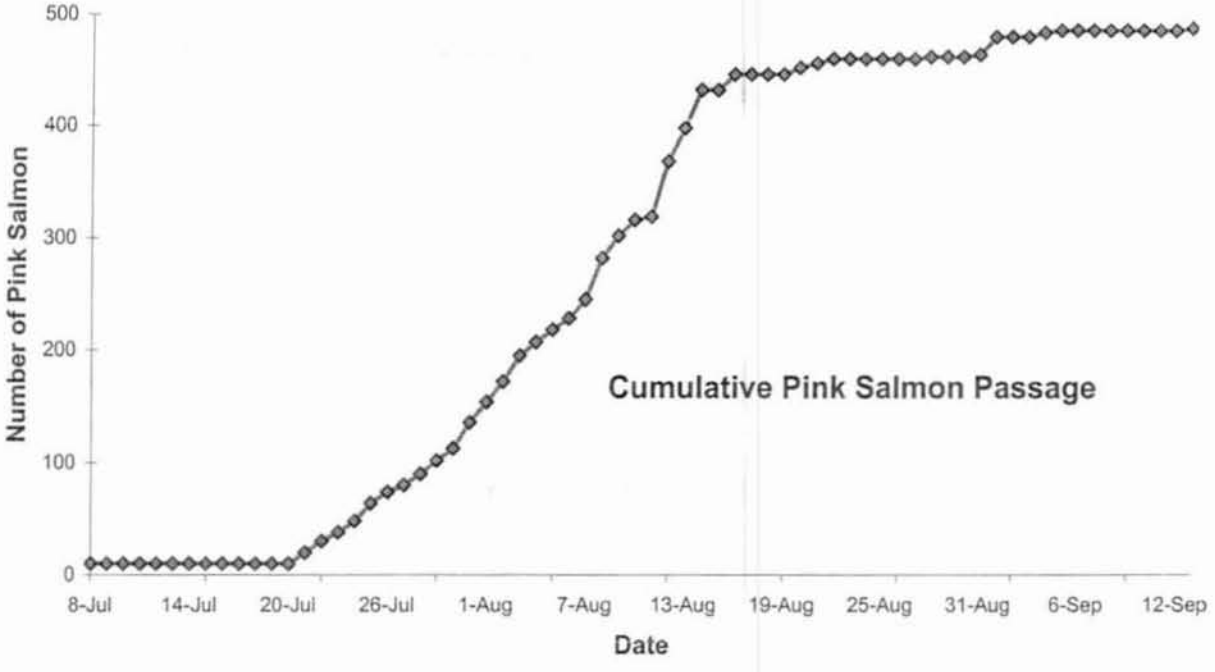

Figure 6. Cumulative pink salmon migration past the Eldorado River counting tower, Norton Sound, 2001.

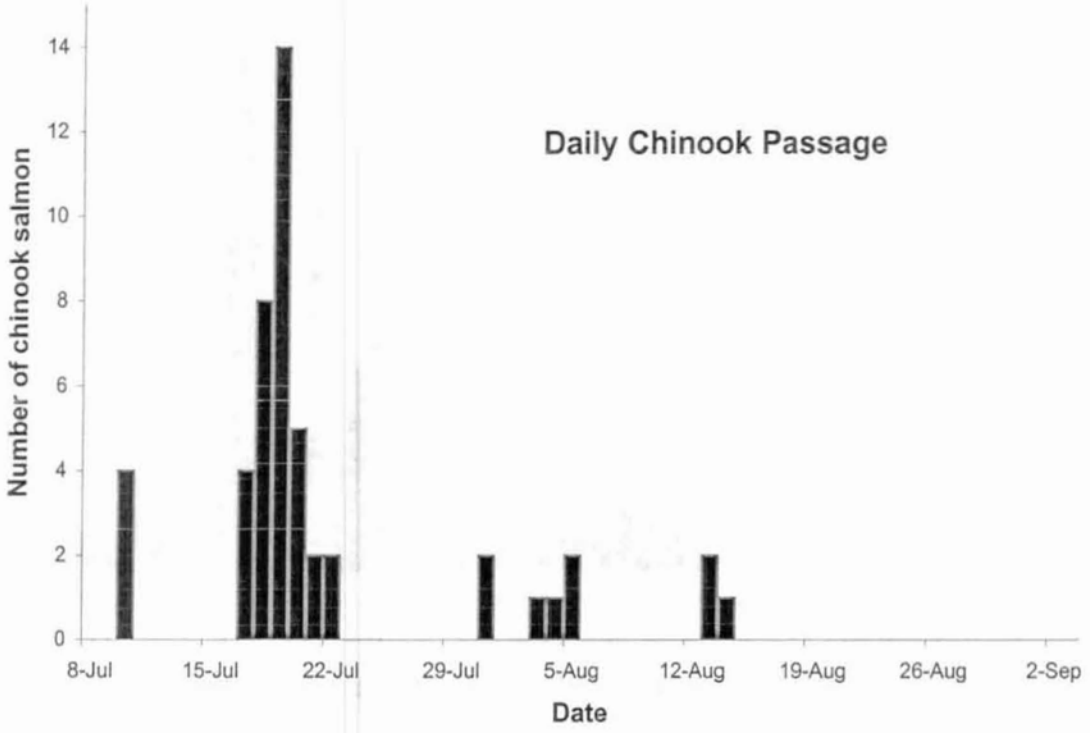

Figure 7. Daily chinook salmon migration past the Eldorado River counting tower, Norton Sound, 2001.

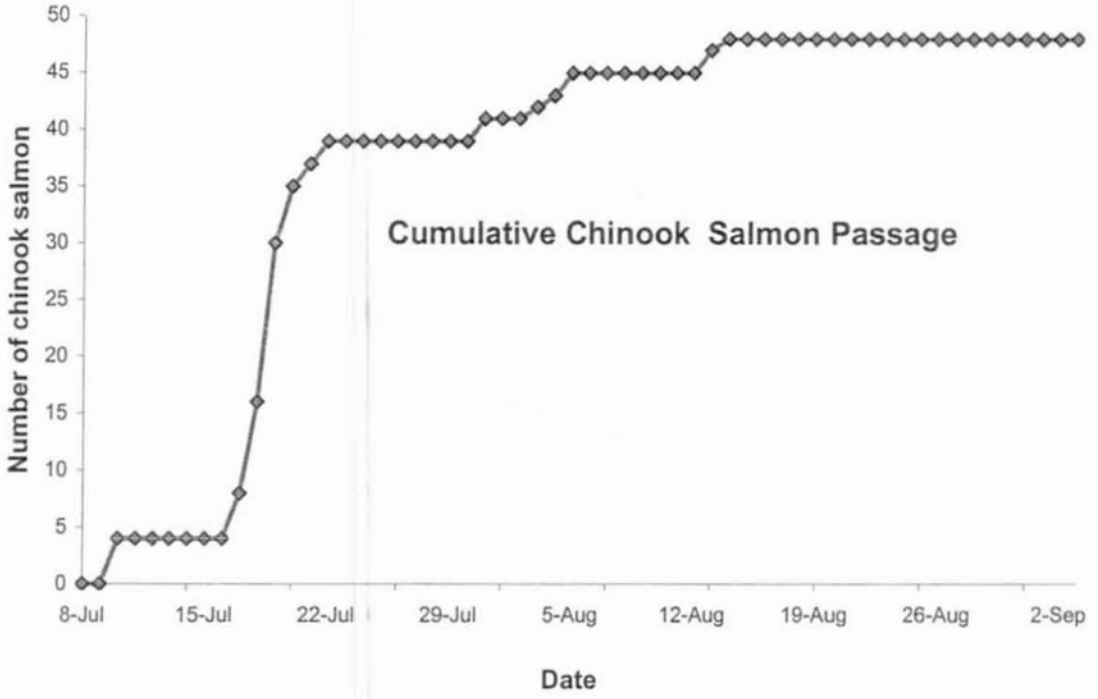

Figure 8. Cumulative chinook salmon migration past the Eldorado River counting tower, Norton Sound, 2001.

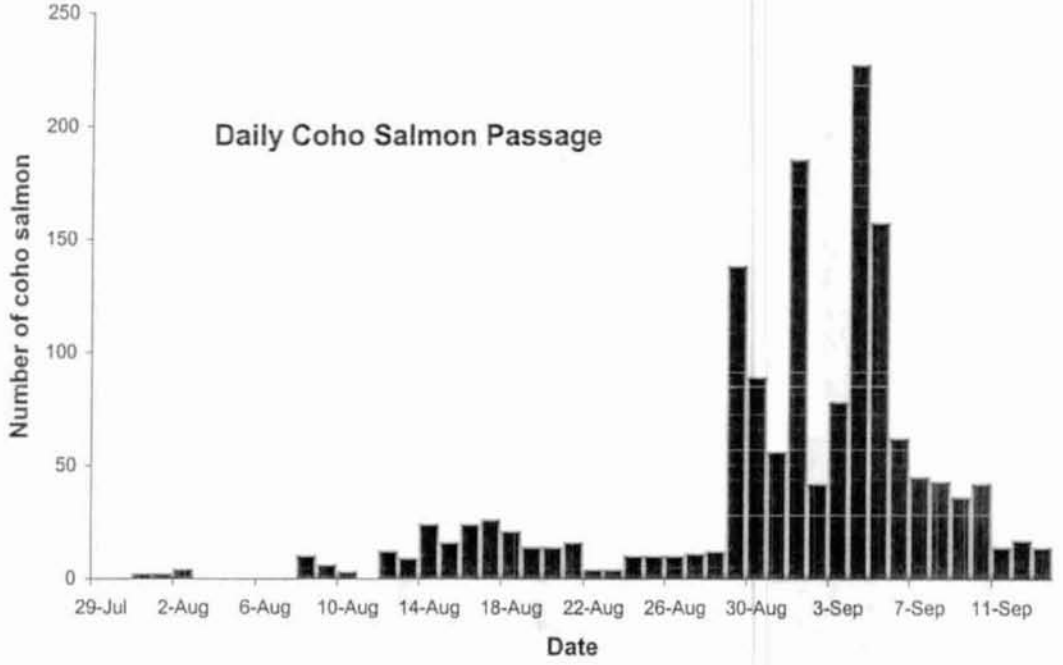

Figure 9. Daily coho salmon migration past the Eldorado River counting tower, Norton Sound, 2001.

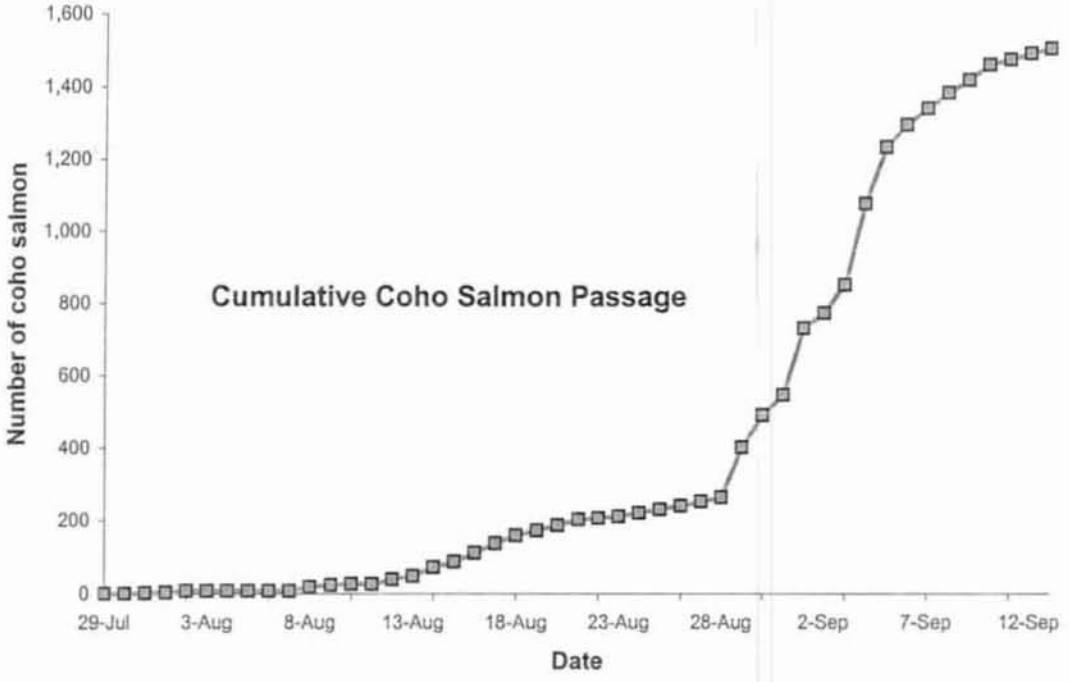

Figure 10. Cumulative coho salmon migration past the Eldorado River counting tower, Norton Sound, 2001.

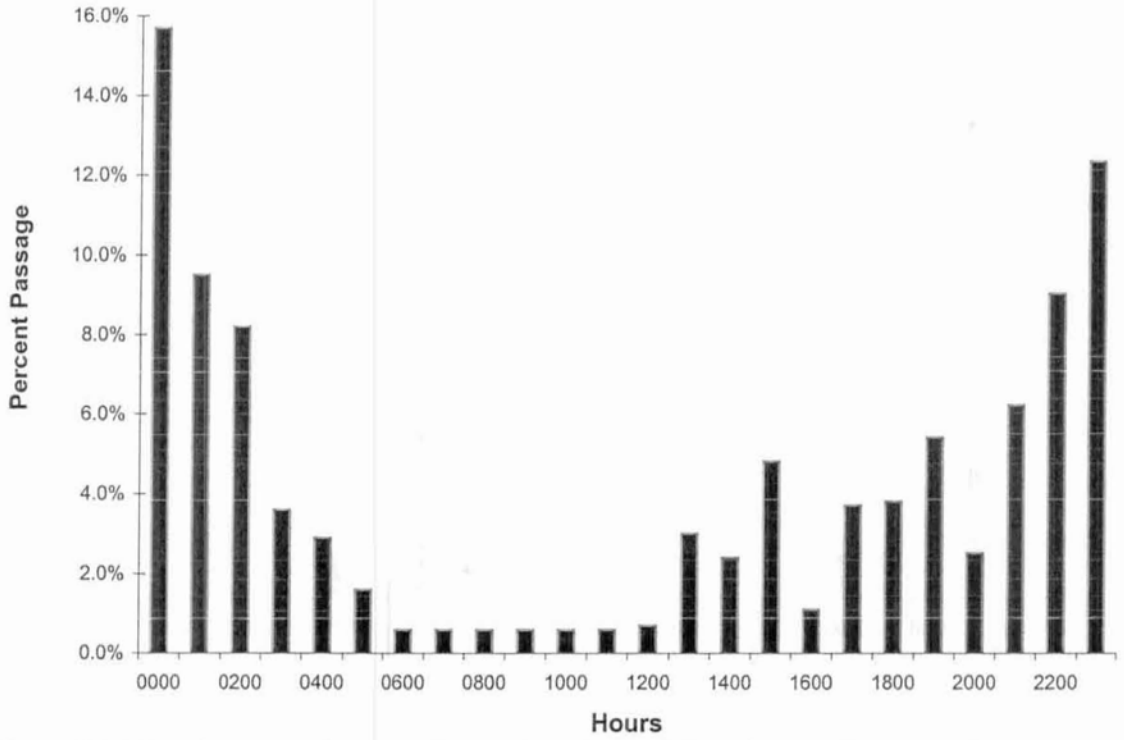

Figure 11. Diurnal pattern of chum salmon migration past the Eldorado River counting tower, Norton Sound, 2001.

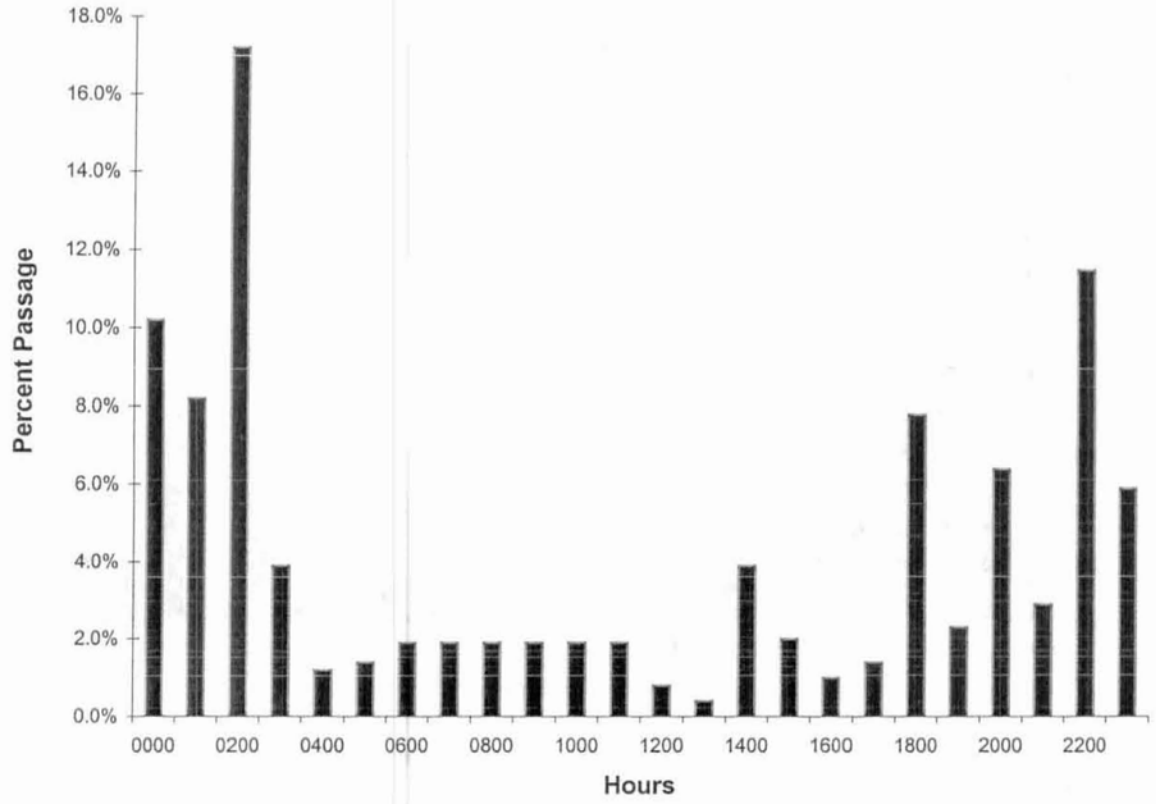

Figure 12. Diurnal pattern of pink salmon migration past the Eldorado River counting tower, Norton Sound, 2001.

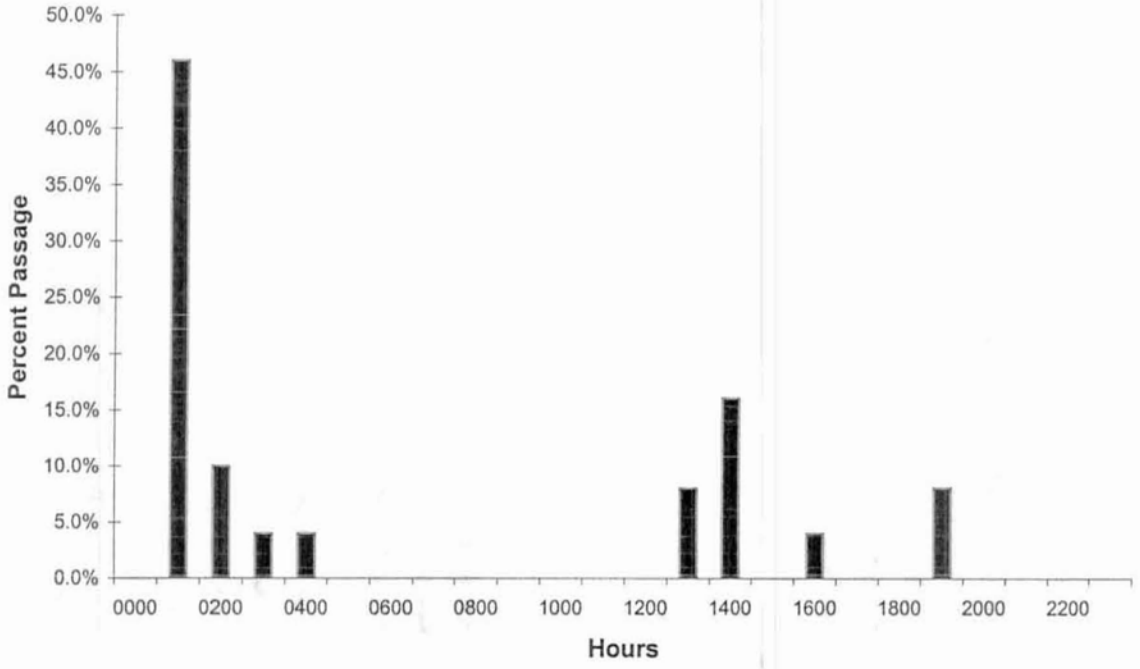

Figure 13. Diurnal pattern of chinook salmon migration past the Eldorado River counting tower, Norton Sound, 2001.

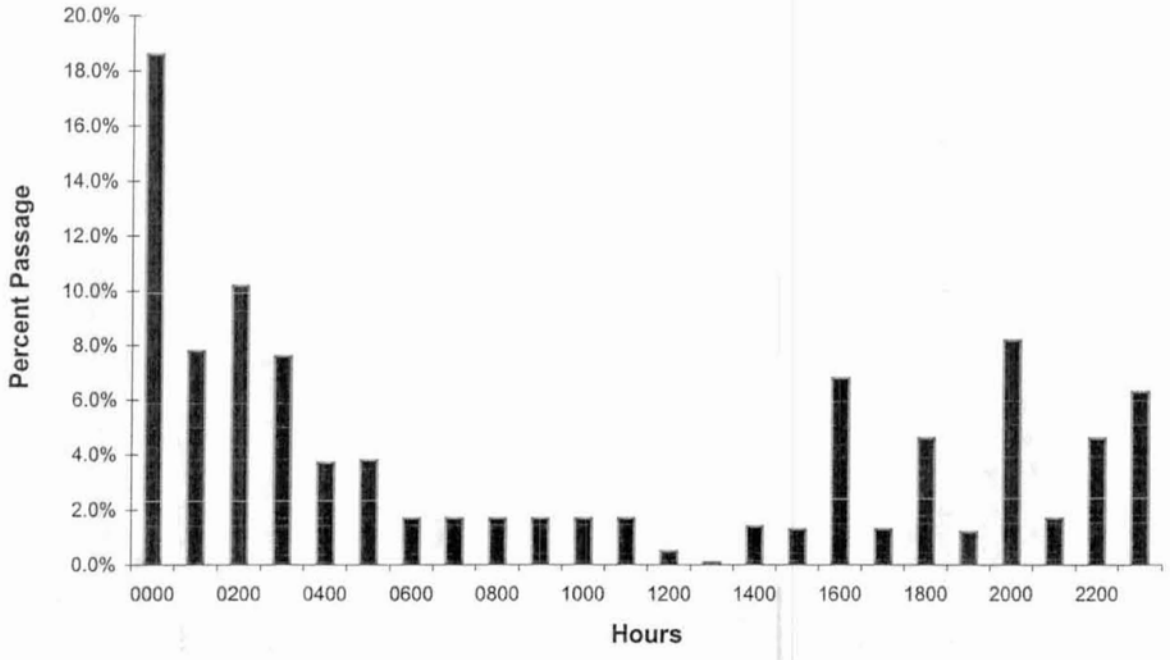

Figure 14. Diurnal pattern of coho salmon migration past the Eldorado River counting tower, Norton Sound, 2001.

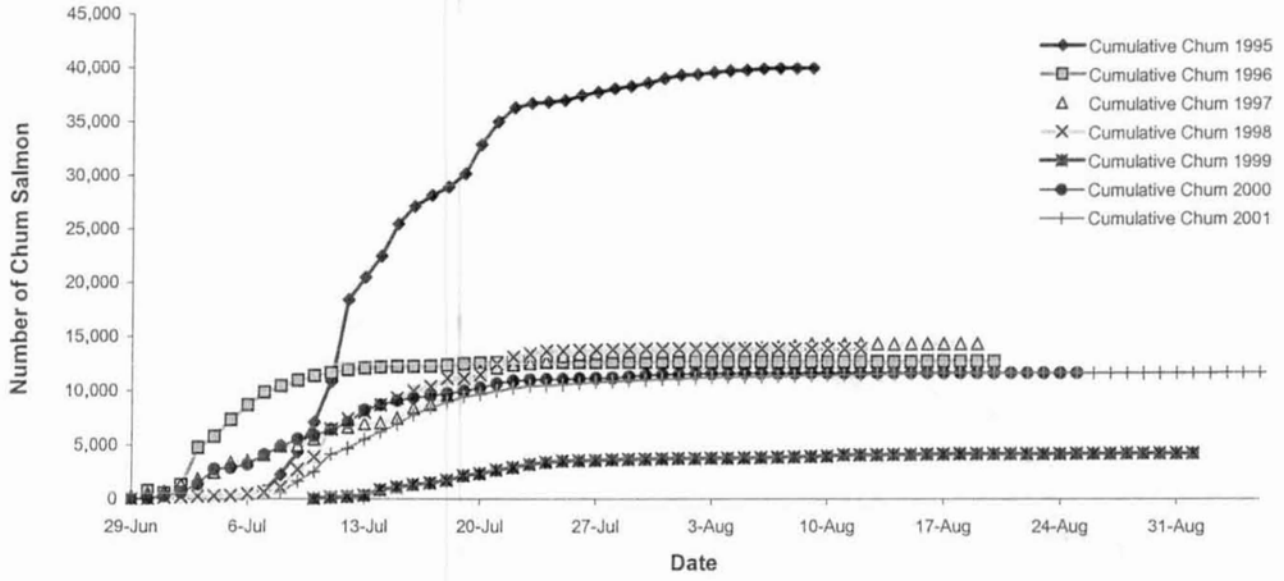

Figure 15. Cumulative migration of chum salmon past the Eldorado River counting tower, Norton Sound, 1995-2001.

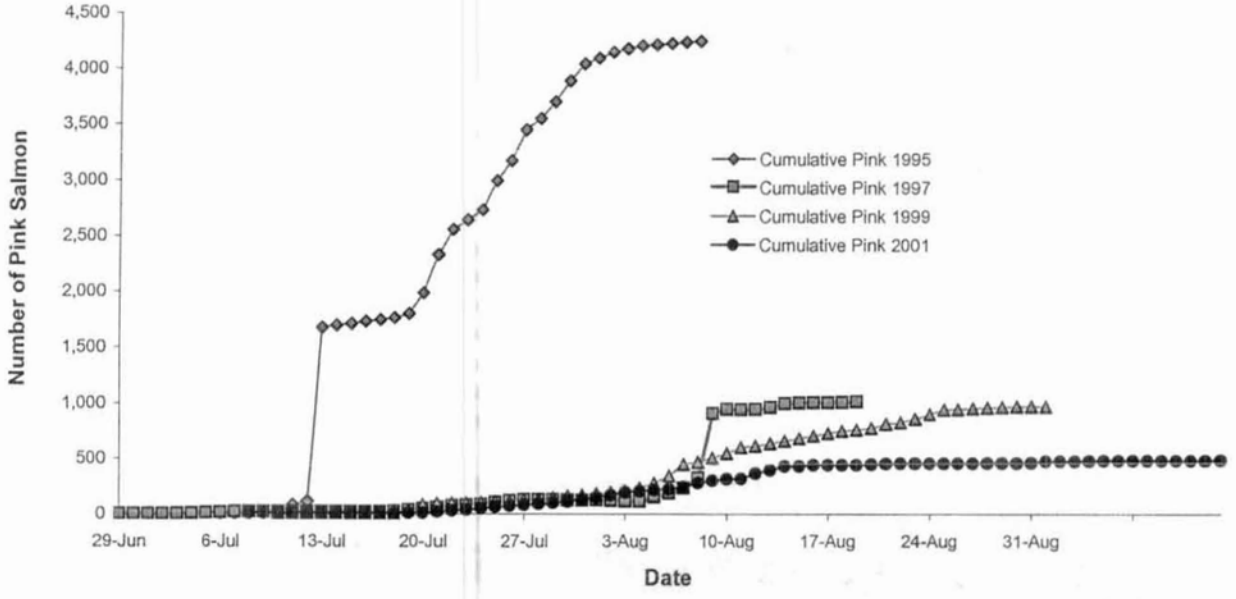

Figure 16. Cumulative odd year migration of pink salmon past the Eldorado River counting tower, Norton Sound, 1995-2001.

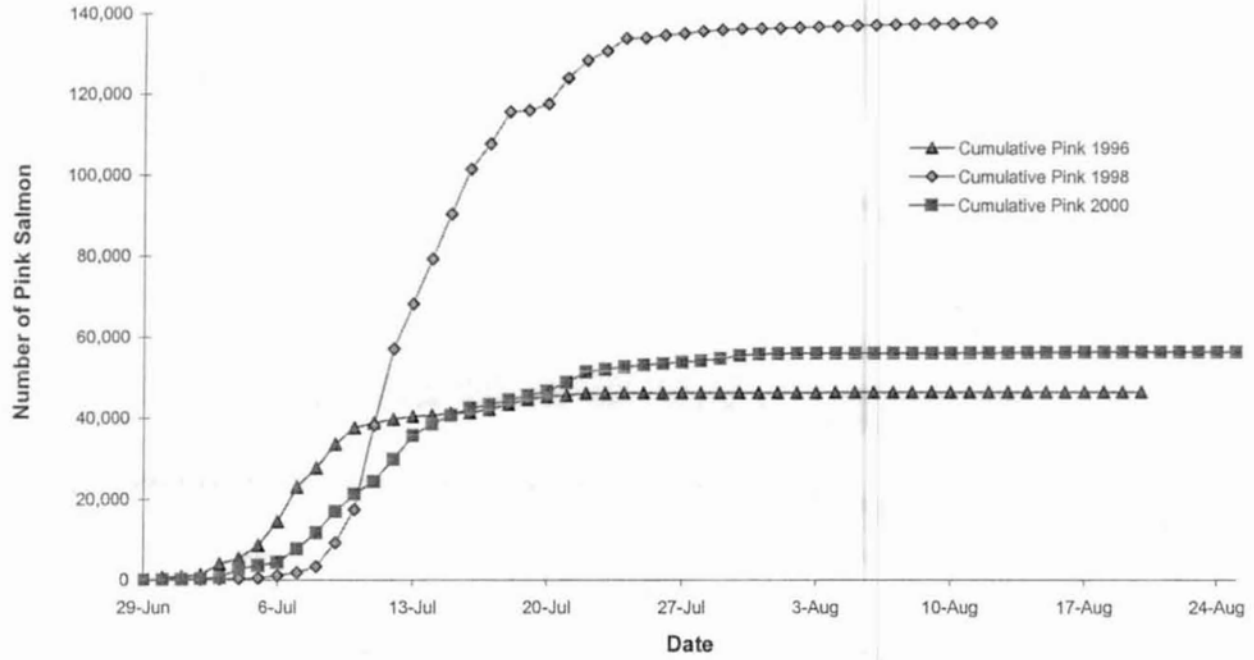

Figure 17. Cumulative even year migration of pink salmon past the Eldorado River counting tower, Norton Sound, 1996-2000.

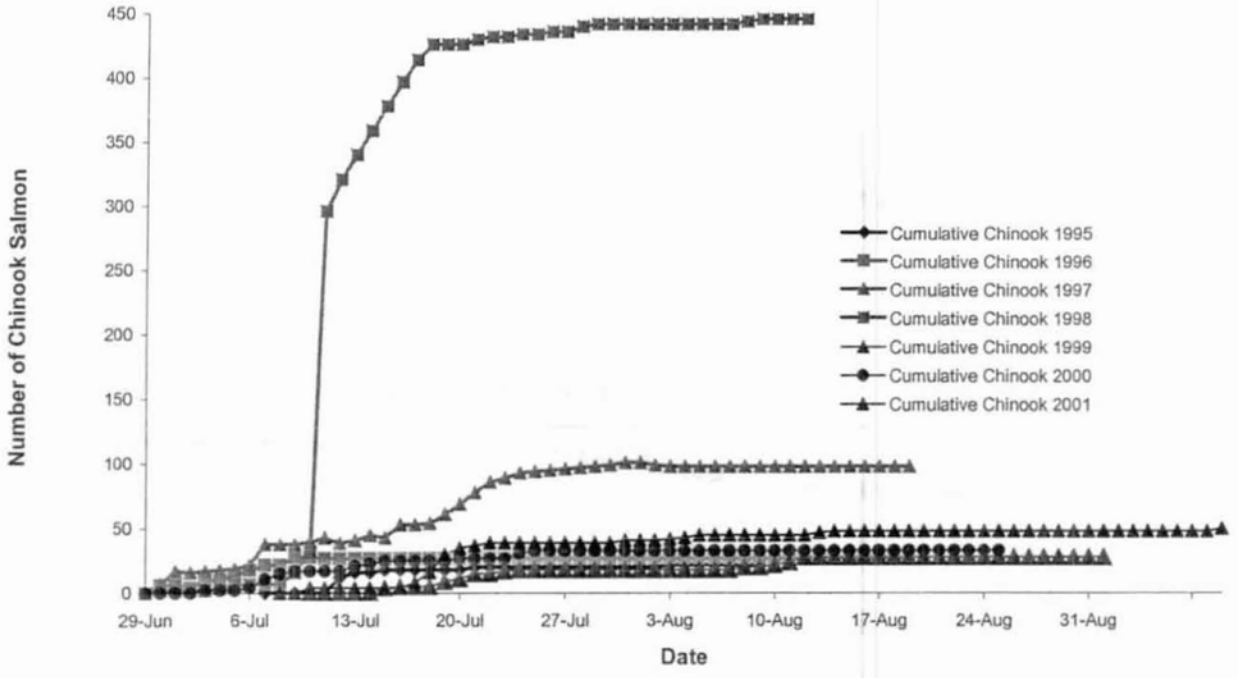

Figure 18. Cumulative migration of chinook salmon past the Eldorado River counting tower, Norton Sound, 1995-2001.

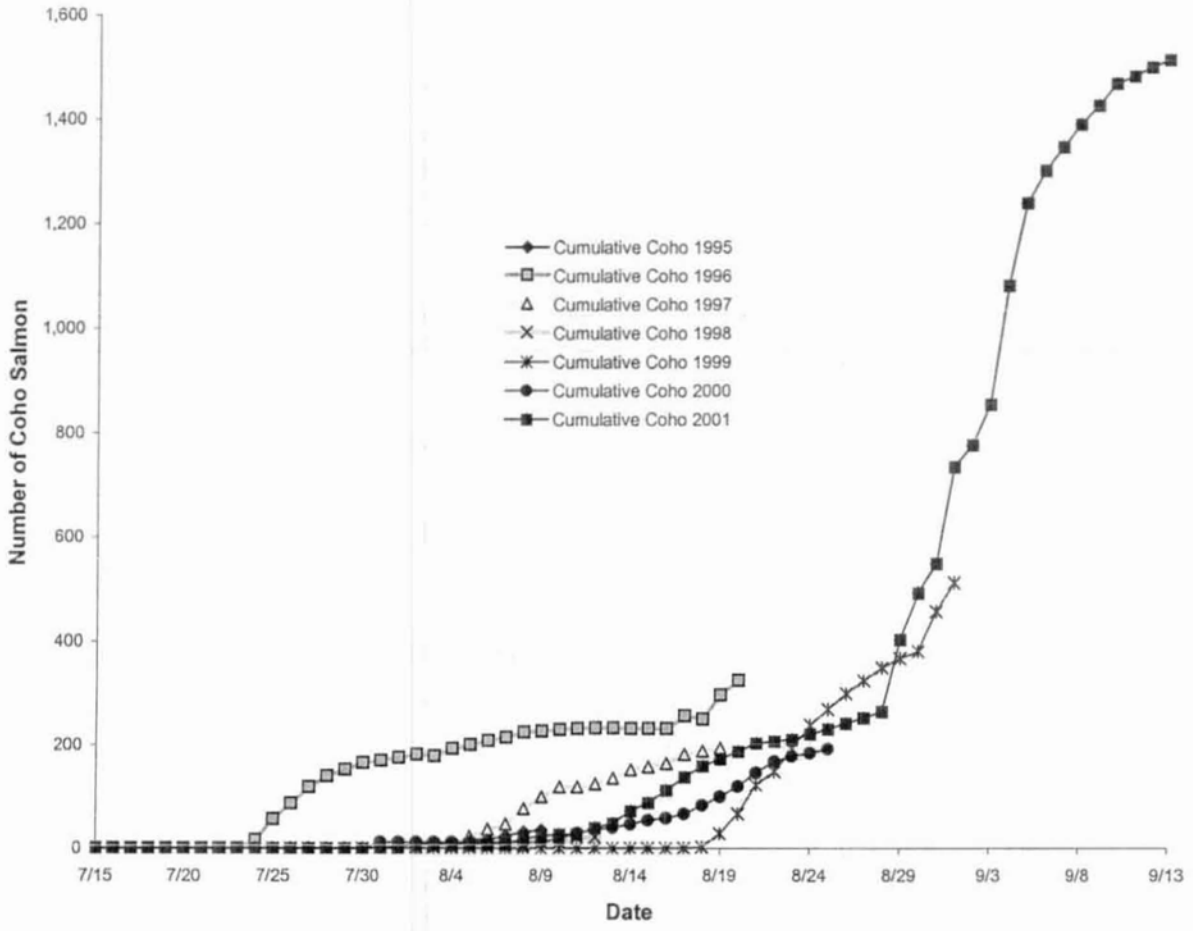

Figure 19. Cumulative migration of coho salmon past the Eldorado River counting tower, Norton Sound, 1995-2001.

Appendix 1. Historical salmon escapement at the Eldorado River counting tower, 1995-2001.

Year	Operating period	Chum	Pink	King	Coho
1995	July 7-Aug 9	39,867	4,243	22	35
1996	June 30-Aug 20	12,655	46,095	27	324
1997	June 29-Aug 19	14,302	1,022	98	194
1998	June 29-Aug 12	13,808	137,283	446	21
1999	July 10-Sept 1	4,218	977	28	510
2000	June 29-Aug 25	11,617	55,922	33	192
1995-2000 Avg.		16,078	40,924	109	213
2001	July 8-Sept 13	11,635	488	50	1,509

Appendix 2. Percentage of salmon counts estimated at the Eldorado River counting tower project 1995-2001.

Year	Operating period	Chum	Pink	King	Coho
1995	July 7-Aug 9	15.7%	8.7%	0.0%	20.0%
1996	June 30-Aug 20	12.3%	-26.0%	14.8%	35.8%
1997	June 29-Aug 19	33.3%	38.6%	18.4%	32.0%
1998	June 29-Aug 12	30.6%	43.6%	22.0%	4.8%
1999	July 10-Sept 1	18.2%	44.3%	7.1%	32.9%
2000	June 29-Aug 25	18.1%	20.0%	27.3%	33.3%
2001	July 8-Sept 13	20.5%	19.7%	36.0%	21.0%