Nome River Salmon Counting Tower
Project Summary Report, 1993

By

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INTRODUCTION

The Nome River drains into Norton Sound approximately three miles east of Nome. Commercial fishing had been gradually reduced through regulatory restrictions since the late 1970's and the marine waters near the mouth were closed in 1984. The Nome River currently supports a large number of subsistence and sport users, however, their fishing opportunities continue to decrease as fewer chum salmon return to the river each year. The subsistence and sport fisheries are now managed at a level of intensity similar to a commercial fishery, with Emergency Orders regulating restrictions and fishing periods. This was the first year a salmon counting tower has been operated on the Nome River. The project was initiated as a means to obtain more timely and accurate escapement information required for the active management of the stock throughout the season.

OBJECTIVES

1. Obtain daily and seasonal timing and magnitude of salmon escapement.

2. Determine age, sex, and length composition of the Nome River salmon escapement and subsistence chum catches.

3. Obtain daily and seasonal timing and magnitude of Dolly Varden escapement.

METHODS

The Nome River tower camp is on Sitnasuak Native Corporation land, approximately 3 miles upstream from the mouth of the river, which is leased to ADF&G on an annual basis (Figure 1).

A 15 foot high aluminum scaffold was assembled to be used as a platform from which fish were observed and enumerated as they passed by (Figure 2). The tower was guyed by aircraft cables tied off to stakes in the ground. Planks were used as footings and sandbags were placed on boards set across the lowest rungs of the metal scaffolding tower to provide a low center of gravity.

A 50 foot vinyl canvas flash panel was placed on the river bottom directly in front of the tower and angled slightly downstream. The panel provides a contrasting background where fish species can be easily identified. An aircraft cable was threaded through grommets along the upstream edge of the panel and then staked at either end to hold it in place. Sandbags were placed at intervals along the cable edge of the panel to weigh it down to the stream bottom to prevent fish from moving underneath the panel.

A weir was built from the midstream end of the flash panel up onto the bank opposite the tower to assure fish migration over the flash panel. The weir was made of 1-1/4" steel thaw pipe used as posts and livestock fencing.

Two 12 volt car Halogen driving lights were used to illuminate the flash panel during dark periods. The lights were mounted to the scaffold and powered by a car battery which also powered radios and was charged using a portable generator.

The counting schedule began July 25 and ended August 28. The two person crew counted 18 half-hour counts each day from 12 noon to 6 a.m. except on Mondays when they counted 24 hours and Sundays which they were given off. The daily counts considered in this report ran from 12 midnight to 11:59 p.m. the following night. The crew radioed the updated counts in on a daily basis to the Nome office where daily counts were expanded to account for periods not counted. Daily and cumulative counts were tracked throughout the season.

The expanded counts in this report were calculated by first multiplying the half hour counts by two, then estimating a value for all missed hours during the standard 18 hour count. This was done by calculating the mean of the two nearest hourly counts bracketing the missing time block. If more than one hour was missing then an equal number of hours on either side of the missing block was used to calculate a mean for the missing block.

Once the 18 hour counts were adjusted, they were expanded to 24 hour counts. In general, this expansion was derived by adding a factor to the 18 hour count to compensate for salmon migration during the 6 hour time block not normally counted. The factor added to an 18 hour count for expansion purposes is a proportion (the number of salmon counted from 6 a.m. to noon during the Monday 24 hour count divided by the 18 hour count from the Monday 24 hour count) multiplied by the 18 hour count for the day to be expanded. Each 18 hour count for the remainder of the week was expanded to a 24 hour count by multiplying that week's expansion factor by the 18 hour count of salmon for each day, and adding that to the 18 hour count of salmon for each day.

Additional expansion was necessary to estimate missed time blocks during the initial tower setup. Fish passage was estimated by first identifying the time block during the closest 24 hour count that corresponded with the counted period during the partial day. The percent of fish counted during that period of the daily total was calculated, and expansion for the partial count day was made accordingly.

RESULTS

The unexpanded counts were 44 chinook, 8,922 pink, 1,326 chum, 3,446 coho salmon and 1,222 Dolly Varden. Tables 1-5 show the hourly counts of each species. Expanded counts of 63 chinook, 13,034 pink, 1,859 chum, 4,349 coho salmon and 1,353 Dolly Varden are shown in Tables 6-10. Figure 3 shows cumulative expanded counts for each species by date. Figures 4-8 show graphs of both daily and cumulative fish passage for each species by date.

DISCUSSION

This was the first year the Nome River tower project has operated. A great deal of time and labor was required just to get the project functional. A site had to be selected and "land-use rights" acquired; new personnel were hired which required establishing new positions; motors, tents, equipment, and materials were purchased; tent platforms were constructed; and finally the counting tower, weir and flashpanel were installed. This was all done on fairly short notice which is the main reason why the project got such a late start. In the future, counting should begin by the third week in June and continue through late August, dependent of course on funding availability.

The project ran quite well this year. The site selection seemed to work out fine with only a couple drawbacks. Coastal flooding during one storm may have caused the water level to rise more than would be expected if the site were farther upstream, however the water level also dropped quite fast. Another problem which is probably typical of most coastal tundra rivers is that there is a constant breeze that ripples the water making counting slightly more difficult. I doubt that a site elsewhere on the river would greatly improve the condition. Otherwise, the location was very convenient being so close to town; the site marks the lower limit of chum salmon spawning; operations did not interfere with fishing activity at the mouth, but was still close enough to provide meaningful migration timing; and communications worked out well.

Since the project got such a late start, there were large portions of the salmon migration which were not counted. An example is where a peak chum aerial survey flown on July 19 counted 1,520 fish one week before the tower began counting. We do not have any data that can really be used for comparing aerial and tower counts on the Nome River yet, but the tower counts do show that a significant component of the 1993 chum return continued to enter the river for three weeks after the peak survey. This timing would suggest that if chum salmon were the primary species to be counted, the tower should be operated through at least the middle of August. If coho counts were also desired, the project should be extended through the end of August which would likely observe the bulk of the return. The Dolly Varden counts were only an afterthought and therefore started later in the project.

Escapement sampling of chum salmon is an important aspect of the project, but it was not necessary for the tower crew to collect these samples since samples were collected by another crew taking chum eggs for use in salmon restoration on the Nome River. The salmon restoration crew will likely be working on the Nome River in upcoming years and can more efficiently collect the samples. This sampling effort should be coordinated between the tower and restoration projects to ensure that it is conducted.

Objectives for the future should be: To conduct aerial surveys which could be compared with the tower counts for evaluating historical escapements; collecting escapement samples which may provide age data that could lead to production assessment information; and a few camp improvements should be made as time and money allow such as better counting lights and board-walks.

Table 1. Daily hourly chinook salmon migration past the Nome River counting tower, 1993.

DATE	HOUR 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	%
7/25	0	2	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	2	5
7/26	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5
7/27	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/28	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/29	0	0	4	0	0	0									0	0	0	2	0	0	0	0	0	0	6	14
7/30	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/31	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/01																									0	0
8/02	0	0	4	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	23
8/03	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/04	0	2	2	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	4	9
8/05	0	0	2	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	2	5
8/06	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/07	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/08																									0	0
8/09	0	0	0	−2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/10	0	0	2	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	2	5
8/11	0	0	0	0	2	0							0	0	0	0	0	0	0	0	0	0	0	0	2	5
8/12	0	0	0	2	0	0							0	0	0	0	0	0	0	0	0	0	0	0	2	5
8/13	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/14	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/15																									0	0
8/16	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
8/17	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/18	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/19	0	0	0	0	0	0							0	0	0	0	0	0	0						0	0
8/20																									0	0
8/21																									0	0
8/22	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	4	9
8/24	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/25	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/26	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/27	2	2	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	4	9
8/28	0	2	0	0	0	0							0	0	0	0	0	0	0	0	0	0	2	0	4	9
Total	2	8	14	0	4	0	8	0	0	0	0	0	0	0	0	0	0	2	2	0	2	0	2	0	44	100
%	5	18	32	0	9	0	18	0	0	0	0	0	0	0	0	0	0	5	5	0	5	0	5	0	100	

Table 2. Daily hourly chum salmon migration past the Nome River counting tower, 1993.

DATE	HOUR 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	%
7/25	0	6	8	0	0	0							0	0	0	0	0	16	0	0	0	0	−8	4	26	2
7/26	10	40	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0		0	0	58	4
7/27	2	36	42	14	−8	6							0	0	0	0	0	0	0	0	0	0	0	2	94	7
7/28	0	14	36	10	−8	2							0	0	0	0	0	0	0	0	0	0	0	2	56	4
7/29	16	8	2	0	0	0									0	0	0	0	0	0	0	0	0	18	44	3
7/30	0	14	2	2	0	0							0	0	0	0	0	0	0	0	0	0	0	0	18	1
7/31	6	0	2	0	6	2							0	0	0	0	−6	0	0	4	2	2	0	0	18	1
8/01																									0	0
8/02	14	202	40	6	4	6	0	−2	2	2	0	2	4	4	2	4	0	0	2	4	0	4	4	0	304	23
8/03	0	4	4	−2	0	0							2	0	0	0	0	0	0	0	0	0	0	4	12	1
8/04	18	4	10	4	2	0							0	0	0	10	0	4	6	4	8	0	4	4	78	6
8/05	18	2	68	6	0	−2							0	4	0	0	−2	0	0	0	0	0	4	0	98	7
8/06	2	86	52	6	−12	0							0	0	0	2	0	2	0	0	−2	2	0	12	150	11
8/07	22	24	22	2	0	−4							0	0	0	0	0	0	0	0	0	0	0	2	68	5
8/08																									0	0
8/09	0	0	56	30	−40	−4	0	0	0	0	−42	2	−22	−6	0	0	4	24	28	10	2	−2	0	46	86	6
8/10	2	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	4	0	6	0
8/11	0	0	0	0	0	0							8	0	0	0	0	0	−6	0	0	0	6	6	14	1
8/12	−2	4	0	0	−2	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/13	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	2	4	2	8	1
8/14	4	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	4	0
8/15																									0	0
8/16	12	18	22	0	0	0	0	0	0	0	0	−2	0	0	0	0	0	0	0	2	0	0	0	0	52	4
8/17	2	20	4	4	4	−4							0	0	0	0	0	0	0	0	4	0	16	0	50	4
8/18	2	10	2	0	0	2							0	0	0	0	0	2	−2	2	0	0	6	36	60	5
8/19	0	0	0	0	0	0							0	−4	0	0	−2	0	0						−6	−0
8/20	0	0	0	0	0	0																			0	0
8/21																									0	0
8/22	0	2	2	0	0	0							0	0	0	0	0	−2	−2	2	2	4	−2	0	6	0
8/23	0	0	0	−4	2	0	0	0	0	4	0	0	0	0	0	0	0	0	−2	0	2	0	0	2	4	0
8/24	0	2	2	0	0	2							0	−2	0	0	0	0	0	0	0	0	6	2	12	1
8/25	0	0	0	2	0	0							0	0	0	0	0	0	0	0	0	2	0	0	4	0
8/26	0	−2	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	−2	−0
8/27	0	−2	0	2	0	0							0	0	0	0	0	0	0	0	0	0	0	2	2	0
8/28	0	0	0	0	0	0							0	0	0	0	0	0	2	0	0	0	0	0	2	0
Total	128	492	376	82	−52	12	0	−2	2	6	−42	2	−8	−4	2	16	−6	46	28	28	18	14	44	144	1326	100
%	10	37	28	6	−4	1	0	−0	0	0	−3	0	−1	−0	0	1	−0	3	2	2	1	1	3	11	100	

Table 3. Daily hourly pink salmon migration past the Nome River counting tower, 1993.

DATE	HOUR 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	%
7/25	4	20	−14	−4	2	2							0	0	0	0	0	0	0	0	0	2	0	12	24	0
7/26	14	96	10	16	2	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	154	2
7/27	14	66	48	24	−10	−2							0	0	0	0	0	0	0	0	0	0	0	0	140	2
7/28	0	8	24	12	−10	2							0	0	0	0	0	0	0	0	0	0	2	52	90	1
7/29	168	564	130	2	−18	−8									0	0	0	0	0	0	0	0	0	352	1190	13
7/30	154	156	260	58	10	10							0	0	0	0	0	0	0	0	0	0	0	0	648	7
7/31	248	878	18	−8	−4	−12							4	0	0	0	−10	0	0	22	2	4	0	0	1142	13
8/01																									0	0
8/02	108	614	86	100	48	8	0	6	176	176	170	6	8	12	6	4	6	0	20	4	0	10	2	8	1578	18
8/03	30	10	10	4	0	0							2	0	0	6	6	−2	−2	0	−4	0	2	4	66	1
8/04	194	180	50	12	0	−4							0	2	0	150	0	82	160	40	96	−2	12	44	1016	11
8/05	12	24	184	18	4	−18							2	10	0	2	−2	0	0	4	2	2	2	0	246	3
8/06	28	92	40	2	−2	0							0	120	−2	0	0	0	0	8	4	2	6	−2	296	3
8/07	6	40	10	0	−6	−8							20	0	0	2	10	2	0	2	2	4	0	−2	82	1
8/08																									0	0
8/09	204	112	66	−4	−96	−30	−12	0	0	64	−46	32	−34	10	0	0	84	216	212	26	10	−2	0	42	854	10
8/10	32	4	30	4	−32	−10							0	0	0	4	−34	0	0	0	8	8	42	20	76	1
8/11	14	12	40	2	−14	−8							34	16	0	0	2	0	−16	8	−4	30	126	138	380	4
8/12	36	26	−2	4	−2	−4							−2	0	0	6	−8	0	0	0	0	0	0	0	54	1
8/13	14	54	4	8	−24	−12							−2	0	0	8	−4	4	4	4	0	38	30	34	160	2
8/14	154	20	8	0	0	0							4	2	0	0	0	0	0	8	0	4	0	6	206	2
8/15																									0	0
8/16	56	72	32	−2	−2	−32	0	0	0	0	0	2	0	0	0	2	2	2	2	26	−8	0	4	6	162	2
8/17	20	4	0	2	12	0							0	0	2	0	4	2	4	16	26	2	4	8	106	1
8/18	48	10	18	0	4	0							0	0	2	0	2	−2	20	14	0	0	28	38	182	2
8/19	8	2	0	20	0	0							−2	0	0	0	0	0	0						28	0
8/20	0	0	0	0	0	0																			0	0
8/21																									0	0
8/22	60	4	0	0	0	0							−6	−8	−4	−2	−6	0	−2	0	0	8	6	−4	46	1
8/23	14	−4	−2	−4	0	0	0	−4	6	−6	−10	−8	0	−4	0	−2	2	4	−2	0	−2	2	0	4	−16	−0
8/24	−4	0	0	−2	2	2							−4	0	0	0	0	0	0	0	6	0	6	−6	0	0
8/25	4	0	−4	0	2	0							0	0	0	0	−2	0	0	2	0	0	0	0	2	0
8/26	2	0	0	0	0	0							0	0	0	0	2	4	0	2	2	0	0	−2	10	0
8/27	0	0	0	2	0	0							0	0	0	−2	0	0	0	0	0	2	0	0	2	0
8/28	0	0	0	0	0	0							0	0	0	0	0	0	0	0	−2	0	0	0	−2	−0
Total	1642	3064	1046	266	−134	−116	−12	2	182	234	114	32	24	160	4	178	54	312	400	186	138	114	280	752	8922	100
%	18	34	12	3	−2	−1	−0	0	2	3	1	0	0	2	0	2	1	3	4	2	2	1	3	8	100	

Table 4. Daily hourly coho salmon migration past the Nome River counting tower, 1993.

DATE	HOUR 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	%
7/25																									0	0
7/26																									0	0
7/27	4	24	18	10	0	4							0	0	0	2	0	0	0	0	0	0	0	0	62	2
7/28	0	0	8	10	−8	−2							0	0	0	0	0	0	0	0	0	0	0	0	8	0
7/29	4	30	14	2	0	0							0	0	0	0	0	0	0	0	0	0	0	6	56	2
7/30	0	2	22	10	10	0							0	0	0	0	0	2	0	0	0	0	0	0	46	1
7/31	0	18	4	0	8	−4							0	0	0	0	0	0	0	0	0	0	0	0	26	1
8/01																									0	0
8/02	28	240	26	10	12	4	6	0	2	0	0	0	2	2	0	0	0	2	2	4	0	0	0	0	340	10
8/03	2	0	4	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	6	0
8/04	22	24	12	18	20	0							0	0	0	0	0	0	0	0	0	8	0	20	124	4
8/05	16	44	280	−2	2	−2							0	0	0	0	0	0	0	0	0	2	24	0	364	11
8/06	50	154	46	2	−2	0							0	12	2	0	0	0	0	8	4	0	8	0	284	8
8/07	20	6	8	0	0	0							16	0	0	0	0	0	0	2	2	0	0	2	56	2
8/08																									0	0
8/09	128	80	26	16	0	−6	−4	0	0	34	0	2	−6	18	0	2	150	346	284	10	0	0	0	76	1156	34
8/10	16	8	52	12	−24	4							0	0	0	0	−2	0	0	0	0	2	10	4	82	2
8/11	14	12	50	0	−6	−4							8	0	0	0	0	0	0	0	0	0	8	2	84	2
8/12	0	12	0	2	−4	0							0	0	0	0	0	0	0	0	0	0	0	0	10	0
8/13	0	4	4	0	2	0							−2	0	0	0	−2	0	0	0	0	0	0	0	6	0
8/14	10	4	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	14	0
8/15																									0	0
8/16	10	30	26	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	74	2
8/17	4	16	0	2	6	0							0	0	0	0	0	0	0	0	0	0	6	10	44	1
8/18	4	6	10	0	4	0							0	0	0	0	0	0	0	0	8	0	0	0	32	1
8/19	0	8	0	0	4	2							0	−6	0	0	0	0	0						8	0
8/20																									0	0
8/21																									0	0
8/22	50	12	6	−2	0	0							0	0	0	0	2	0	2	0	2	2	24	4	102	3
8/23	0	2	0	0	2	6	−2	−4	0	0	0	0	0	0	0	0	0	0	0	0	0	24	10	4	42	1
8/24	6	0	0	8	2	0							0	0	0	0	0	0	0	0	0	0	4	0	20	1
8/25	6	14	6	2	0	2							14	0	0	0	−2	0	0	0	0	2	0	4	48	1
8/26	0	6	4	0	0	0							0	0	0	0	0	0	12	4	4	2	0	10	42	1
8/27	4	10	4	2	0	0							0	0	16	0	0	0	0	0	2	32	50	110	230	7
8/28	24	30	6	−10	0	0							0	0	0	0	0	0	0	0	8	6	14	2	80	2
Total	422	796	636	96	28	4	0	−4	2	34	0	2	32	26	18	4	146	350	300	32	30	80	158	254	3446	100
%	12	23	18	3	1	0	0	−0	0	1	0	0	1	1	1	0	4	10	9	1	1	2	5	7	100	

Table 5. Daily hourly Dolly Varden migration past the Nome River counting tower, 1993.

DATE	HOUR 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	%
7/25	Dolly Varden not counted.																									
7/26																										
7/27																										
7/28																										
7/29																										
7/30																										
7/31																										
8/01																										
8/02																										
8/03																										
8/04																										
8/05	0	0	0	0	0	0							0	2	4	2	4	0	0	4	2	0	0	0	18	1
8/06	0	4	4	2	0	0							0	2	0	0	0	2	4	4	2	4	2	0	30	2
8/07	2	0	4	−2	2	0							8	0	0	0	0	2	0	0	2	0	0	2	20	2
8/08																									0	0
8/09	28	16	4	−4	0	0	−8	0	0	0	0	2	4	0	0	0	8	22	16	4	2	0	0	0	94	8
8/10	16	4	0	8	−20	−6							0	0	0	0	0	0	0	0	0	4	28	54	88	7
8/11	14	6	8	−6	−10	−6							0	0	0	0	0	0	0	0	0	2	2	56	66	5
8/12	96	8	4	10	0	−8							0	2	0	0	0	0	0	0	0	0	0	0	112	9
8/13	0	28	8	10	−14	−2							0	0	0	0	0	0	0	0	0	2	10	8	50	4
8/14	36	16	0	0	0	0							0	0	0	0	0	0	0	0	0	0	2	6	60	5
8/15																									0	0
8/16	16	26	16	−8	−2	−32	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	0	8	10	40	3
8/17	0	0	4	−2	0	6							0	0	0	0	2	0	0	−2	4	10	6	2	30	2
8/18	64	22	−10	−12	6	0							0	0	0	0	0	0	2	6	0	0	0	0	78	6
8/19	8	0	0	0	16	0							10	0	0	0	0	0	0	0					34	3
8/20																									0	0
8/21																									0	0
8/22	24	36	10	2	0	0							0	−2	10	0	6	0	0	0	−4	4	0	−4	82	7
8/23	38	28	14	8	2	2	−2	−6	−4	0	0	0	0	0	0	0	0	0	0	0	10	0	0	8	98	8
8/24	−8	8	10	4	4	2							0	0	0	0	2	2	2	0	0	0	4	12	42	3
8/25	68	0	8	0	2	0							0	0	0	0	0	0	0	0	0	4	0	4	86	7
8/26	16	38	4	0	0	0							0	0	0	0	0	0	0	0	0	−2	0	−2	54	4
8/27	4	10	6	4	0	0							6	0	0	0	0	0	0	0	0	0	0	0	30	2
8/28	76	76	−20	−22	0	0							0	0	0	0	0	0	0	0	0	0	0	0	110	9
Total	498	326	74	−8	−14	−44	−10	−6	−4	0	0	2	28	4	14	2	22	28	24	18	22	28	62	156	1222	100
%	41	27	6	−1	−1	−4	−1	−0	−0	0	0	0	2	0	1	0	2	2	2	1	2	2	5	13	100	

Table 6. Expanded daily hourly chinook salmon migration past the Nome River counting tower, 1993.[a]

DATE	HOUR 0000	0100	0200	0300	0400	0500	6–11	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	TOTAL	%
7/25	0	2	0	0	0	0	$2	0	0	0	0	0	0	0	0	0	0	0	0	4	6
7/26	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	3
7/27	0	0	0	0	0	0	$2	0	0	0	0	0	0	0	0	0	0	0	0	2	3
7/28	0	0	0	0	0	0	$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/29	0	0	4	0	0	0	$0	$0	$0	0	0	0	2	0	0	0	0	0	0	6	9
7/30	0	0	0	0	0	0	$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/31	0	0	0	0	0	0	$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/01	$0	$0	$2	$0	$0	$0	$3	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	5	8
8/02	0	0	4	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	10	16
8/03	0	0	0	0	0	0	$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/04	0	2	2	0	0	0	$6	0	0	0	0	0	0	0	0	0	0	0	0	10	16
8/05	0	0	2	0	0	0	$3	0	0	0	0	0	0	0	0	0	0	0	0	5	8
8/06	0	0	0	0	0	0	$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/07	0	0	0	0	0	0	$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/08	$0	$0	$0	($1)	$1	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0	0
8/09	0	0	0	−2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/10	0	0	2	0	0	0	$0	0	0	0	0	0	0	0	0	0	0	0	0	2	3
8/11	0	0	0	0	2	0	$0	0	0	0	0	0	0	0	0	0	0	0	0	2	3
8/12	0	0	0	2	0	0	$0	0	0	0	0	0	0	0	0	0	0	0	0	2	3
8/13	0	0	0	0	0	0	$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/14	0	0	0	0	0	0	$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/15	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0	0
8/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/17	0	0	0	0	0	0	$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/18	0	0	0	0	0	0	$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/19	0	0	0	0	0	0	$0	0	0	0	0	0	0	0	$0	$0	$0	$0	$0	0	0
8/20	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0	0
8/21	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1	$0	$0	$0	$0	$0	1	1
8/22	0	0	0	0	0	0	$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/23	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	4	6
8/24	0	0	0	0	0	0	$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/25	0	0	0	0	0	0	$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/26	0	0	0	0	0	0	$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/27	2	2	0	0	0	0	$0	0	0	0	0	0	0	0	0	0	0	0	0	4	6
8/28	0	2	0	0	0	0	$0	0	0	0	0	0	0	0	0	0	0	2	0	4	6
Total	2	8	16	−1	5	0	24	0	0	0	0	0	2	3	0	3	0	2	0	63	100
%	3	13	25	−2	8	0	38	0	0	0	0	0	3	4	0	4	0	3	0	100	

[a] $ indicates expanded hourly counts.

Table 7. Expanded daily hourly chum salmon migration past the Nome River counting tower, 1993.[a]

DATE	HOUR 0000	0100	0200	0300	0400	0500	6–11	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	TOTAL	%
7/25	0	6	8	0	0	0	$0	0	0	0	0	0	16	0	0	0	0	−8	4	26	2
7/26	10	40	0	0	0	6	0	0	0	0	0	0	0	2	0	0		0	0	58	4
7/27	2	36	42	14	−8	6	$0	0	0	0	0	0	0	0	0	0	0	0	2	94	6
7/28	0	14	36	10	−8	2	$0	0	0	0	0	0	0	0	0	0	0	0	2	56	4
7/29	16	8	2	0	0	0	$0	$0	$0	0	0	0	0	0	0	0	0	0	18	44	3
7/30	0	14	2	2	0	0	$0	0	0	0	0	0	0	0	0	0	0	0	0	18	1
7/31	6	0	2	0	6	2	$0	0	0	0	0	−6	0	0	4	2	2	0	0	18	1
8/01	$10	$101	$21	$3	$5	$4	$2	$2	$2	$1	$2	($3)	$0	$1	$4	$1	$3	$2	$0	161	10
8/02	14	202	40	6	4	6	4	4	4	2	4	0	0	2	4	0	4	4	0	304	19
8/03	0	4	4	−2	0	0	$0	2	0	0	0	0	0	0	0	0	0	0	4	12	1
8/04	18	4	10	4	2	0	$1	0	0	0	10	0	4	6	4	8	0	4	4	79	5
8/05	18	2	68	6	0	−2	$1	0	4	0	0	−2	0	0	0	0	0	4	0	99	6
8/06	2	86	52	6	−12	0	($48)	0	0	0	2	0	2	0	0	−2	2	0	12	102	7
8/07	22	24	22	2	0	−4	($22)	0	0	0	0	0	0	0	0	0	0	0	2	46	3
8/08	$11	$12	$39	$16	($20)	($4)	($31)	($11)	($3)	$0	$0	$2	$12	$14	$5	$1	($1)	$0	$24	66	4
8/09	0	0	56	30	−40	−4	−40	−22	−6	0	0	4	24	28	10	2	−2	0	46	86	5
8/10	2	0	0	0	0	0	($2)	0	0	0	0	0	0	0	0	0	0	4	0	4	0
8/11	0	0	0	0	0	0	($4)	8	0	0	0	0	0	−6	0	0	0	6	6	10	1
8/12	−2	4	0	0	−2	0	$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/13	0	0	0	0	0	0	($0)	0	0	0	0	0	0	0	0	0	2	4	2	8	0
8/14	4	0	0	0	0	0	($0)	0	0	0	0	0	0	0	0	0	0	0	0	4	0
8/15	$8	$9	$11	$0	$0	$0	($1)	$0	$0	$0	$0	$0	$0	$0	$1	$0	$0	$0	$0	28	2
8/16	12	18	22	0	0	0	−2	0	0	0	0	0	0	0	2	0	0	0	0	52	3
8/17	2	20	4	4	4	−4	($2)	0	0	0	0	0	0	0	0	4	0	16	0	48	3
8/18	2	10	2	0	0	2	($2)	0	0	0	0	0	2	−2	2	0	0	6	36	58	4
8/19	0	0	0	0	0	0	($0)	0	−4	0	0	−2	0	0	$1	$1	$1	$4	$10	12	1
8/20	$1	$3	$1	($0)	$0	$1	$0	$0	($1)	$0	$0	($1)	($0)	($1)	$2	$1	$2	$3	$14	23	1
8/21	$0	$1	$1	($1)	$1	$0	$1	$0	($1)	$0	$0	($1)	($1)	($1)	$1	$1	$1	$3	$11	16	1
8/22	0	2	2	0	0	0	$2	0	0	0	0	0	−2	−2	2	2	4	−2	0	8	1
8/23	0	0	0	−4	2	0	4	0	0	0	0	0	0	−2	0	2	0	0	2	4	0
8/24	0	2	2	0	0	2	$2	0	−2	0	0	0	0	0	0	0	0	6	2	14	1
8/25	0	0	0	2	0	0	$1	0	0	0	0	0	0	0	0	0	2	0	0	5	0
8/26	0	−2	0	0	0	0	$0	0	0	0	0	0	0	0	0	0	0	0	0	−2	−0
8/27	0	−2	0	2	0	0	$0	0	0	0	0	0	0	0	0	0	0	0	2	2	0
8/28	0	0	0	0	0	0	$0	0	0	0	0	0	0	2	0	0	0	0	0	2	0
Total	158	619	449	100	−66	13	−135	−17	−8	3	18	−8	57	40	42	24	20	56	203	1566	100
%	10	39	29	6	−4	1	−9	−1	−0	0	1	−1	4	3	3	2	1	4	13	100	

[a] $ indicates expanded hourly counts.

Table 8. Expanded daily hourly pink salmon migration past the Nome River counting tower, 1993.[a]

DATE	HOUR 0000	0100	0200	0300	0400	0500	6–11	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	TOTAL	%
7/25	4	20	−14	−4	2	2	$0	0	0	0	0	0	0	0	0	0	2	0	12	24	0
7/26	14	96	10	16	2	8	0	0	0	0	0	0	0	0	0	0	0	8	0	154	1
7/27	14	66	48	24	−10	−2	$0	0	0	0	0	0	0	0	0	0	0	0	0	140	1
7/28	0	8	24	12	−10	2	$0	0	0	0	0	0	0	0	0	0	0	2	52	90	1
7/29	168	564	130	2	−18	−8	$0	0	0	0	0	0	0	0	0	0	0	0	352	1190	9
7/30	154	156	260	58	10	10	$328	0	0	0	0	0	0	0	0	0	0	0	0	976	7
7/31	248	878	18	−8	−4	−12	$578	4	0	0	0	−10	0	0	22	2	4	0	0	1720	13
8/01	$178	$746	$52	$46	$22	($2)	$553	$6	$6	$3	$2	($2)	$0	$10	$13	$1	$7	$1	$4	1646	13
8/02	108	614	86	100	48	8	528	8	12	6	4	6	0	20	4	0	10	2	8	1572	12
8/03	30	10	10	4	0	0	$33	2	0	0	6	6	−2	−2	0	−4	0	2	4	99	1
8/04	194	180	50	12	0	−4	$514	0	2	0	150	0	82	160	40	96	−2	12	44	1530	12
8/05	12	24	184	18	4	−18	$124	2	10	0	2	−2	0	0	4	2	2	2	0	370	3
8/06	28	92	40	2	−2	0	$14	0	120	−2	0	0	0	0	8	4	2	6	−2	310	2
8/07	6	40	10	0	−6	−8	$4	20	0	0	2	10	2	0	2	2	4	0	−2	86	1
8/08	$105	$76	$38	($2)	($51)	($19)	$21	($7)	$5	$0	$1	$47	$109	$106	$14	$6	$1	$0	$20	470	4
8/09	204	112	66	−4	−96	−30	38	−34	10	0	0	84	216	212	26	10	−2	0	42	854	7
8/10	32	4	30	4	−32	−10	$4	0	0	0	4	−34	0	0	0	8	8	42	20	80	1
8/11	14	12	40	2	−14	−8	$18	34	16	0	0	2	0	−16	8	−4	30	126	138	398	3
8/12	36	26	−2	4	−2	−4	$3	−2	0	0	6	−8	0	0	0	0	0	0	0	57	0
8/13	14	54	4	8	−24	−12	$2	−2	0	0	8	−4	4	4	4	0	38	30	34	162	1
8/14	154	20	8	0	0	0	$3	4	2	0	0	0	0	0	8	0	4	0	6	209	2
8/15	$105	$46	$20	($1)	($1)	($16)	$2	$2	$1	$0	$1	$1	$1	$1	$17	($4)	$2	$2	$6	185	1
8/16	56	72	32	−2	−2	−32	2	0	0	0	2	2	2	2	26	−8	0	4	6	162	1
8/17	20	4	0	2	12	0	$1	0	0	2	0	4	2	4	16	26	2	4	8	107	1
8/18	48	10	18	0	4	0	$2	0	0	2	0	2	−2	20	14	0	0	28	38	184	1
8/19	8	2	0	20	0	0	$1	−2	0	0	0	0	0	0	$12	$3	$3	$11	$12	70	1
8/20	$36	$4	$5	$6	$1	$0	$2	($3)	($3)	($1)	($1)	($1)	($0)	$5	$8	$1	$3	$14	$14	91	1
8/21	$30	$2	$1	$6	$0	$0	$1	($3)	($4)	($1)	($1)	($1)	$1	$0	$6	$1	$3	$11	$10	60	0
8/22	60	4	0	0	0	0	($5)	−6	−8	−4	−2	−6	0	−2	0	0	8	6	−4	41	0
8/23	14	−4	−2	−4	0	0	−22	0	−4	0	−2	2	4	−2	0	−2	2	0	4	−16	−0
8/24	−4	0	0	−2	2	2	$2	−4	0	0	0	0	0	0	0	6	0	6	−6	2	0
8/25	4	0	−4	0	2	0	$1	0	0	0	0	−2	0	0	2	0	0	0	0	3	0
8/26	2	0	0	0	0	0	$0	0	0	0	0	2	4	0	2	2	0	0	−2	10	0
8/27	0	0	0	2	0	0	$0	0	0	0	−2	0	0	0	0	0	2	0	0	2	0
8/28	0	0	0	0	0	0	$0	0	0	0	0	0	0	0	0	−2	0	0	0	−2	−0
Total	2096	3938	1161	321	−163	−153	2750	20	165	5	180	97	423	522	255	147	133	319	817	13034	100
%	16	30	9	2	−1	−1	21	0	1	0	1	1	3	4	2	1	1	2	6	100	

[a] $ indicates expanded hourly counts.

Table 9. Expanded daily hourly coho salmon migration past the Nome River counting tower, 1993.[a]

DATE	HOUR 0000	0100	0200	0300	0400	0500	6–11	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	TOTAL	%
7/25	0	0	0	0	0	0	$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/27	4	24	18	10	0	4	$0	0	0	0	2	0	0	0	0	0	0	0	0	62	1
7/28	0	0	8	10	−8	−2	$0	0	0	0	0	0	0	0	0	0	0	0	0	8	0
7/29	4	30	14	2	0	0	$0	$0	$0	0	0	0	0	0	0	0	0	0	6	56	1
7/30	0	2	22	10	10	0	$1	0	0	0	0	0	2	0	0	0	0	0	0	47	1
7/31	0	18	4	0	8	−4	$1	0	0	0	0	0	0	0	0	0	0	0	0	27	1
8/01	$14	$129	$15	$5	$10	$0	$4	$1	$1	$0	$0	$0	$1	$1	$2	$0	$0	$0	$0	183	4
8/02	28	240	26	10	12	4	8	2	2	0	0	0	2	2	4	0	0	0	0	340	8
8/03	2	0	4	0	0	0	$0	0	0	0	0	0	0	0	0	0	0	0	0	6	0
8/04	22	24	12	18	20	0	$3	0	0	0	0	0	0	0	0	0	8	0	20	127	3
8/05	16	44	280	−2	2	−2	$9	0	0	0	0	0	0	0	0	0	2	24	0	373	9
8/06	50	154	46	2	−2	0	$8	0	12	2	0	0	0	0	8	4	0	8	0	292	7
8/07	20	6	8	0	0	0	$2	16	0	0	0	0	0	0	2	2	0	0	2	58	1
8/08	$74	$43	$17	$8	$0	($3)	$17	$5	$9	$0	$1	$75	$173	$142	$6	$1	$0	$0	$39	607	14
8/09	128	80	26	16	0	−6	32	−6	18	0	2	150	346	284	10	0	0	0	76	1156	27
8/10	16	8	52	12	−24	4	$2	0	0	0	0	−2	0	0	0	0	2	10	4	84	2
8/11	14	12	50	0	−6	−4	$2	8	0	0	0	0	0	0	0	0	0	8	2	86	2
8/12	0	12	0	2	−4	0	$0	0	0	0	0	0	0	0	0	0	0	0	0	10	0
8/13	0	4	4	0	2	0	$0	−2	0	0	0	−2	0	0	0	0	0	0	0	6	0
8/14	10	4	0	0	0	0	$0	0	0	0	0	0	0	0	0	0	0	0	0	14	0
8/15	$10	$17	$13	$2	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2	$0	$0	$0	$0	44	1
8/16	10	30	26	4	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	74	2
8/17	4	16	0	2	6	0	$0	0	0	0	0	0	0	0	0	0	0	6	10	44	1
8/18	4	6	10	0	4	0	$0	0	0	0	0	0	0	0	0	8	0	0	0	32	1
8/19	0	8	0	0	4	2	$0	0	−6	0	0	0	0	0	$1	$3	$2	$8	$3	24	1
8/20	$18	$8	$5	($1)	$3	$1	($7)	$0	($2)	$0	$0	$1	$0	$1	$0	$4	$2	$10	$2	46	1
8/21	$17	$8	$3	($1)	$2	$2	($6)	$0	($2)	$0	$0	$1	$0	$1	$0	$3	$5	$9	$2	44	1
8/22	50	12	6	−2	0	0	($13)	0	0	0	0	2	0	2	0	2	2	24	4	89	2
8/23	0	2	0	0	2	6	−6	0	0	0	0	0	0	0	0	0	24	10	4	42	1
8/24	6	0	0	8	2	0	($3)	0	0	0	0	0	0	0	0	0	0	4	0	18	0
8/25	6	14	6	2	0	2	($6)	14	0	0	0	−2	0	0	0	0	2	0	4	42	1
8/26	0	6	4	0	0	0	($5)	0	0	0	0	0	0	12	4	4	2	0	10	37	1
8/27	4	10	4	2	0	0	($29)	0	0	16	0	0	0	0	0	2	32	50	110	201	5
8/28	24	30	6	−10	0	0	($10)	0	0	0	0	0	0	0	0	8	6	14	2	70	2
Total	555	1001	688	110	43	4	5	38	32	18	5	222	524	444	43	40	89	186	301	4349	100
%	13	23	16	3	1	0	0	1	1	0	0	5	12	10	1	1	2	4	7	100	

[a] $ indicates expanded hourly counts.

Table 10. Expanded daily hourly Dolly Varden migration past the Nome River counting tower, 1993.[a]

DATE	HOUR 0000	0100	0200	0300	0400	0500	6–11	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	TOTAL	%
7/25	Dolly Varden not counted.																				
7/26																					
7/27																					
7/28																					
7/29																					
7/30																					
7/31																					
8/01																					
8/02																					
8/03																					
8/04																					
8/05	0	0	0	0	0	0	($1)	0	2	4	2	4	0	0	4	2	0	0	0	17	1
8/06	0	4	4	2	0	0	($2)	0	2	0	0	0	2	4	4	2	4	2	0	28	2
8/07	2	0	4	−2	2	0	($1)	8	0	0	0	0	2	0	0	2	0	0	2	19	1
8/08	$15	$8	$4	($3)	$1	$0	($4)	$6	$0	$0	$0	$4	$12	$8	$2	$2	$0	$0	$1	56	4
8/09	28	16	4	−4	0	0	−6	4	0	0	0	8	22	16	4	2	0	0	0	94	7
8/10	16	4	0	8	−20	−6	($5)	0	0	0	0	0	0	0	0	0	4	28	54	83	6
8/11	14	6	8	−6	−10	−6	($4)	0	0	0	0	0	0	0	0	0	2	2	56	62	5
8/12	96	8	4	10	0	−8	($7)	0	2	0	0	0	0	0	0	0	0	0	0	105	8
8/13	0	28	8	10	−14	−2	$0	0	0	0	0	0	0	0	0	0	2	10	8	50	4
8/14	36	16	0	0	0	0	$0	0	0	0	0	0	0	0	0	0	0	2	6	60	4
8/15	$26	$21	$8	($4)	($1)	($16)	$0	$0	$0	$0	$0	$0	$0	$0	$1	$2	$0	$5	$8	0	0
8/16	16	26	16	−8	−2	−32	0	0	0	0	0	0	0	0	2	4	0	8	10	40	3
8/17	0	0	4	−2	0	6	$0	0	0	0	0	2	0	0	−2	4	10	6	2	30	2
8/18	64	22	−10	−12	6	0	$0	0	0	0	0	0	0	2	6	0	0	0	0	78	6
8/19	8	0	0	0	16	0	$0	10	0	0	0	0	0	0	0	$1	$3	$3	$2	42	3
8/20	$30	$20	$2	($2)	$7	$0	($8)	$3	($1)	$3	$0	$2	$0	$1	$2	($1)	$2	$1	$0	62	5
8/21	$25	$21	$6	$2	$6	$1	($8)	$3	($1)	$3	$0	$2	$0	$0	$0	$1	$2	$1	$3	68	5
8/22	24	36	10	2	0	0	($9)	0	−2	10	0	6	0	0	0	−4	4	0	−4	73	5
8/23	38	28	14	8	2	2	−12	0	0	0	0	0	0	0	0	10	0	0	8	98	7
8/24	−8	8	10	4	4	2	($5)	0	0	0	0	2	2	2	0	0	0	4	12	37	3
8/25	68	0	8	0	2	0	($9)	0	0	0	0	0	0	0	0	0	4	0	4	77	6
8/26	16	38	4	0	0	0	($6)	0	0	0	0	0	0	0	0	0	−2	0	−2	48	4
8/27	4	10	6	4	0	0	($3)	6	0	0	0	0	0	0	0	0	0	0	0	27	2
8/28	76	76	−20	−22	0	0	($12)	0	0	0	0	0	0	0	0	0	0	0	0	98	7
Total	594	396	94	−15	−1	−59	−102	41	3	21	2	30	40	33	23	27	35	72	170	1353	100
%	44	29	7	−1	−0	−4	−8	3	0	2	0	2	3	2	2	2	3	5	13	104	

[a] $ indicates expanded hourly counts.

Table 11. Nome River counting tower climatological and stream observations, 1993.[a]

DATE	AIR TEMP (C)	WATER TEMP (C)	% CLOUD COVER	WATER GAUGE (in.)	WATER VISIBILITY
7/25	28	14	0	27.5	good
7/26	25	14	60	27.5	poor
7/27	21	14	100	27.5	good
7/28	20	13	100	27.5	good
7/29	15	12	100	27.7	good
7/30	15	12	100	27.5	good
7/31	13	10	100	27.7	good
8/01	Day Off				
8/02	12	10	100	33.5	fair
8/03	13	10	100	31.2	fair
8/04	20	12	75	31.2	good
8/05	19	12	75	30.0	good
8/06	16	12	90	29.2	good
8/07	13	10	100	29.5	fair
8/08	Day Off				
8/09	20	11	60	29.7	good
8/10	23	13	40	28.2	good
8/11	26	12	40	28.2	good
8/12	20	12	55	27.7	fair
8/13	13	3	50	28.2	good
8/14	10	7	85	28.5	poor
8/15	Day Off				
8/16	10	8	100	30.5	poor
8/17	11	8	20	29.0	good
8/18	11	9	100	30.5	poor
8/19	12	9	100	39.2	unacceptable
8/20	Flooded Out				unacceptable
8/21	11.0	8	70.0	36.0	fair
8/22	10	7	50	34.5	fair
8/23	17	6	0	32.5	good
8/24	15.0	8.0	0.0	30.0	good
8/25	17	7	0	30.0	good
8/26	15.0	8.0	80.0	30.0	good
8/27	18.0	10.0	40.0	30.0	good
8/28	14.0	9.0	80.0	28.0	good

[a] Observations were made maily at 1200 hours.

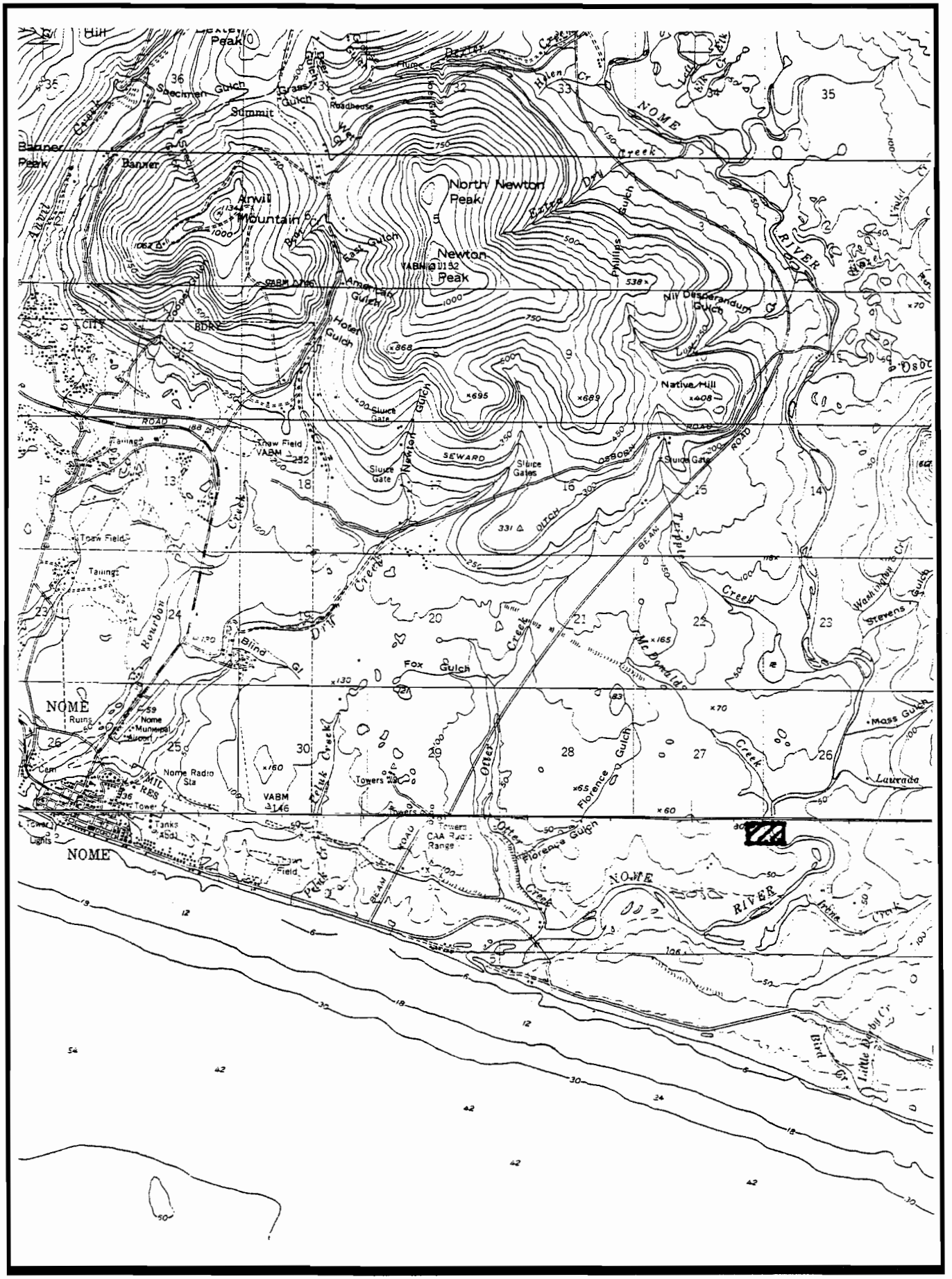


Figure 1. Area location map of the Nome River counting tower project site, Norton Sound, 1993.

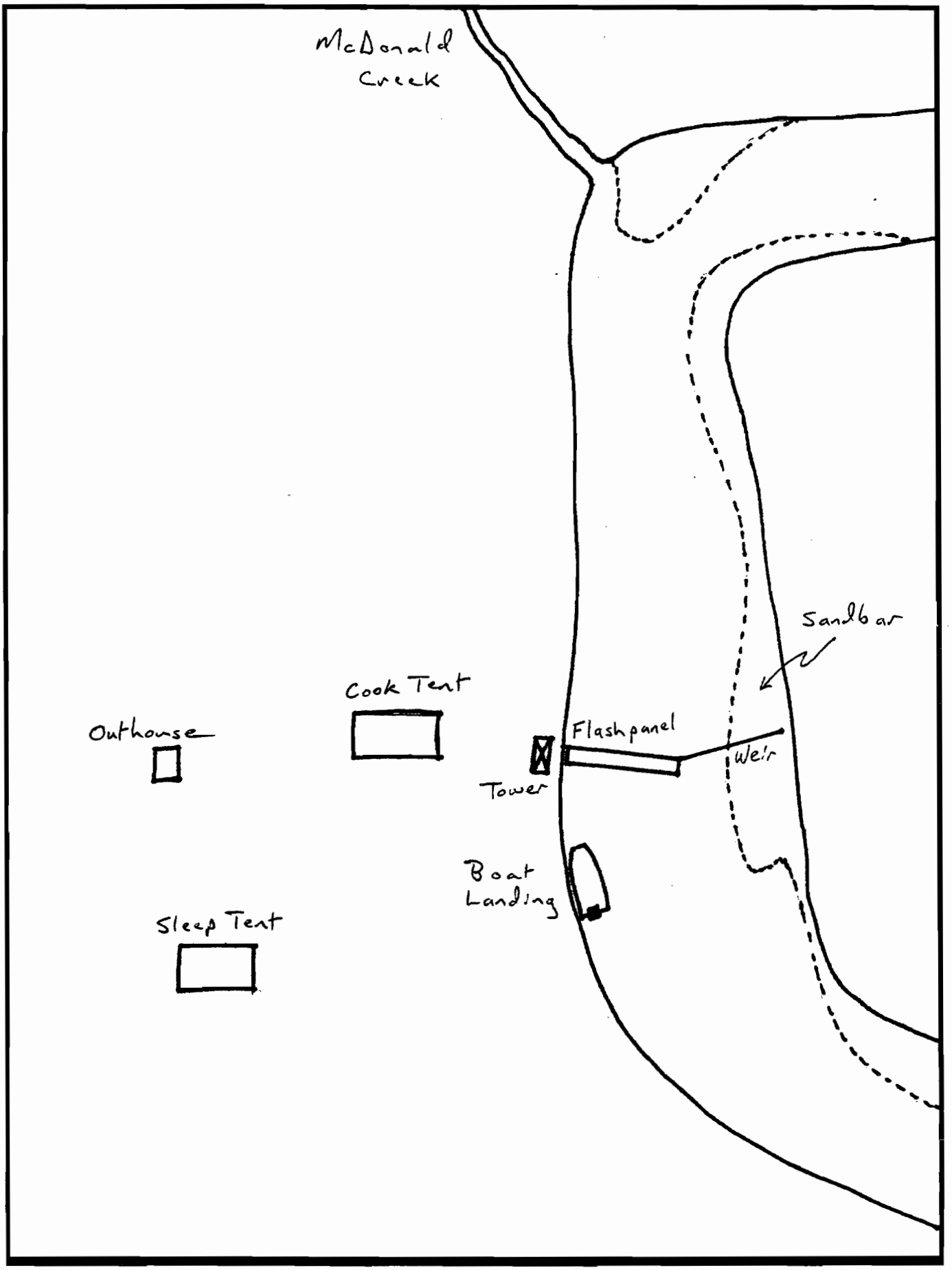


Figure 2. Physical layout map of the Nome River salmon counting tower project site, Norton Sound, 1993.

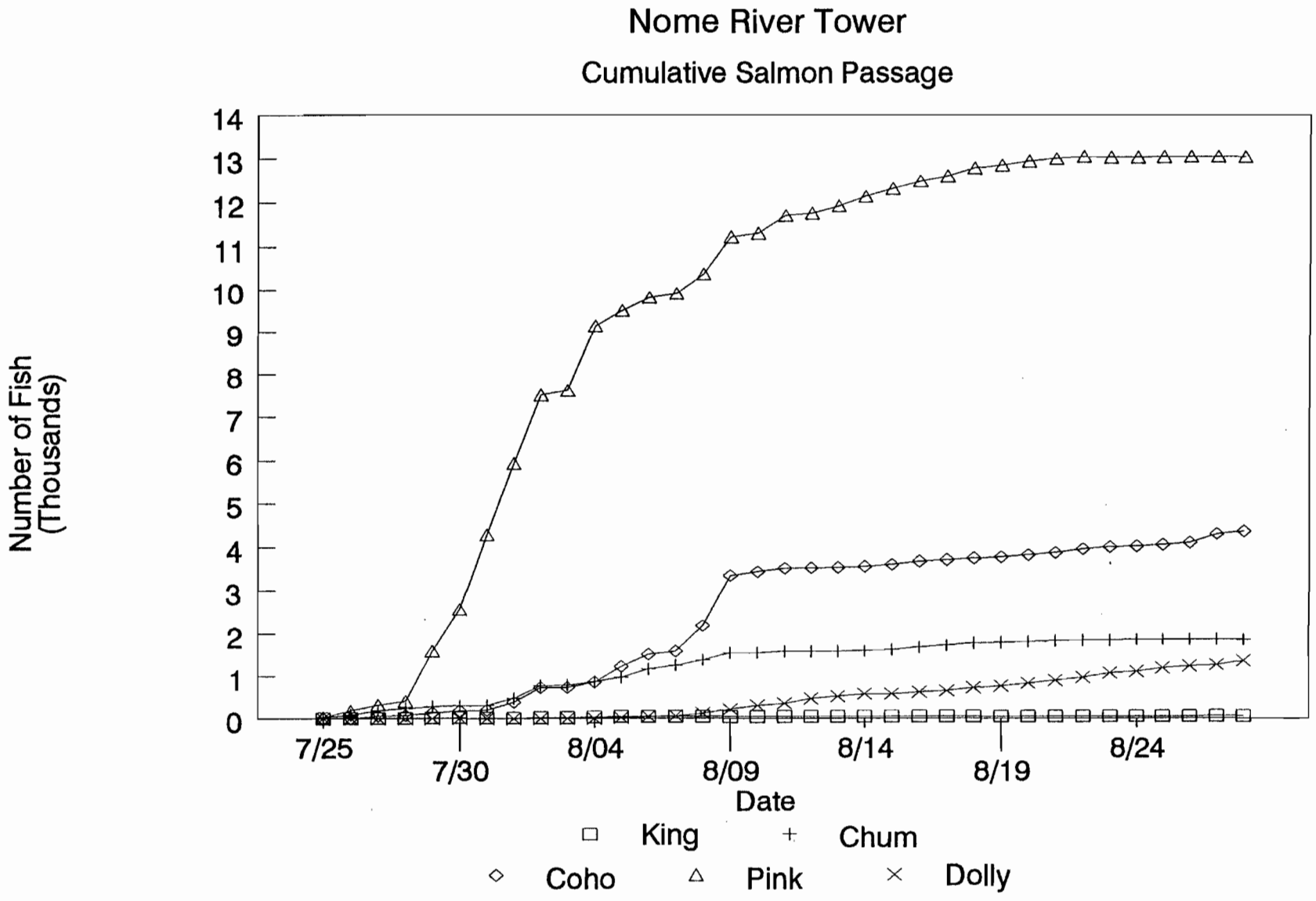


Figure 3. Nome River counting tower salmon passage timing and magnitude, Norton Sound, 1993.

Nome River Tower Chinook Counts

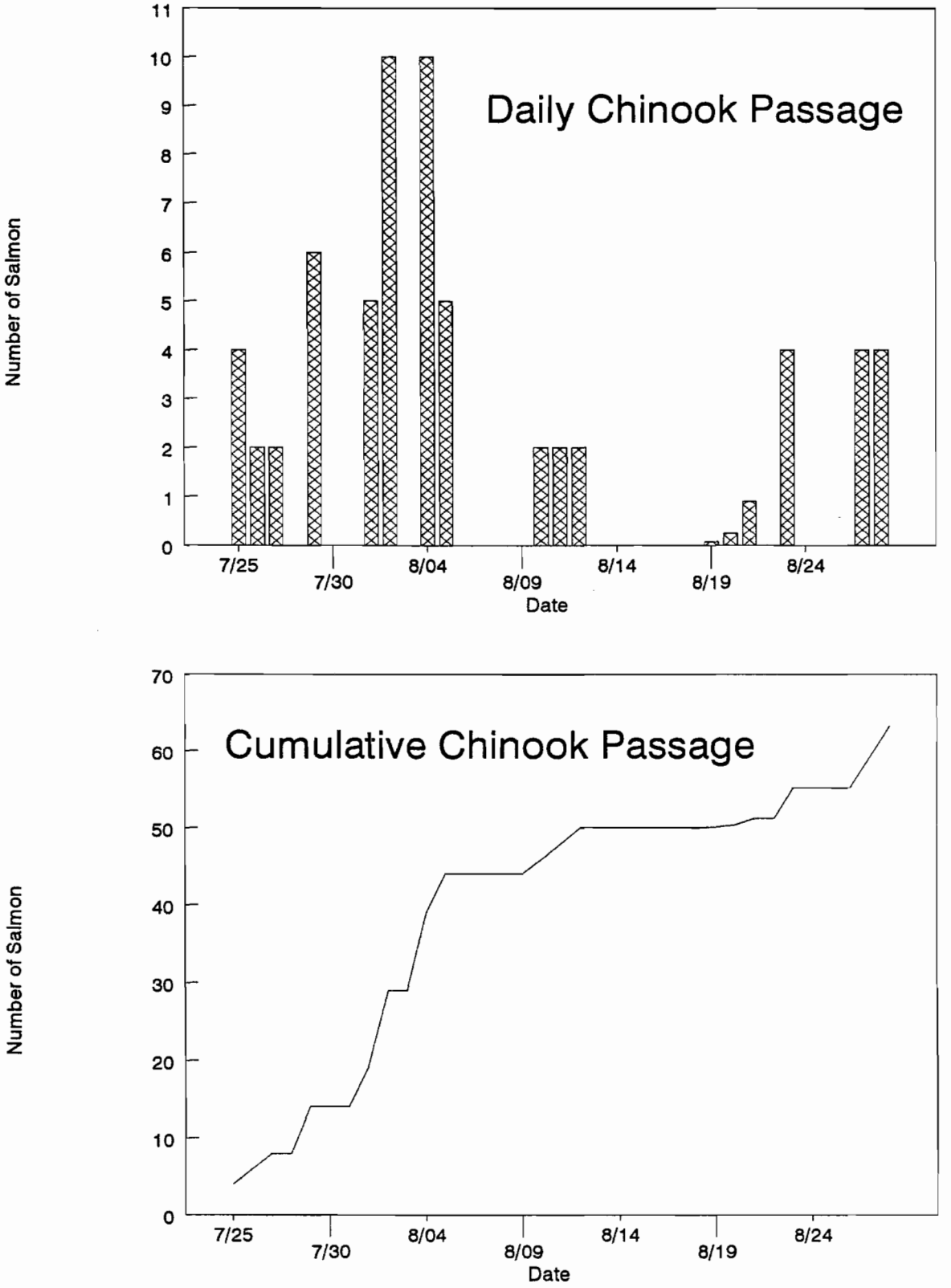


Figure 4. Nome River counting tower chinook salmon daily and cumulative passages, Norton Sound, 1993.

Nome River Tower Chum Count

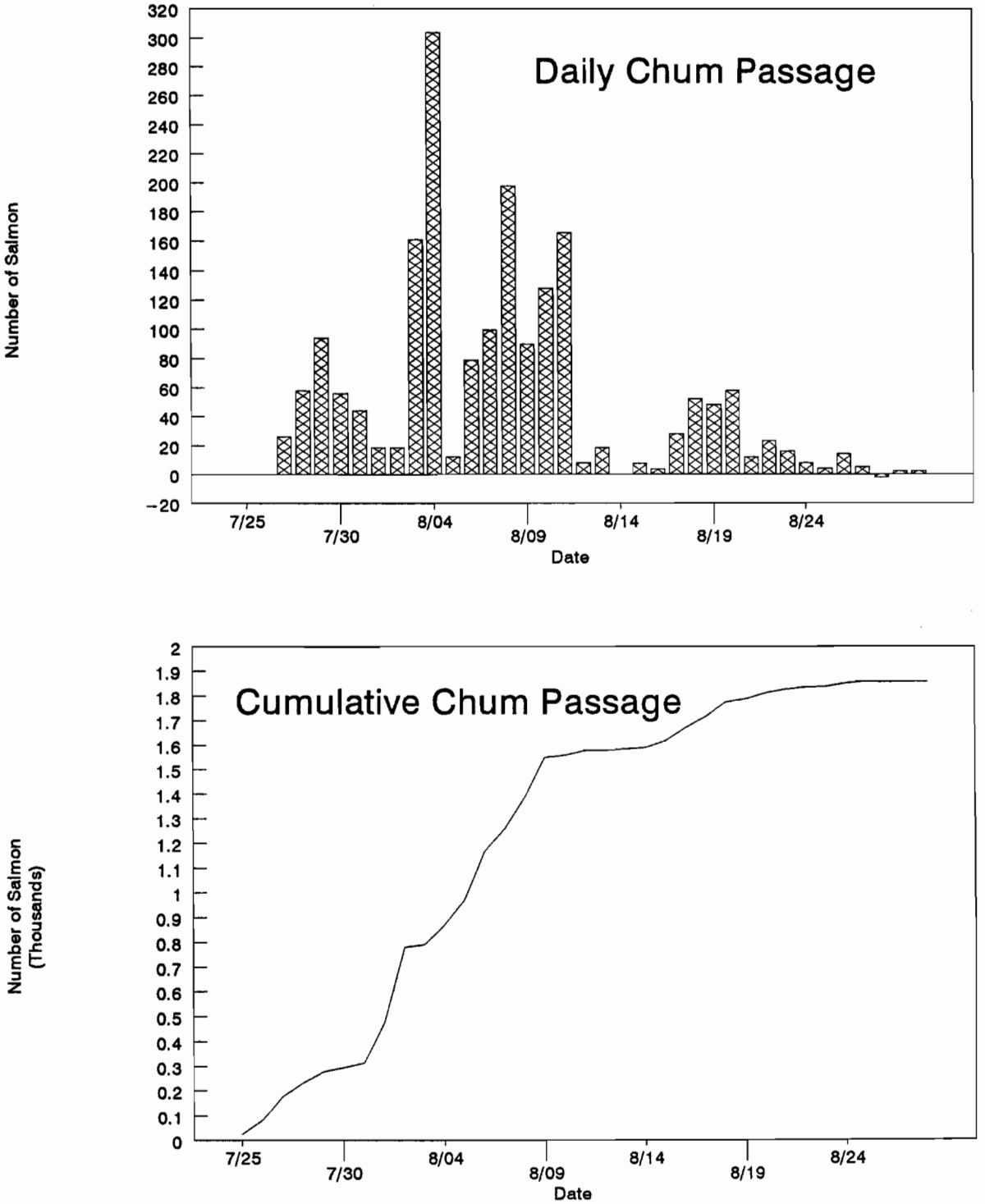
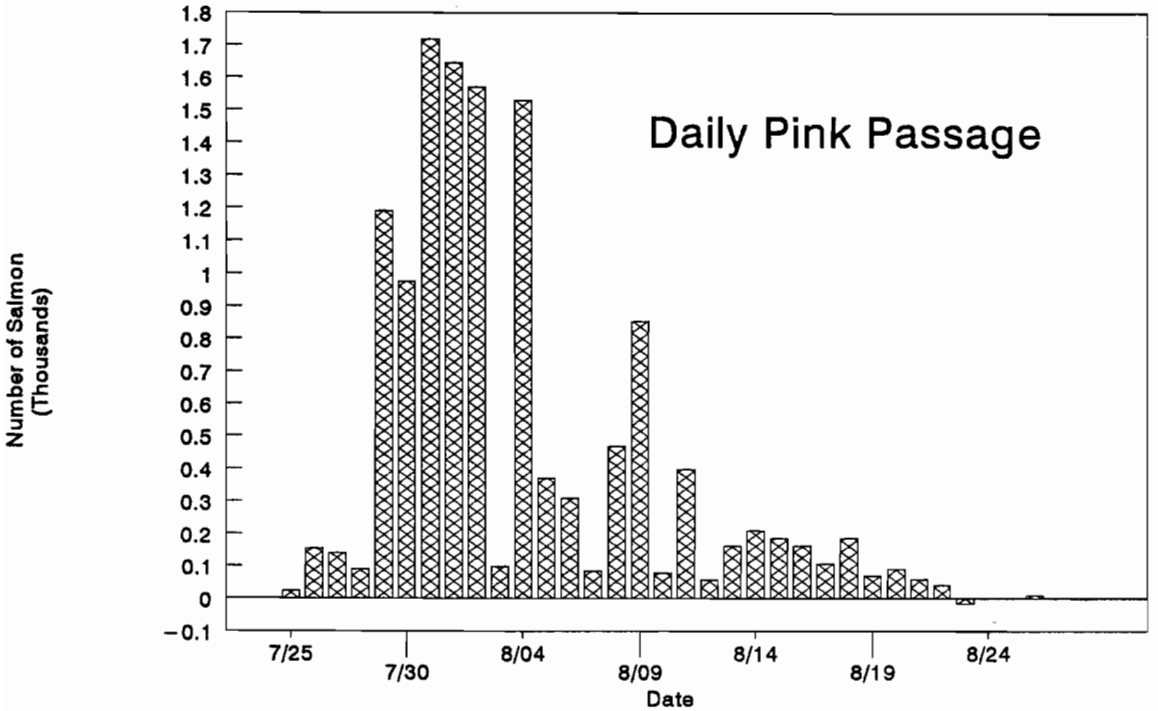


Figure 5. Nome River counting tower chum salmon daily and cumulative passages, Norton Sound, 1993.

Nome River Tower Pink Count



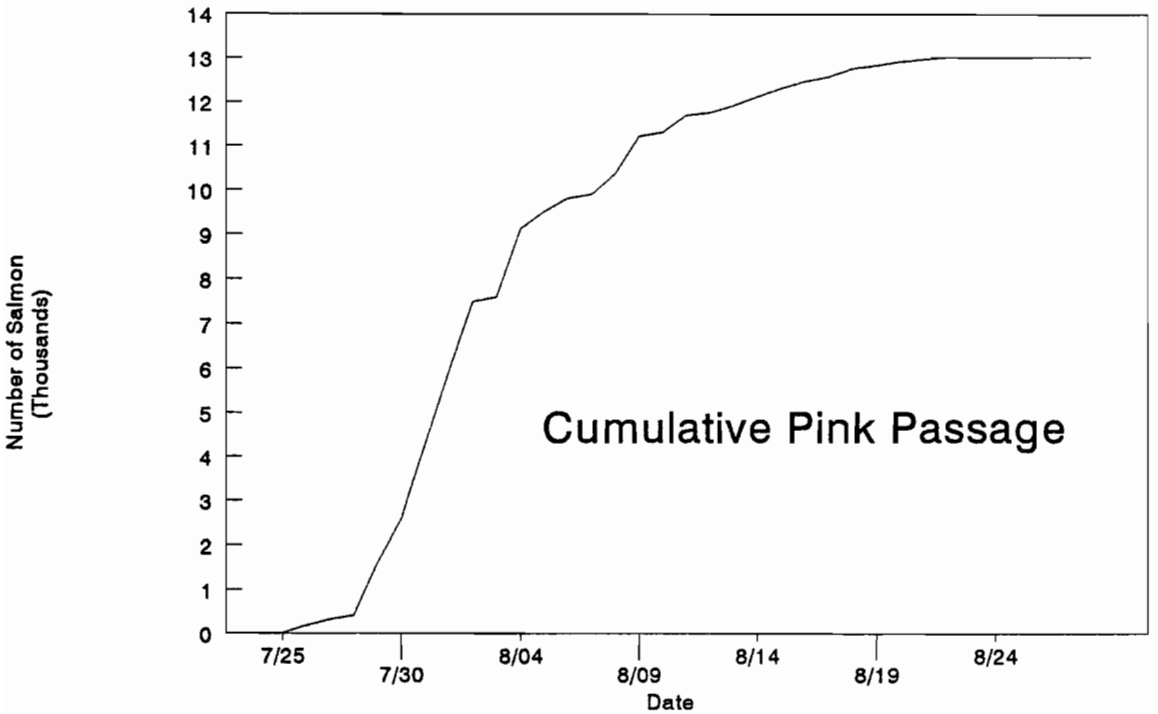
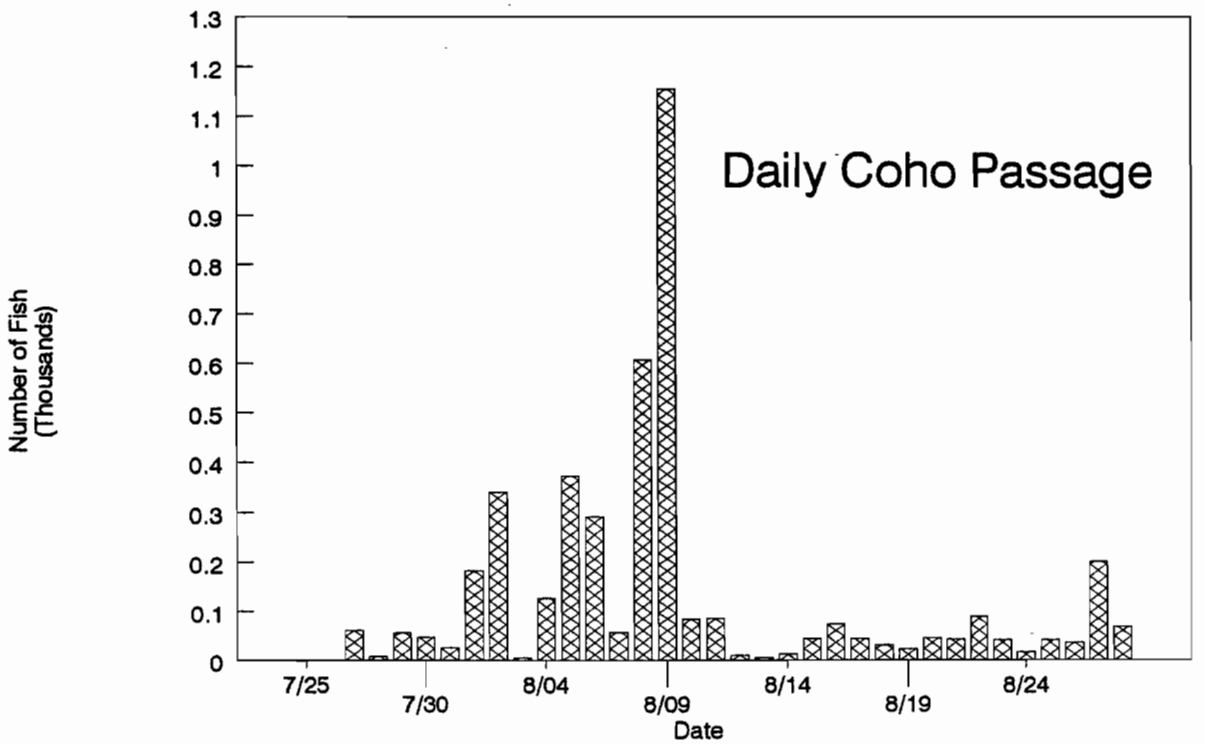


Figure 6. Nome River counting tower pink salmon daily and cumulative passages, Norton Sound, 1993.

Nome River Tower Coho Count



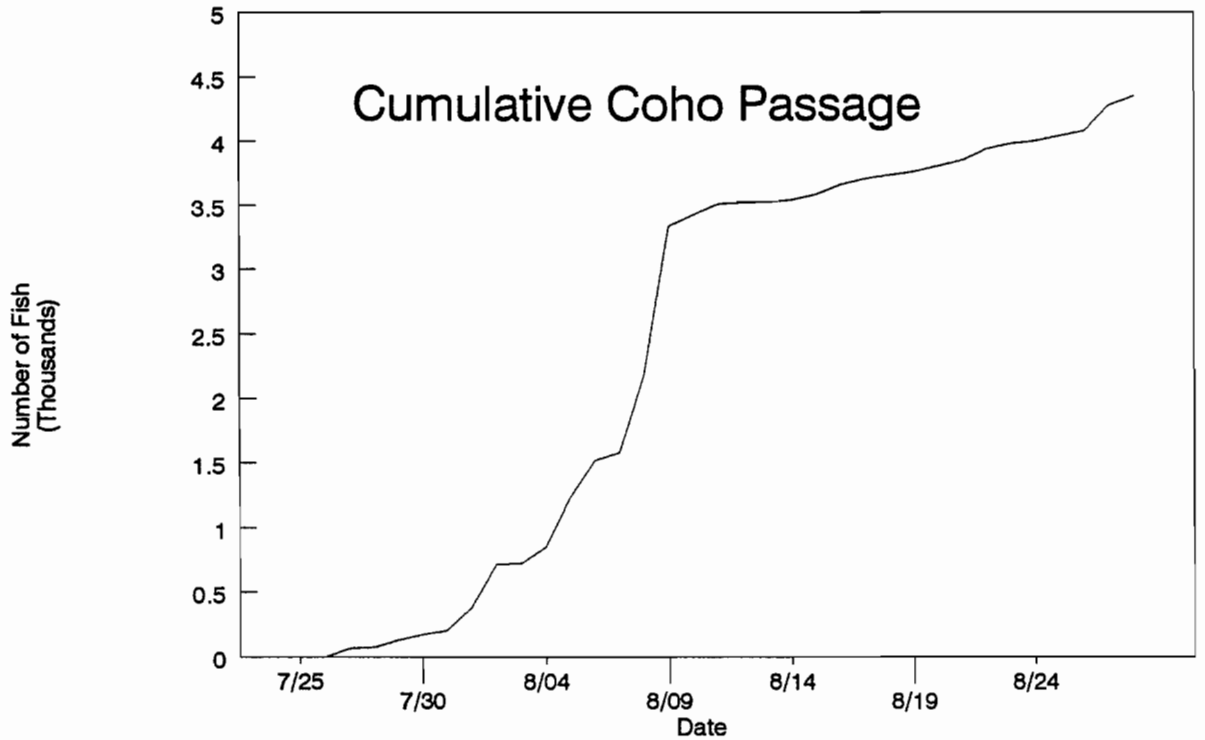


Figure 7. Nome River counting tower coho salmon daily and cumulative passages, Norton Sound, 1993.

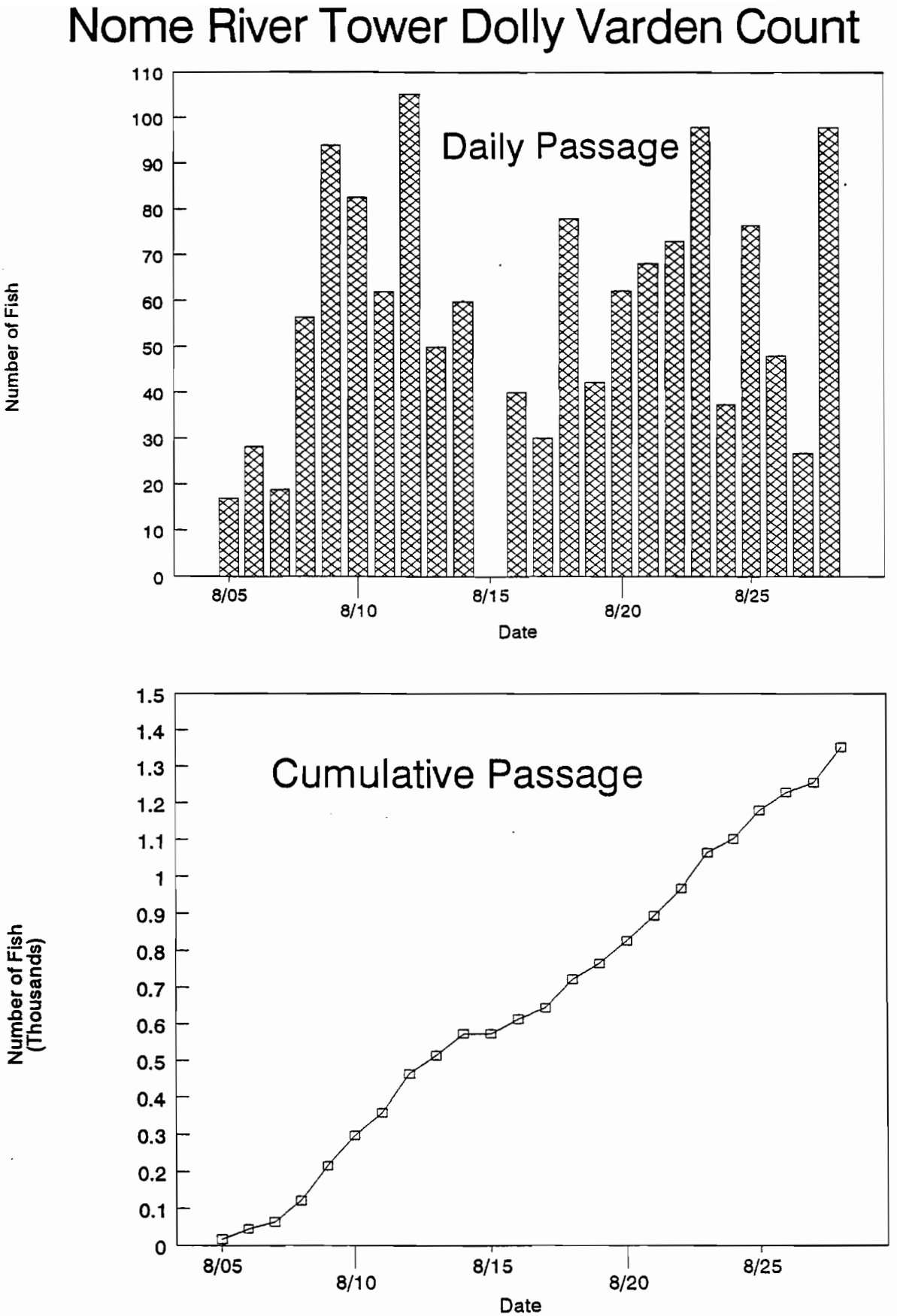


Figure 8. Nome River counting tower Dolly Varden daily and cumulative passages, Norton Sound, 1993.