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Abundance and Run Timing of Adult Pacific Salmon in the East Fork Andreafsky River, Yukon Delta National Wildlife Refuge, Alaska, 2010

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Cover Photo: East Fork Andreafsky River Weir 2010, USFWS.

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Abstract

A resistance board weir was used to collect abundance, run timing, and biological data from salmon returning to the East Fork Andreafsky River, a tributary to the lower Yukon River, between June 20 and July 31, 2010. A total of 2,413 Chinook salmon *Oncorhynchus tshawytscha* were counted through the weir. Nine age groups were identified from 707 Chinook salmon sampled, with ages 1.2 (42%) and 1.3 (45%) dominant. The weighted sex composition was 38% female. A total of 72,893 summer chum salmon *O. keta* were counted through the weir. Four age groups were identified from 898 summer chum salmon sampled, with age 0.3 (89%) dominant. The weighted sex composition was 50% female. Other salmon species counted through the weir included 339,058 pink salmon *O. gorbuscha*, 169 sockeye salmon *O. nerka*, and 10 coho salmon *O. kisutch*. Non-salmon species counted through the weir included 2,921 whitefish (Coregoninae), one Arctic grayling *Thymallus arcticus*, and 63 northern pike *Esox lucius*.

Introduction

The Alaska National Interest Lands Conservation Act (ANILCA), signed into law December 2, 1980, mandates salmon populations and their habitats be conserved within National Wildlife Refuge lands, international treaty obligations be fulfilled, and a subsistence priority for rural residents be maintained (USFWS 1991). Compliance with ANILCA mandates cannot be ensured without reliable data on salmon stocks originating from and returning to refuge lands. The Andreafsky River is one of several lower Yukon River tributaries on the Yukon Delta National Wildlife Refuge (Refuge). The Andreafsky River and its primary tributary, the East Fork Andreafsky River, provide important spawning and rearing habitat for Chinook salmon *Oncorhynchus tshawytscha*, summer chum salmon *O. keta*, coho salmon *O. kisutch*, and pink salmon *O. gorbuscha* (USFWS 1991). Large populations of sockeye salmon are absent in the Yukon River drainage (Bergstrom et al. 1995), but small populations have been identified in several Yukon River tributaries (Alt 1983; O'Brien 2006), including the Andreafsky River. The Andreafsky River supports one of the largest returns of Chinook salmon in the Yukon River drainage, has the second largest return of summer chum salmon (Bergstrom et al. 1998), and is believed to have the largest return of pink salmon (USFWS 1991). These Andreafsky River salmon stocks contribute to a large subsistence fishery and a sporadic commercial fishery in the lower Yukon River. The need to collect accurate escapement estimates is required to maintain genetic diversity, determine exploitation rates, and establish spawner recruit relationships (Labelle 1994). Data on escapement counts, which are necessary for effective management, are lacking for many individual stocks in the Yukon River drainage. Individual salmon stocks that

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return in low numbers or have early or late run timing may be incidentally over-harvested in the subsistence, commercial, or sport fisheries. Therefore, Federal and State fishery managers attempt to distribute salmon harvest over time to avoid over-harvesting an individual salmon stock (Mundy 1982).

Salmon escapement monitoring on the East Fork Andreafsky River started with aerial surveys by the U.S. Fish and Wildlife Service (USFWS) from 1954-1960, and continued by the Alaska Department of Fish and Game (ADF&G) from 1961 to the present. Chinook salmon carcass surveys were performed from 1980 through 1994 and 1996 by the ADF&G, and were re-instated starting in 2009 by the USFWS. Sonar and tower count methods were added by ADF&G from 1981 through 1988 (Appendix 1). The present weir project (operated by the USFWS Kenai Fish and Wildlife Field Office from 1994-2002 and the USFWS Fairbanks Fish and Wildlife Field Office from 2003-present) provides escapement and biological data dating back to 1994 for Chinook salmon and summer chum salmon, and from 1995 to 2005 for coho salmon. The Andreafsky River weir is one of the longest running escapement projects in the Yukon River drainage, and the only spawning escapement project in the lower river.

Poor salmon returns from 1998-2001 in the Yukon River have resulted in harvest restrictions, complete fishery closures, and spawning escapements below management goals on many tributaries in the Yukon River drainage (Vania et al. 2002; Kruse 1998). Chinook salmon and summer chum salmon runs improved with harvestable surpluses from 2002-2006 (JTC 2007). However, Chinook salmon runs again showed a decline from 2007-2010. This project provides necessary enumeration information for management, especially during poor run years.

Objectives

Specific objectives of the 2010 project were to: (1) enumerate adult salmon escapement; (2) describe run timing of Chinook salmon and summer chum salmon returns; (3) estimate age, sex, and length composition of the adult Chinook salmon population; (4) estimate age, sex, and length composition of the adult summer chum salmon population; and (5) identify and count other fish species passing through the weir.

Study Area

The Andreafsky River is located in the lower Yukon River drainage in western Alaska (Figure 1). The regional climate is subarctic with extreme temperatures reaching 28˚ C in summer and – 42˚C in winter at St. Mary's, Alaska (Leslie 1989). Mean July high and February low temperatures between 1976 and 2000 were 18˚ and – 22˚C, respectively. Average yearly precipitation is approximately 48 cm of rain and 172 cm of snow (USFWS 1991). The Andreafsky River ice breakup typically occurs in May or early June, and usually begins to refreeze in late October (USFWS 1991). Maximum discharge typically follows breakup. Sporadic high discharge periods generated by heavy rains occur between late July and early September.

The Andreafsky River is one of the three largest Yukon River tributaries within Refuge boundaries (USFWS 1991) and drains a watershed of approximately 5,450 km^2. The main-stem and East Fork of the Andreafsky River parallel each other flowing in a southwesterly direction

for more than 200 river-kilometers (rkm) and converge 7 rkm above its confluence with the Yukon River. The mouth of the Andreafsky River is approximately 160 rkm upstream from the mouth of the Yukon River. The main-stem and East Fork of the Andreafsky River flow through the Andreafsky Wilderness and the portions of each river within Refuge boundaries are designated as Wild and Scenic Rivers.

The East Fork Andreafsky River originates in the Nulato Hills at approximately 700 m elevation and drains an area of about 1,950 km^2 (USFWS 1991). The river cuts through alpine tundra at an average gradient of 7.6 m per km for 48 rkm. It then flows for 130 rkm through a forested river valley bordered by hills that rarely exceed 400 m elevation. Willow, spruce, alder, and birch dominate the riparian zone and much of the hillsides. This forested river section drops at an average rate of 1.4 m/km and is characterized by glides and riffles with a gravel and rubble substrate. The river widens in the lowermost 38 rkm and the gradient changes to 0.14 m/km. The valley here is a wetland, interspersed with forest and tundra, and bordered by hills that are typically less than 230 m elevation. Aquatic vegetation grows in the slower flowing stream channels. Water level fluctuations on the Yukon River also affect the stage height in the lower sections of the East Fork and main-stem Andreafsky Rivers.

Methods

Weir Operation

A modified resistance board weir (Tobin 1994; Tobin and Harper 1995; Zabkar and Harper 2003) spanning 105 m was installed in the East Fork Andreafsky River (62° 07′00.26″N, 162° 48′27.75″W) approximately 43 rkm upstream from the Yukon-Andreafsky River confluence and 26 air–km northeast of St. Mary's, Alaska (Figure 1). The weir site is located approximately 2.4 rkm downstream from the 1994 weir site described by Tobin and Harper (1995) and 2.1 rkm downstream from the 1981-1988 sonar and counting tower site described by Sandone (1989). Weir panel picket spacing (4.8 cm inside edge to inside edge) was designed to remain functional during higher water flow, but allowed some small pink salmon and resident fish to pass through the weir undetected (Zabkar and Harper 2003). The weir is operated mid June through the end of July (summer season) to capture the majority of the Chinook salmon and summer chum salmon runs. The target start date of the project is based on previous years' salmon run timing data. The end date of the project is determined in-season, normally when the daily count of both species has dropped to less than 1% of the seasonal passage to date and continued at this level for three or more consecutive days, or when logistical constraints require stopping before this point is reached. In 1995, weir operations were extended into September (fall season) to enumerate the coho salmon run. However, since 2006, the weir has not operated during the fall season due to a lack of funds and management priority.

A staff gauge was installed upstream of the weir to measure daily water levels. Water temperatures were collected once daily between 0730 and 0830 hours and two automatic temperature loggers collected water temperatures hourly throughout the season.

Two passage chutes were installed, one approximately one-quarter of the way across from the left bank and the other centered between the banks, in water deep enough to allow fish passage in the event of low water. The thalwag was not used for a fish passage chute because the water was too deep. A fish trap was installed on the river left passage chute to facilitate biological

sampling. All fish were enumerated and identified to species as they passed through the live trap, except whitefish spp., which were grouped together under the subfamily Coregoninae. Fish were counted 24 hours per day and the numbers were recorded hourly.

The weir was cleaned and its integrity visually checked daily. Cleaning consisted of raking debris from the upstream surface of the weir or walking across each panel to submerge it enough to allow the current to wash debris downstream. Repairs were made when necessary.

Biological Data

Adult salmon were identified and counted daily as they migrated through the weir live trap to determine run timing and escapement. A stratified random sampling design (Cochran 1977) was used to collect age, length, and sex ratio information for Chinook salmon and summer chum salmon. Biological sampling commenced at the beginning of each week, and the weekly sampling goal was 160 Chinook salmon and 160 summer chum salmon spread over a minimum 4 day period, with daily sampling spread out over the entire 24 hours. All target species within the trap were sampled to prevent bias. The adipose fin was clipped on all sampled Chinook salmon so that sampled Chinook could be identified in carcass surveys carried out after weir operations ceased. Non-target species were identified and counted, but not sampled.

Fish sampling consisted of identifying salmon species, determining sex, measuring length, collecting scales, and then releasing the fish upstream of the weir. Secondary external characteristics were used to determine sex. Length was measured from mid-eye to the fork of the caudal fin and rounded to the nearest 5 mm. Scales were removed from the area above the lateral line and posterior to the dorsal fin following the methods outlined by Koo (1962) and Devries and Frie (1996). Three scales were collected from each Chinook salmon sampled, and one scale was collected from each summer chum salmon sampled. Scales were sent to ADF&G post season for age determination. Scale impressions were made on cellulose acetate cards using a heated scale press and examined with a microfiche reader (Zabkar and Harper 2003). Age was determined by an ADF&G biologist and reported according to the European method (Koo 1962). Daily sex ratios were collected by visually examining each fish for external morphological features when sampling for age and length. The daily escapement counts and sex ratios were reported daily to the USFWS Fairbanks Fish and Wildlife Field Office.

Age, sex and length were collected from Chinook salmon carcasses on the spawning grounds of the East Fork Andreafsky River August 5-15. A sampling goal of 400 carcasses was set as recommended by ADF&G. Collections were made daily by traveling via boat from the weir camp upstream through the spawning grounds and returning to camp each evening. The majority of the spawning grounds were sampled multiple times throughout the sample period. Sex was determined by dissection and visual identification of the reproductive organs, length was mid-eye to the fork of the caudal fin and rounded to the nearest 5 mm, and scales were sent to ADF&G for age determination.

Data Analysis

Calculations for age and sex information were treated as a stratified random sample (Cochran 1977), with sampling weeks as the strata. Due to the difficulty of sexing small Chinook salmon, age 1.1 and 1.2 Chinook salmon were assumed to be males (Brady 1983; Bales 2007; Karpovich and DuBois 2007). Each statistical week was defined as beginning on Sunday and ending the

following Saturday. Incomplete weeks or weeks with low passage were combined with the week after the beginning of weir operation or with the week before the end of weir operation. Within a stratum, the proportion of the samples composed of a given sex or age, $\hat{p}_{ij}$, was calculated as

$$\hat{p}_{ij} = \frac{n_{ij}}{n_j},$$

where n_{ij} is the number of fish by sex *i* or age *i* sampled in week *j*, and n_j is the total number of fish sampled in week *j*. The variance of $\hat{p}_{ij}$ was calculated as

$$\hat{v}(\hat{p}_{ij}) = \frac{\hat{p}_{ij}(1-\hat{p}_{ij})}{n_j - 1}.$$

Sex and age composition for the total run of Chinook and summer chum salmon of a given sex or age, $\hat{p}_i$, were calculated as

$$\hat{p}_i = \sum_{j-1} \hat{W}_j \hat{p}_{ij,}$$

where the stratum weight $\hat{W}_j$ was calculated as

$$\hat{W}_j = \frac{N_j}{N},$$

and N_j equals the total number of fish of a given species passing through the weir during week *j*, and *N* is the total number of fish of a given species passing through the weir during the run. Variance, $\hat{v}(\hat{p}_i)$ of sex and age compositions for the run was calculated as

$$\hat{v}(\hat{p}_i) = \sum_{j-1} \hat{W}_j^2 \hat{v}(\hat{p}_{ij}).$$

Substantial numbers of coho salmon in 1998 and all salmon species in 2001 were missed due to high water; therefore the counts for these years were not included in any annual comparative analyses.

Results and Discussion

Weir Operation

The weir was operational from June 20 through July 31, 2010. Brief high water events July 6 – 7 and July 29 – 30 caused the trap to be closed for short periods of time or sampling to be temporarily suspended, until the event passed. However, the weir remained fish tight and count adjustments were unnecessary. The average river stage height during weir operations was 98.8 cm (range = 85.3 – 134.1 cm; Figure 2). Morning water temperature during weir operations averaged 12°C (range = 7 – 15°C; Figure 2).

Biological Data

Salmon species recorded moving through the weir include 2,413 Chinook salmon, 72,893 summer chum salmon, 10 coho salmon, 339,058 pink salmon, and 169 sockeye salmon (Table 1). Passage estimates were conservative due to an unknown number of fish passing before and after the weir was operational, however it is believed that most of the Chinook salmon and chum salmon runs were accounted for. The weir was not fish-tight for pink salmon and did not operate into the fall season when the majority of the coho salmon migrate. Non-salmon species recorded moving through the weir include 2,921 whitefish sp., one Arctic grayling, and 63 northern pike.

The East Fork Andreafsky River weir recorded a below average Chinook salmon escapement (Figure 3), similar to the 2010 drainage-wide Chinook salmon run which was assessed to be below average (Hayes and Buckelew 2010). The summer chum salmon escapement recorded at the weir was average (Figure 3). However, the overall 2010 drainage wide summer chum salmon run was below average, but above the drainage wide escapement goal (Hayes and Buckelew 2010).

Chinook Salmon

The 2010 Chinook salmon escapement estimate (2,413 fish) was below the 1994-2009 historical average of 4,407 fish (Figure 3). Peak passage (890 fish) occurred during the stratum of July 4 through July 10 (Table 1; Figure 4). The 2010 run timing was later than average (Appendix 2). The first quartile passed on July 9 (historical average July 6), the mid-point of the run at the weir was July 13 (historical average July 11), and the third quartile passage date was July 17 (historical average July 16; Table 2). Chinook salmon calculations were not adjusted for differences in project duration between years.

Female Chinook salmon lengths ranged from 510 to 960 mm and male Chinook salmon ranged from 330 to 895 mm (Table 3). A total of 707 Chinook salmon were sampled for age composition, with 83 (12%) classified as unreadable, primarily due to scale regeneration. The age composition of sampled Chinook salmon included nine age groups: age 1.1 (<1%), age 1.2 (42%), age 1.3 (45%), age 2.2 (2%), age 1.4 (10%), age 2.3 (1%), age 1.5 (1%), age 2.4 (<1%), and age 2.5 (<1%) (Table 4). Females composed an estimated 38% (weighted) of the overall escapement (Table 4). The age distributions of female and male Chinook salmon were different, with age 1.3 dominant at 72% for females, and age 1.2 dominant at 67% for males.

The 2010 ADF&G aerial survey conducted on August 2 estimated 849 Chinook salmon for the main-stem under fair conditions and 537 Chinook salmon for the East Fork under poor conditions (Appendix 1). The main-stem count was within the Sustainable Escapement Goal (SEG) of 640 to 1,600 Chinook salmon, and the East Fork was below the SEG of 960 to 1,900 Chinook salmon; however since survey conditions were poor for the East Fork survey, it is assumed that this was an underestimate.

The Chinook salmon carcass surveys occurred from August 5-15. Unfortunately, only 25 Chinook salmon were located and sampled during this time. The low sample size was most likely due to high water flows at the end of July washing carcasses downstream and possibly due to late timing of the survey. Of the 25 carcasses sampled, seven were females (28%) and 18 were males(72%). Two females were aged 1.3 with an average length of 792.5 mm, four females were aged 1.4 with an average length of 870 mm, and one female, length 850 mm, could

not be aged. Seven males were aged 1.2 with an average length of 542 mm (length not recorded for one individual), ten males were aged 1.3 with an average length of 742 mm, and one male aged 2.2 had a length of 610 mm. The low sample size of the survey was deemed inadequate for making comparisons with the weir data.

Summer Chum Salmon

The 2010 summer chum salmon escapement estimate of 72,893 fish was near the 1994-2009 historical average of 69,827 fish (Figure 3), and above the Biological Escapement Goal (BEG) of 40,000 fish (Appendix 1; JTC 2010). Peak passage (31,384 fish) occurred during the stratum of July 4 through July 10 (Table 1; Figure 4). The 2010 run timing was later than average (Appendix 3). The first quartile passed on July 3 (historical average July 2), the mid-point of the run at the weir was July 8 (historical average July 6), and the third quartile passage date was July 14 (historical average July 12; Table 2). Summer chum salmon calculations were not adjusted for differences in project duration between years.

Female summer chum salmon lengths ranged from 450 to 610 mm and male summer chum salmon ranged from 450 to 660 mm (Table 3). A total of 898 summer chum salmon were sampled for age composition, with 62 (7%) classified as unreadable, primarily due to scale regeneration. The age composition of sampled summer chum salmon included four age groups: age 0.2 (6%), age 0.3 (89%), age 0.4 (4%), and age 0.5 (<1%) (Table 5). Females comprised an estimated 50% of the overall escapement (Table 5). Male and female summer chum salmon were predominately age 0.3 at 87% and 91%, respectively.

Pink Salmon

Pink salmon have strong returns to the East Fork Andreafsky River during even-numbered years and relatively weak returns during odd-numbered years (Appendix 4). The 2010 escapement through the weir (339,058 fish) was more than the even-year 1994-2008 historical average of 222,296 fish. Pink salmon counts on the Andreafsky River are conservative and a measure of relative year to year abundance due to small pink salmon being able to pass uncounted between the weir pickets, and fish continuing to migrate after the weir has been pulled. Peak passage (120,425 fish) occurred during the stratum of July 11 to 17 (Table 1).

Coho Salmon

Coho salmon enumeration was discontinued after the 2005 season due to insufficient funding for continuing weir operations into August and September as necessary to assess the coho salmon run. There were 10 coho salmon that passed through the weir prior to project closure. The first coho salmon passed through the weir on July 28 (Table 2).

Sockeye Salmon

The 2009 sockeye salmon escapement estimate of 169 fish was below the 1995-2009 historical average of 221 fish (Table 2; Appendix 5). However, the 2010 sockeye salmon escapement estimate was incomplete since weir operation ceased before the end of the run.

Conclusion

The East Fork Andreafsky River weir has been an important tool for monitoring salmon stocks originating in the Refuge, assisting both ADF&G and USFWS inseason managers with management of Yukon River fisheries. Due to the complexity of the Yukon River mixed-stock salmon fishery and the difficulty in managing specific stocks, it is vital to continue collecting information from individual salmon populations, including stocks in the Andreafsky River drainage. The East Fork Andreafsky weir is unique in that it is the only enumeration project in the lower river downstream of the Pilot Station sonar. The numerical, biological, and run timing information collected from the East Fork Andreafsky weir project is assumed to be representative of other Lower Yukon River systems experiencing lower salmon exploitation due to their location in the lower portion of the Yukon River drainage. This project allows managers to evaluate escapement goals, analyze trends in population size, length, age, and gender, formulate run projections, determine harvest allocations, and monitor long-term changes associated with climate change, harvest fluctuations, diseases, and other stressors.

Recommendations to enhance this project include; reinstating coho salmon enumeration to monitor the status of this stock, especially if commercial interest in coho salmon continues to grow; investigating the spawning and rearing locations for sockeye salmon to assure long-term viability of this small unique population; and examining the utilization of the East Fork Andreafsky River by broad and humpback whitefish.

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Table 1. Salmon escapement estimates, by stratum, recorded at the East Fork Andreafsky River weir, Alaska, 2010.

Stratum dates	Chinook salmon	Chum salmon	Coho salmon	Pink salmon	Sockeye salmon
June 20 - 26	1	418	0	81	4
June 27 - July 3	145	18,860	0	21,163	15
July 4 - 10	890	31,384	0	67,276	54
July 11 - 17	798	13,292	0	120,425	21
July 18 - 24	197	5,006	0	81,962	35
July 25 - 31	382	3,933	10	48,151	40
Total	2,413	72,893	10	339,058	169

Table 2. Daily and cumulative estimates of Chinook salmon, summer chum salmon, and pink salmon, and daily counts of coho salmon, sockeye salmon, whitefish spp., northern pike, and Arctic grayling escapement through the East Fork Andreafsky River weir, Alaska, 2010.

	Chinook salmon		Chum salmon		Pink salmon		Coho salmon	Sockeye salmon	Whitefish spp.	Northern Pike	Arctic grayling
Date	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Daily	Daily	Daily	Daily
20-Jun	0	0	0	0	0	0	0	0	19	8	0
21-Jun	0	0	0	0	0	0	0	0	30	10	0
22-Jun	0	0	0	0	2	2	0	0	109	7	0
23-Jun	0	0	2	2	0	2	0	1	65	6	0
24-Jun	0	0	0	2	2	4	0	0	34	2	0
25-Jun	0	0	6	8	8	12	0	1	40	1	0
26-Jun	1	1	410	418	69	81	0	2	40	0	0
27-Jun	3	4	285	703	105	186	0	0	24	1	0
28-Jun	0	4	53	756	8	194	0	0	8	0	0
29-Jun	13	17	5435	6,191	1756	1,950	0	9	50	2	1
30-Jun	16	33	3088	9,279	2641	4,591	0	1	177	1	0
1-Jul	18	51	1534	10,813	1284	5,875	0	1	124	2	0
2-Jul	41	92	3196	14,009	8021	13,896	0	2	210	3	0
3-Jul	54	146	5269	19,278	7348	21,244	0	2	90	2	0
4-Jul	25	171	3338	22,616	3307	24,551	0	6	78	2	0
5-Jul	41	212	2689	25,305	1633	26,184	0	10	65	1	0
6-Jul	124	336	7086	32,391	4088	30,272	0	5	54	2	0
7-Jul	16	352	1136	33,527	246	30,518	0	3	31	1	0
8-Jul	36	388	5336	38,863	3532	34,050	0	6	83	1	0
9-Jul	353	741	7921	46,784	25726	59,776	0	9	216	1	0
10-Jul	295	1,036	3878	50,662	28744	88,520	0	15	261	2	0
11-Jul	69	1,105	1808	52,470	12550	101,070	0	5	128	0	0
12-Jul	92	1,197	1470	53,940	10095	111,165	0	2	87	1	0
13-Jul	24	1,221	702	54,642	6127	117,292	0	3	55	2	0
14-Jul	34	1,255	1391	56,033	5145	122,437	0	1	47	2	0
15-Jul	27	1,282	1405	57,438	6053	128,490	0	1	25	0	0
16-Jul	278	1,560	4138	61,576	37603	166,093	0	7	88	1	0
17-Jul	274	1,834	2378	63,954	42852	208,945	0	2	64	0	0
18-Jul	21	1,855	281	64,235	12174	221,119	0	2	39	1	0
19-Jul	7	1,862	400	64,635	10984	232,103	0	5	53	0	0
20-Jul	9	1,871	525	65,160	13445	245,548	0	5	39	0	0
21-Jul	32	1,903	1189	66,349	12256	257,804	0	5	37	0	0
22-Jul	22	1,925	930	67,279	15201	273,005	0	3	47	0	0
23-Jul	47	1,972	785	68,064	11412	284,417	0	12	35	1	0
24-Jul	59	2,031	896	68,960	6490	290,907	0	3	65	0	0
25-Jul	59	2,090	1030	69,990	10558	301,465	0	6	55	0	0
26-Jul	81	2,171	686	70,676	9282	310,747	0	9	53	0	0
27-Jul	23	2,194	585	71,261	9708	320,455	0	7	57	0	0
28-Jul	94	2,288	956	72,217	7151	327,606	6	3	31	0	0
29-Jul	101	2,389	284	72,501	2908	330,514	1	3	16	0	0
30-Jul	14	2,403	200	72,701	4733	335,247	0	3	39	0	0
31-Jul	10	2,413	192	72,893	3811	339,058	3	9	53	0	0
Total	2,413		72,893		339,058**		10**	169**	2,921	63	1

[ ] brackets indicate dates at which 25, 50, and 75 percent of the run had passed the weir.
** incomplete counts, weir removed

Table 3. Mid-eye to fork length (mm) at age of female and male Chinook salmon and summer chum salmon sampled at East Fork Andreafsky River weir, Alaska, 2010.

	Female					Male				
Age	N	Mean	Median	SE	Range	N	Mean	Median	SE	Range
Chinook salmon										
1.1	0	0	0	0.0	-	2	340	340	10	330-350
1.2	0	0	0	0.0	-	241	536	530	3.3	400-740
1.3	173	744	760	4.9	510-890	123	716	720	5.4	495-885
2.2	2	580	580	0.0	580-580	6	523	512.5	24.7	460-630
1.4	59	832	830	6.8	720-960	6	833	825	16.3	795-895
2.3	2	735	735	35.0	700-770	3	747	740	12.0	730-770
1.5	5	903	900	9.4	880-935	0	0	0	0.0	-
2.4	1	885	885	0.0	885-885	0	0	0	0.0	-
2.5	1	885	885	0.0	885-885	0	0	0	0.0	-
Total	243	768	775	4.9	510-960	381	599	570	5.4	330-895
*Eighty-three Chinook salmon could not be aged.										
Chum salmon										
0.2	36	516	515	4.4	450-580	23	552	555	10.0	450-650
0.3	391	524	520	1.3	460-610	344	561	560	1.6	480-650
0.4	13	534	540	10.0	470-590	26	583	577.5	7.1	520-660
0.5	1	575	575	0.0	575-575	2	535	535	25.0	510-560
0.6	0	0	0	0.0	-	0	0	0	0.0	-
Total	441	524	520	1.3	450-610	395	562	560	1.6	450-660
*Sixty-two chum salmon could not be aged.										

Table 4. Age and sex ratio estimates by stratum of Chinook salmon sampled at East Fork Andreafsky River weir, Alaska, 2010. Standard errors are in parentheses. Season totals are calculated from weighted weekly strata totals. Unknown age data are from unreadable scale samples and are listed for informational purposes. They were not included in age calculations.

					Brood year and age								
					2007	2006	2005	2005	2004	2004	2003	2003	2002
Strata	Run size (N)	Sample size (n)	Unknown age	Percent female	1.1	1.2	1.3	2.2	1.4	2.3	1.5	2.4	2.5
June 20 - July 3	146	52	19	31% (6.5)	0% (0.0)	65% (6.7)	21% (5.7)	2% (1.9)	12% (4.5)	0% (0.0)	0% (0.0)	0% (0.0))	0% (0.0)
July 4 - 10	890	141	19	35% (4.0)	0% (0.0)	52% (4.2)	38% (4.1)	3% (1.4)	8% (2.3)	0% (0.0)	0% (0.0)	0% (0.0))	0% (0.0)
July 11 - 17	798	162	16	40% (3.9)	0% (0.0)	39% (3.8)	47% (3.9)	1% (0.6)	9% (2.3)	2% (1.1)	2%(1.2)	0% (0.0))	0% (0.0)
July 18 - 24	197	143	15	41% (4.1)	0% (0.0)	31% (3.9)	55% (4.2)	0% (0.0)	11% (2.6)	1% (1.0)	0% (0.0)	1% (0.7))	1% (0.7)
July 25 -31	382	126	14	44%(4.4)	2% (1.1)	21% (3.6)	62% (4.3)	2% (1.1)	13% (3.1)	0% (0.0)	1% (0.8)	0% (0.0))	0% (0.0)
Total	2,413	624	83	38% (2.1)	<1% (0.2)	42% (2.2)	45% (2.2)	2% (0.6)	10% (1.3)	1% (0.4)	1% (0.4)	<1% (0.1)	<1% (0.1)
Female	980	243	48		0% (0.0)	0% (0.0)	72%(3.2)	1% (0.8)	23% (3.0)	1% (0.5)	2% (1.0)	<1% (0.1)	<1% (0.1)
Male	1433	381	35		<1% (0.3)	67% (2.5)	28% (2.4)	2% (0.8)	1% (0.6)	1% (0.5)	0% (0.0)	0% (0.0)	0% (0.0)

Table 5. Age and sex ratio estimates by stratum of summer chum salmon sampled at East Fork Andreafsky River weir, Alaska, 2010. Standard errors are in parentheses. Season totals are calculated from weighted weekly strata totals. Unknown age data are from unreadable scale samples and are listed for informational purposes. They were not included in age calculations.

					Brood year and age				
					2007	2006	2005	2004	2003
Strata	Run size (N)	Sample size (n)	Unknown age	Percent female	0.2	0.3	0.4	0.5	0.6
June 20 - July 3	19,278	176	14	36% (3.6)	5% (1.7)	88% (2.5)	6% (1.8)	1% (0.6)	0% (0.0)
July 4 - 10	31,384	179	17	54% (3.7)	6% (1.7)	92% (2.0)	2% (1.1)	0% (0.0)	0% (0.0)
July 11 - 17	13,292	159	19	57% (3.9)	6% (1.9)	87% (2.7)	6% (1.9)	1% (0.6)	0% (0.0)
July 18 - 24	5,006	169	5	60% (3.8)	9% (2.2)	86% (2.7)	5% (1.6)	1% (0.6)	0% (0.0)
July 25 -31	3,933	153	7	58% (4.0)	10% (2.4)	86% (2.8)	4% (1.6)	0% (0.0)	0% (0.0)
Total	72,893	836	62	50% (2.0)	6% (1.0)	89% (1.2)	4% (0.8)	<1% (0.2)	0% (0.0)
Female	37,029	441	34		6% (1.3)	91% (1.5)	2% (0.8)	<1% (0.2)	0% (0.0)
Male	35,864	395	28		6% (1.4)	87% (1.9)	6% (1.3)	<1% (0.3)	0% (0.0)

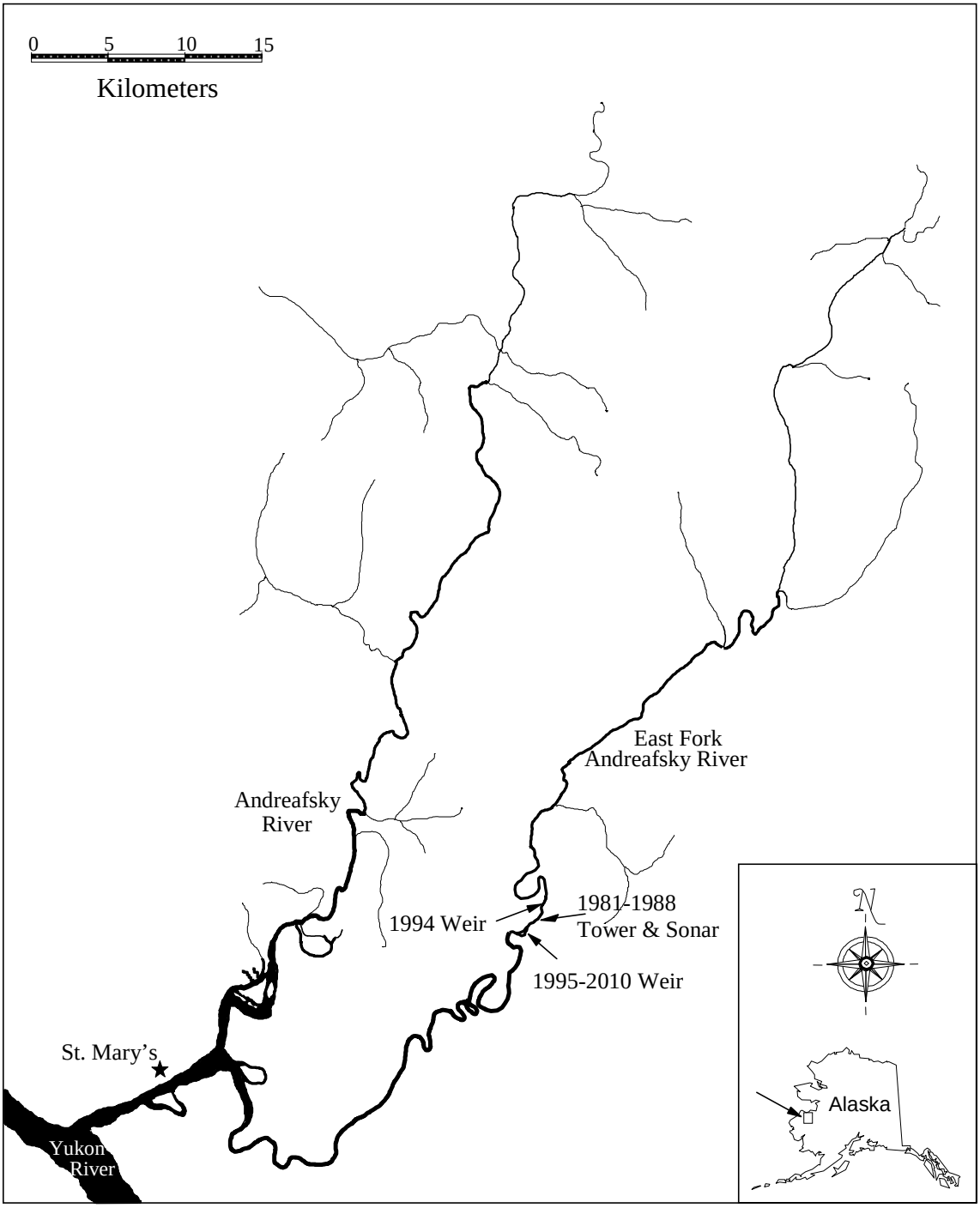

Figure 1. Weir locations in the East Fork Andreafsky River, Alaska, 1994-2010.

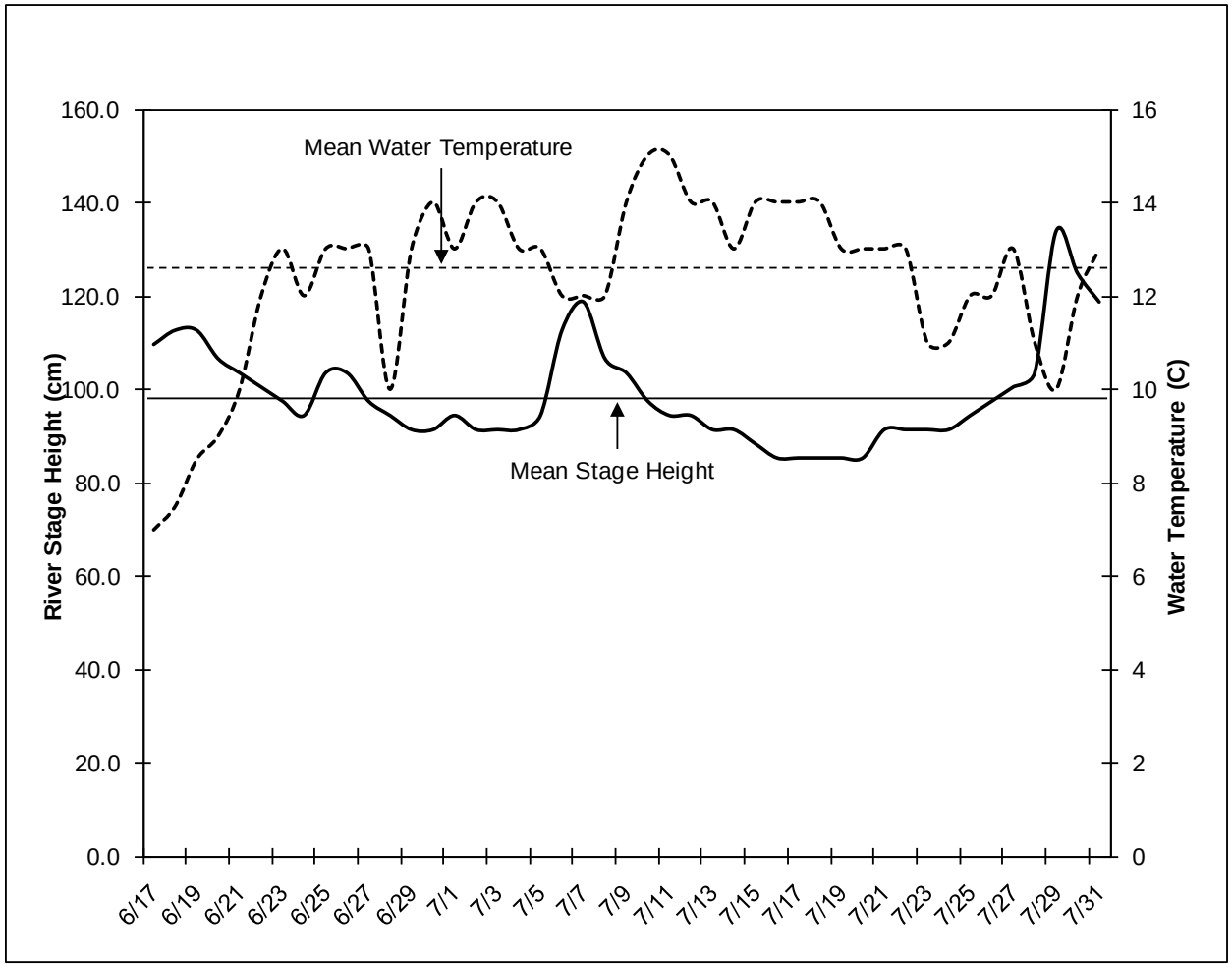

Figure 2. River stage heights and morning water temperatures at the East Fork Andreafsky River weir, 2010.

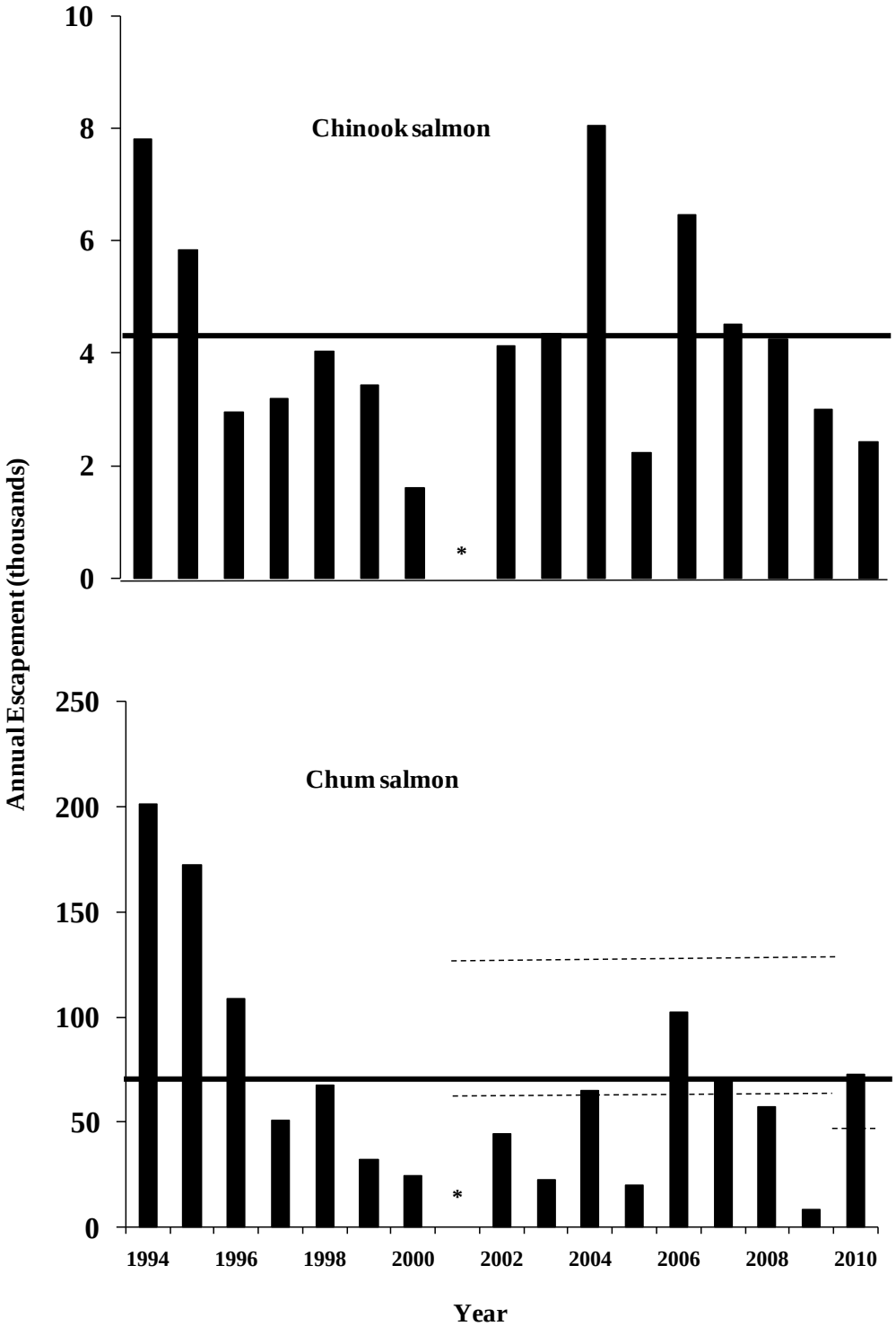

Figure 3. Annual escapement estimates of Chinook salmon and summer chum salmon migrating through the East Fork Andreafsky River weir, Alaska, 1994 to 2010. Historical average represented by the solid, horizontal line. The dotted lines in the summer chum salmon chart represent the maximum and minimum BEG (established in 2001 and lowered to 40,000 in 2010). Asterisk denotes missing annual count due to high water.

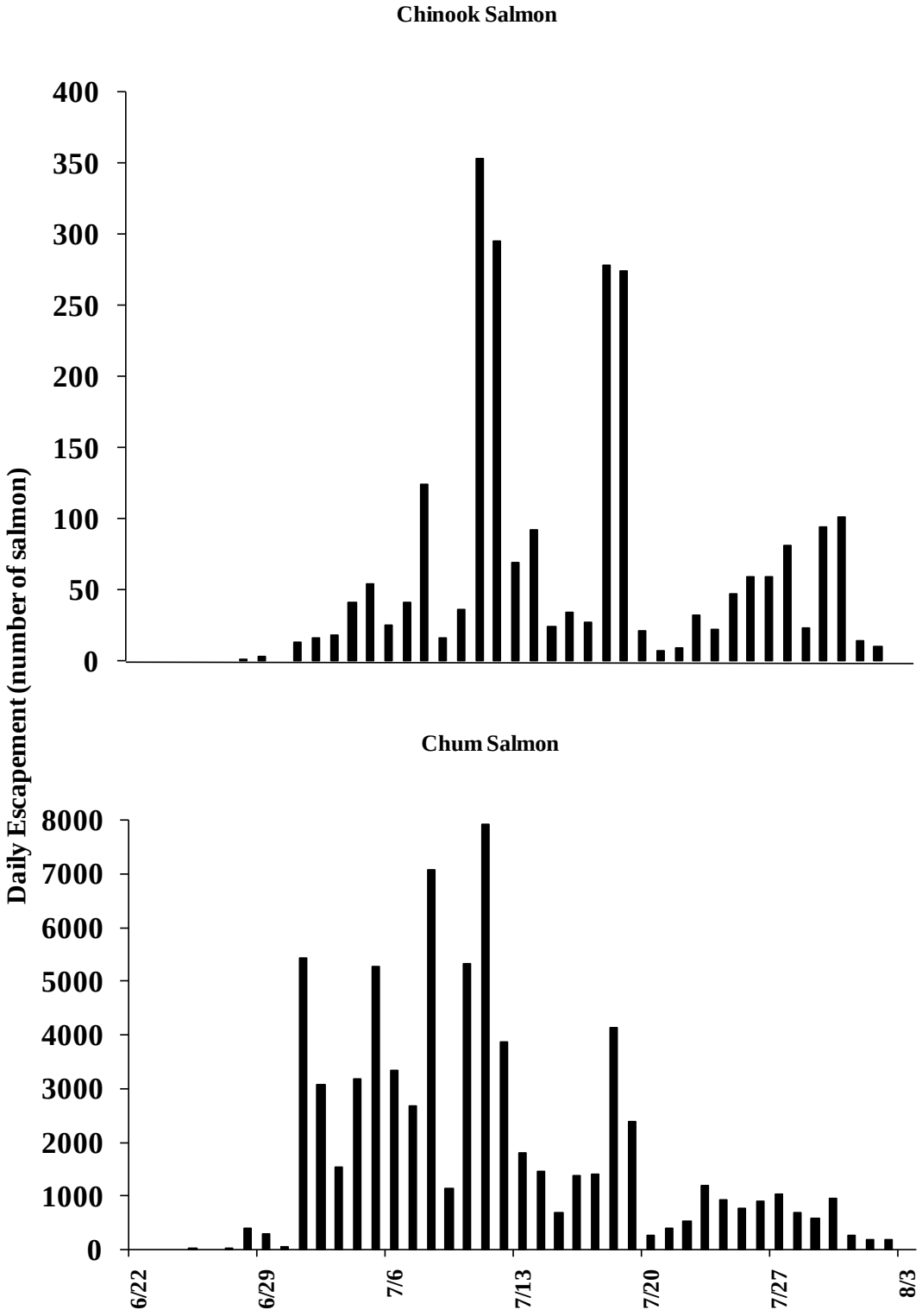

Figure 4.—Daily Chinook salmon and summer chum salmon escapement estimates through the East Fork Andreafsky River weir, Alaska, June 20 to July 31, 2010.

Appendix 1. Historical Chinook, summer chum, and coho salmon escapement estimates recorded for the Andreafsky River, Alaska, 1954-2010. Data provided by ADF&G (JTC 2010 and M. Parker pers. comm.)

	East Fork Andreafsky River						Mainstem Andreafsky River		
	Aerial Index Estimates			Sonar, Tower, or Weir			Aerial Index Estimates		
Year	Chinook salmon	Chum salmon	Coho salmon	Chinook salmon	Chum salmon	Coho salmon	Chinook salmon	Chum salmon	Coho salmon
1954	*a*	*a*					2,000 *a*	7,000 *a*	
1955									
1956	336 *b*	15,356 *b*							
1957									
1958	50 *b*	3,500 *b*					150 *b*	30,000 *b*	
1959	150 *b*	4,000 *b*					300 *b*	7,000 *b*	
1960	1,020	10,530					1,220	6,016	
1961	1,003	8,110							
1962	675 *b*	18,040					762 *b*	19,530	
1963									
1964	867	8,863					705	12,810	
1965							355 *b*	14,670 *b*	
1966	361	25,619 *b*					303	18,145	
1967							276 *b*	14,495 *b*	
1968	380	17,600					383 *b*	74,600 *b*	
1969	231 *b*	119,000					374 *b*	159,500 *b*	
1970	665	84,090					574 *b*	91,710 *b*	
1971	1,904	98,095					1,682	71,745	
1972	798 *b*	41,460 *b*					582 *b*	25,573	
1973	825	10,149 *b*					788	51,835	
1974		3,215 *b*					285	33,578	
1975	993	223,485					301	235,954	
1976	818	105,347					643	118,420	
1977	2,008	112,722					1,499	63,120	
1978	2,487	127,050					1,062	57,321	
1979	1,180	66,471					1,134	43,391	
1980	958 *b*	36,823 *b*					1,500	115,457	
1981	2,146 *b*	81,555	1,657 *b*	5,343 *c*	147,312 *c*		231 *b*		
1982	1,274	7,501 *b*			180,078 *c*		851	7,267 *b*	
1983				2,720 *c*	110,608 *c*				
1984	1,573 *b*	95,200 *b*			70,125 *c*		1,993	238,565	
1985	1,617	66,146					2,248	52,750	
1986	1,954	83,931		1,530 *d*	167,614 *d*		3,158	99,373	
1987	1,608	6,687 *b*		2,011 *d*	45,221 *d*		3,281	35,535	
1988	1,020	43,056	1,913	1,339 *d*	68,937 *d*		1,448	45,432	830
1989	1,399	21,460 *b*					1,089		
1990	2,503	11,519 *b*					1,545	20,426 *b*	
1991	1,938	31,886					2,544	46,657	
1992	1,030 *b*	11,308 *b*					2,002 *b*	37,808 *b*	
1993	5,855	10,935 *b*					2,765	9,111 *b*	
1994	300 *b*			7,801	200,981		213 *b*		
1995	1,635			5,841	172,148	10,901	1,108		
1996				2,955	108,450	8,037	624		
1997	1,140			3,186	51,139	9,472	1,510		
1998	1,027			4,034	67,720	5,417 *e*	1,249 *b*		
1999	*b*			3,444	32,587	2,963	870 *b*		

Appendix 1. Continued.

	East Fork Andreafsky River						Mainstem Andreafsky River		
	Aerial Index Estimates			Sonar, Tower, or Weir			Aerial Index Estimates		
Year	Chinook salmon	Chum salmon	Coho salmon	Chinook salmon	Chum salmon	Coho salmon	Chinook salmon	Chum salmon	Coho salmon
2000	1,018			1,609	24,785	8,451	427		
2001	1,065			1,148 *f*	2,134 *f*	15,896 *e*	570		
2002	1,447			4,123	44,194	3,577	977		
2003	1,116 *b*			4,336	22,461	8,231	1,578 *b*		
2004	2,879			8,045	64,883	11,146	1,317		
2005	1,715			2,239	20,127	5,303	1,492		
2006	590 *b*			6,463	102,260	23 *g*	824		
2007	1,758			4,504	69,642	9 *g*	976		
2008	278 *b*			4,242	57,259	2 *g*	262 *b*		
2009	80 *b*			3,004	8,770	4 *g*	1,664		
2010	537 *b*			2,413	72,893	10 *g*	849		
SEG *h*	960 - 1,900			2,100 - 4,900			640 - 1,600		
BEG *i*					65,000 - 130,000				

a Counts for both forks were combined into Andreafsky River count.
b Incomplete survey and/or poor survey timing or conditions resulting in minimal or inaccurate count.
c Sonar count.
d Tower count.
e Incomplete count, missing data not estimated
f Weir installed too late for an accurate count
g Incomplete count, weir removed
h Sustainable Escapement Goals.
i Biological Escapement Goals.

Appendix 2. Historical daily and cumulative Chinook salmon escapements recorded at the East Fork Andreafsky River weir 1994-2010. Quarter points, mid-points, and third-quarter points are indicated by brackets. Data for 2001 were not used in calculations and are shown for informational purposes only.

Date	1994		1995		1996		1997		1998		1999		2000		2001	
15-Jun							0	0								
16-Jun			0	0			0	0								
17-Jun			0	0			0	0			0	0				
18-Jun			0	0			0	0			0	0				
19-Jun			0	0	0	0	0	0			0	0				
20-Jun			1	1	0	0	0	0			0	0				
21-Jun			0	1	10	10	0	0			0	0				
22-Jun			1	2	0	10	0	0			0	0				
23-Jun			0	2	33	43	14	14	0	0	0	0				
24-Jun			2	4	6	49	21	35	0	0	0	0				
25-Jun			0	4	0	49	59	94	0	0	0	0				
26-Jun			0	4	59	108	0	94	0	0	0	0				
27-Jun			41	45	42	150	101	195	1	1	0	0				
28-Jun			48	93	19	169	11	206	0	1	0	0				
29-Jun	1	1	67	160	6	175	1	207	10	11	0	0				
30-Jun	188	189	104	264	8	183	0	207	34	45	47	47	9	9		
1-Jul	141	330	81	345	72	255	75	282	93	138	19	66	16	25		
2-Jul	54	384	71	416	21	276	24	306	17	155	9	75	39	64		
3-Jul	222	606	17	433	205	481	29	335	36	191	0	75	89	153		
4-Jul	156	762	55	488	124	605	49	384	75	266	12	87	74	227		
5-Jul	651	1,413	107	595	309	914	98	482	336	602	97	184	38	265		
6-Jul	225	1,638	678	1,273	258	1,172	356	838	373	975	42	226	407	672		
7-Jul	1,156	2,794	433	1,706	280	1,452	227	1,065	386	1,361	114	340	18	690		
8-Jul	108	2,902	155	1,861	244	1,696	123	1,188	204	1,565	197	537	71	761		
9-Jul	351	3,253	260	2,121	186	1,882	49	1,237	129	1,694	216	753	17	778		
10-Jul	375	3,628	250	2,371	111	1,993	64	1,301	167	1,861	256	1,009	30	808		
11-Jul	288	3,916	382	2,753	72	2,065	69	1,370	255	2,116	507	1,516	57	865		
12-Jul	581	4,497	1,022	3,775	52	2,117	88	1,458	138	2,254	214	1,730	35	900		
13-Jul	779	5,276	697	4,472	100	2,217	15	1,473	62	2,316	331	2,061	55	955		
14-Jul	433	5,709	375	4,847	96	2,313	16	1,489	61	2,377	97	2,158	18	973		
15-Jul	352	6,061	292	5,139	62	2,375	124	1,613	91	2,468	22	2,180	90	1,063	169	169
16-Jul	389	6,450	97	5,236	95	2,470	274	1,887	197	2,665	33	2,213	76	1,139	87	256
17-Jul	144	6,594	46	5,282	110	2,580	91	1,978	263	2,928	75	2,288	62	1,201	41	297
18-Jul	285	6,879	38	5,320	55	2,635	25	2,003	184	3,112	63	2,351	48	1,249	196	493
19-Jul	161	7,040	25	5,345	42	2,677	70	2,073	240	3,352	65	2,416	34	1,283	71	564
20-Jul	53	7,093	37	5,382	69	2,746	264	2,337	67	3,419	302	2,718	22	1,305	107	671
21-Jul	66	7,159	74	5,456	51	2,797	148	2,485	129	3,548	55	2,773	12	1,317	175	846
22-Jul	62	7,221	33	5,489	26	2,823	35	2,520	117	3,665	67	2,840	21	1,338	66	912
23-Jul	209	7,430	24	5,513	2	2,825	103	2,623	57	3,722	15	2,855	6	1,344	15	927
24-Jul	149	7,579	7	5,520	4	2,829	57	2,680	66	3,788	54	2,909	11	1,355	5	932
25-Jul	25	7,604	78	5,598	6	2,835	0	2,680	12	3,800	24	2,933	10	1,365	17	949
26-Jul	51	7,655	21	5,619	3	2,838	11	2,691	8	3,808	5	2,938	9	1,374	7	956
27-Jul	92	7,747	12	5,631	6	2,844	3	2,694	8	3,816	34	2,972	7	1,381	17	973
28-Jul	20	7,767	15	5,646	16	2,860	29	2,723	11	3,827	6	2,978	3	1,384	10	983
29-Jul	10	7,777	9	5,655	13	2,873	58	2,781	23	3,850	159	3,137	57	1,441	41	1,024
30-Jul	13	7,790	5	5,660	7	2,880	144	2,925	31	3,881	80	3,217	4	1,445	16	1,040
31-Jul	10	7,800	1	5,661	10	2,890	2	2,927	17	3,898	59	3,276	20	1,465	11	1,051
1-Aug	1	7,801	8	5,669	4	2,894	8	2,935	20	3,918	38	3,314	12	1,477	8	1,059
2-Aug			2	5,671	2	2,896	4	2,939	4	3,922	18	3,332	4	1,481	12	1,071
3-Aug			13	5,684	2	2,898	128	3,067	11	3,933	42	3,374	24	1,505	4	1,075
4-Aug			5	5,689	5	2,903	2	3,069	1	3,934	11	3,385	19	1,524	8	1,083
5-Aug			6	5,695	6	2,909	1	3,070	7	3,941	5	3,390	14	1,538	6	1,089
6-Aug			6	5,701	2	2,911	0	3,070	9	3,950	2	3,392	9	1,547	1	1,090
7-Aug			19	5,720	7	2,918	1	3,071	10	3,960	1	3,393	4	1,551	11	1,101
8-Aug - 23- Sept			121	5,841	37	2,955	115	3,186	74	4,034	51	3,444	58	1,609	47	1,148
Total	7,801		5,841		2,955		3,186		4,034		3,444		1,609		**	

Appendix 2. Continued.

Date	2002		2003		2004		2005		2006		2007		2008		2009		2010	
15-Jun																		
16-Jun																		
17-Jun																		
18-Jun																		
19-Jun	0	0	0	0							0	0						
20-Jun	0	0	0	0							0	0					0	0
21-Jun	1	1	0	0							0	0	0	0			0	0
22-Jun	20	21	0	0							0	0	0	0	0	0	0	0
23-Jun	0	21	4	4	67	67					0	0	0	0	0	0	0	0
24-Jun	0	21	2	6	26	93					0	0	0	0	0	0	0	0
25-Jun	3	24	7	13	15	108					7	7	1	1	0	0	0	0
26-Jun	1	25	3	16	55	163	16	16			2	9	0	1	0	0	1	1
27-Jun	26	51	12	28	181	344	2	18			0	9	5	6	0	0	3	4
28-Jun	314	365	19	47	534	878	42	60	0	0	0	9	1	7	0	0	0	4
29-Jun	119	484	4	51	290	1,168	88	148	6	6	4	13	10	17	0	0	13	17
30-Jun	27	511	0	51	461	1,629	238	386	51	57	7	20	7	24	0	0	16	33
1-Jul	319	830	176	227	582	2,211	11	397	40	97	134	154	14	38	1	1	18	51
2-Jul	105	935	295	522	25	2,236	89	486	13	110	197	351	44	82	1	2	41	92
3-Jul	230	1,165	22	544	375	2,611	135	621	51	161	75	426	41	123	2	4	54	146
4-Jul	5	1,170	6	550	353	2,964	114	735	128	289	277	703	50	173	0	4	25	171
5-Jul	20	1,190	83	633	263	3,227	111	846	276	565	141	844	133	306	0	4	41	212
6-Jul	356	1,546	136	769	1,187	4,414	154	1,000	437	1,002	476	1,320	301	607	3	7	124	336
7-Jul	307	1,853	336	1,105	878	5,292	271	1,271	574	1,576	442	1,762	610	1,217	15	22	16	352
8-Jul	130	1,983	469	1,574	463	5,755	169	1,440	392	1,968	157	1,919	777	1,994	7	29	36	388
9-Jul	178	2,161	823	2,397	503	6,258	46	1,486	86	2,054	299	2,218	110	2,104	0	29	353	741
10-Jul	191	2,352	48	2,445	368	6,626	7	1,493	165	2,219	255	2,473	7	2,111	2	31	295	1,036
11-Jul	264	2,616	107	2,552	122	6,748	15	1,508	449	2,668	86	2,559	11	2,122	34	65	69	1,105
12-Jul	166	2,782	345	2,897	315	7,063	9	1,517	1,108	3,776	653	3,212	23	2,145	247	312	92	1,197
13-Jul	191	2,973	311	3,208	106	7,169	58	1,575	201	3,977	103	3,315	53	2,198	106	418	24	1,221
14-Jul	158	3,131	340	3,548	105	7,274	108	1,683	67	4,044	96	3,411	76	2,274	142	560	34	1,255
15-Jul	140	3,271	2	3,550	53	7,327	49	1,732	117	4,161	28	3,439	265	2,539	13	573	27	1,282
16-Jul	210	3,481	7	3,557	58	7,385	55	1,787	262	4,423	25	3,464	355	2,894	13	586	278	1,560
17-Jul	119	3,600	25	3,582	54	7,439	30	1,817	714	5,137	34	3,498	277	3,171	251	837	274	1,834
18-Jul	94	3,694	235	3,817	29	7,468	14	1,831	371	5,508	132	3,630	283	3,454	37	874	21	1,855
19-Jul	75	3,769	158	3,975	40	7,508	22	1,853	264	5,772	78	3,708	130	3,584	76	950	7	1,862
20-Jul	50	3,819	28	4,003	57	7,565	17	1,870	164	5,936	35	3,743	57	3,641	53	1,003	9	1,871
21-Jul	29	3,848	10	4,013	40	7,605	50	1,920	161	6,097	95	3,838	58	3,699	112	1,115	32	1,903
22-Jul	12	3,860	2	4,015	13	7,618	51	1,971	166	6,263	249	4,087	130	3,829	201	1,316	22	1,925
23-Jul	32	3,892	23	4,038	17	7,635	15	1,986	117	6,380	59	4,146	104	3,933	222	1,538	47	1,972
24-Jul	16	3,908	58	4,096	12	7,647	22	2,008	48	6,428	63	4,209	75	4,008	126	1,664	59	2,031
25-Jul	7	3,915	31	4,127	19	7,666	46	2,054	25	6,453	102	4,311	49	4,057	104	1,768	59	2,090
26-Jul	3	3,918	4	4,131	5	7,671	4	2,058	8	6,461	33	4,344	35	4,092	39	1,807	81	2,171
27-Jul	6	3,924	22	4,153	14	7,685	4	2,062	2	6,463	149	4,493	26	4,118	37	1,844	23	2,194
28-Jul	3	3,927	108	4,261	23	7,708	4	2,066			4	4,497	61	4,179	262	2,106	94	2,288
29-Jul	4	3,931	28	4,289	19	7,727	0	2,066			4	4,501	39	4,218	221	2,327	101	2,389
30-Jul	2	3,933	4	4,293	7	7,734	4	2,070			3	4,504	24	4,242	172	2,499	14	2,403
31-Jul	46	3,979	0	4,293	15	7,749	3	2,073							178	2,677	10	2,413
1-Aug	55	4,034	2	4,295	13	7,762	2	2,075							171	2,848		
2-Aug	48	4,082	5	4,300	4	7,766	2	2,077							94	2,942		
3-Aug	10	4,092	1	4,301	3	7,769	8	2,085							62	3,004		
4-Aug	3	4,095	1	4,302	6	7,775	4	2,089										
5-Aug	3	4,098	4	4,306	5	7,780	8	2,097										
6-Aug	4	4,102	0	4,306	10	7,790	4	2,101										
7-Aug	4	4,106	1	4,307	8	7,798	3	2,104										
8-Aug - 23- Sept	17	4,123	29	4,336	247	8,045	135	2,239										
Total	4,123		4,336		8,045		2,239		6,463		4,504		4,242		3,004		2,413	

= estimated escapement counts.
= partial day's count adjusted to 24 hours.
** = incomplete count, missing data not estimated.

Appendix 3. Historical daily and cumulative summer chum salmon estimates recorded at the East Fork Andreafsky River weir 1994-2010. Quarter points, mid-points, and third-quarter points are indicated by brackets. Data for 2001 were not used in calculations and are shown for informational purposes only.

Date	1994		1995		1996		1997		1998		1999		2000		2001	
15-Jun							0	0								
16-Jun			52	52			1	1								
17-Jun			332	384			4	5			0	0				
18-Jun			191	575			71	76			0	0				
19-Jun			423	998	62	62	539	615			0	0				
20-Jun			2,198	3,196	424	486	981	1,596			0	0				
21-Jun			861	4,057	3,315	3,801	192	1,788			0	0				
22-Jun			1,170	5,227	1,036	4,837	53	1,841			0	0				
23-Jun			228	5,455	11,195	16,032	3,141	4,982	13	13	1	1				
24-Jun			1,951	7,406	798	16,830	1,620	6,602	18	31	1	2				
25-Jun			364	7,770	303	17,133	1,422	8,024	264	295	0	2				
26-Jun			504	8,274	7,306	24,439	208	8,232	175	470	7	9				
27-Jun			12,620	20,894	3,435	27,874	1,691	9,923	535	1,005	8	17				
28-Jun			11,201	32,095	1,463	29,337	1,196	11,119	65	1,070	0	17				
29-Jun	609	609	9,256	41,351	2,335	31,672	61	11,180	3,153	4,223	331	348				
30-Jun	19,254	19,863	10,938	52,289	314	31,986	80	11,260	4,585	8,808	4,459	4,807	837	837		
1-Jul	12,435	32,298	8,654	60,943	9,164	41,150	1,537	12,797	4,003	12,811	765	5,572	1,725	2,562		
2-Jul	2,840	35,138	5,553	66,496	3,326	44,476	619	13,416	652	13,463	459	6,031	1,460	4,022		
3-Jul	4,973	40,111	2,710	69,206	8,973	53,449	756	14,172	1,687	15,150	24	6,055	1,750	5,772		
4-Jul	13,321	53,432	10,678	79,884	10,018	63,467	1,264	15,436	3,561	18,711	3,000	9,055	2,070	7,842		
5-Jul	12,552	65,984	10,026	89,910	7,355	70,822	831	16,267	7,996	26,707	4,605	13,660	2,300	10,142		
6-Jul	4,043	70,027	23,584	113,494	3,351	74,173	3,428	19,695	6,030	32,737	1,185	14,845	3,717	13,859		
7-Jul	27,527	97,554	8,514	122,008	3,124	77,297	2,980	22,675	4,696	37,433	1,619	16,464	72	13,931		
8-Jul	5,251	102,805	732	122,740	4,771	82,068	2,440	25,115	3,088	40,521	1,569	18,033	1,548	15,479		
9-Jul	3,883	106,688	4,808	127,548	3,500	85,568	1,799	26,914	845	41,366	1,754	19,787	942	16,421		
10-Jul	12,416	119,104	6,473	134,021	2,303	87,871	3,195	30,109	1,003	42,369	2,135	21,922	727	17,148		
11-Jul	6,896	126,000	6,072	140,093	1,275	89,146	1,792	31,901	4,003	46,372	1,897	23,819	855	18,003		
12-Jul	8,424	134,424	3,973	144,066	1,497	90,643	1,738	33,639	4,401	50,773	501	24,320	477	18,480		
13-Jul	14,628	149,052	4,552	148,618	1,680	92,323	1,062	34,701	829	51,602	710	25,030	911	19,391		
14-Jul	11,611	160,663	2,990	151,608	1,038	93,361	1,302	36,003	1,248	52,850	1,223	26,253	352	19,743		
15-Jul	8,275	168,938	2,874	154,482	935	94,296	3,222	39,225	2,160	55,010	412	26,665	638	20,381	196	196
16-Jul	4,690	173,628	3,449	157,931	1,280	95,576	2,441	41,666	2,747	57,757	507	27,172	551	20,932	133	329
17-Jul	4,886	178,514	2,739	160,670	774	96,350	1,150	42,816	3,038	60,795	547	27,719	464	21,396	95	424
18-Jul	4,532	183,046	1,495	162,165	852	97,202	715	43,531	1,580	62,375	494	28,213	377	21,773	229	653
19-Jul	2,977	186,023	651	162,816	1,848	99,050	624	44,155	1,365	63,740	666	28,879	290	22,063	102	755
20-Jul	1,091	187,114	1,150	163,966	1,721	100,771	1,220	45,375	370	64,110	816	29,695	206	22,269	74	829
21-Jul	1,351	188,465	807	164,773	1,116	101,887	800	46,175	335	64,445	242	29,937	424	22,693	228	1,057
22-Jul	2,228	190,693	591	165,364	605	102,492	668	46,843	304	64,749	240	30,177	280	22,973	72	1,129
23-Jul	1,320	192,013	742	166,106	246	102,738	405	47,248	248	64,997	201	30,378	116	23,089	29	1,158
24-Jul	868	192,881	290	166,396	291	103,029	313	47,561	200	65,197	173	30,551	84	23,173	32	1,190
25-Jul	1,349	194,230	1,214	167,610	196	103,225	121	47,682	220	65,417	131	30,682	159	23,332	155	1,345
26-Jul	1,977	196,207	521	168,131	365	103,590	339	48,021	166	65,583	73	30,755	130	23,462	116	1,461
27-Jul	2,196	198,403	605	168,736	278	103,868	400	48,421	130	65,713	132	30,887	64	23,526	110	1,571
28-Jul	841	199,244	265	169,001	738	104,606	219	48,640	202	65,915	92	30,979	43	23,569	88	1,659
29-Jul	564	199,808	211	169,212	334	104,940	234	48,874	145	66,060	245	31,224	173	23,742	78	1,737
30-Jul	524	200,332	248	169,460	272	105,212	131	49,005	115	66,175	242	31,466	70	23,812	37	1,774
31-Jul	410	200,742	94	169,554	260	105,472	86	49,091	140	66,315	200	31,666	172	23,984	10	1,784
1-Aug	239	200,981	160	169,714	93	105,565	134	49,225	191	66,506	158	31,824	89	24,073	24	1,808
2-Aug			81	169,795	158	105,723	81	49,306	91	66,597	118	31,942	125	24,198	40	1,848
3-Aug			147	169,942	91	105,814	182	49,488	76	66,673	124	32,066	109	24,307	28	1,876
4-Aug			59	170,001	192	106,006	48	49,536	56	66,729	117	32,183	83	24,390	17	1,893
5-Aug			77	170,078	132	106,138	101	49,637	73	66,802	45	32,228	57	24,447	13	1,906
6-Aug			115	170,193	215	106,353	77	49,714	71	66,873	17	32,245	31	24,478	2	1,908
7-Aug			76	170,269	163	106,516	29	49,743	104	66,977	11	32,256	5	24,483	7	1,915
8-Aug - 23-Sept			1,879	172,148	1,934	108,450	1,396	51,139	743	67,720	331	32,587	302	24,785	219	2,134
Total	200,981		172,148		108,450		51,139		67,720		32,587		24,785		**	

Appendix 3. Continued.

Date	2002		2003		2004		2005		2006		2007		2008		2009		2010	
15-Jun																		
16-Jun																		
17-Jun																		
18-Jun																		
19-Jun	0	0	0	0							0	0						
20-Jun	0	0	0	0							0	0					0	0
21-Jun	117	117	2	2							0	0	1	1			0	0
22-Jun	1,782	1,899	87	89							2	2	57	58	0	0	0	0
23-Jun	0	1,899	564	653	3,045	3,045					0	2	30	88	0	0	2	2
24-Jun	6	1,905	182	835	1,062	4,107					29	31	73	161	6	6	0	2
25-Jun	522	2,427	484	1,319	985	5,092					1166	1,197	34	195	10	16	6	8
26-Jun	694	3,121	183	1,502	2,467	7,559	256	256			348	1,545	1160	1,355	0	16	410	418
27-Jun	2,448	5,569	396	1,898	4,638	12,197	9	265			70	1,615	902	2,257	5	21	285	703
28-Jun	6,754	12,323	546	2,444	8,461	20,658	424	689	1,272	1,272	362	1,977	865	3,122	19	40	53	756
29-Jun	1,765	14,088	219	2,663	3,807	24,465	473	1,162	2,822	4,094	1644	3,621	1920	5,042	289	329	5435	6,191
30-Jun	836	14,924	271	2,934	7,081	31,546	432	1,594	14,912	19,006	1785	5,406	1095	6,137	78	407	3088	9,279
1-Jul	4,403	19,327	928	3,862	1,590	33,136	239	1,833	10,229	29,235	3581	8,987	1718	7,855	228	635	1534	10,813
2-Jul	2,467	21,794	339	4,201	153	33,289	1,081	2,914	2,395	31,630	3463	12,450	2963	10,818	417	1,052	3196	14,009
3-Jul	2,291	24,085	713	4,914	5,689	38,978	1,063	3,977	7,291	38,921	2694	15,144	2367	13,185	114	1,166	5269	19,278
4-Jul	28	24,113	175	5,089	3,940	42,918	1,238	5,215	14,018	52,939	4834	19,978	4572	17,757	10	1,176	3338	22,616
5-Jul	347	24,460	484	5,573	2,011	44,929	993	6,208	9,389	62,328	4725	24,703	8125	25,882	17	1,193	2689	25,305
6-Jul	4,423	28,883	1,051	6,624	1,791	46,720	1,218	7,426	7,738	70,066	3852	28,555	5285	31,167	1137	2,330	7086	32,391
7-Jul	2,254	31,137	1,376	8,000	2,474	49,194	1,839	9,265	4,225	74,291	1980	30,535	2598	33,765	583	2,913	1136	33,527
8-Jul	845	31,982	2,476	10,476	2,096	51,290	1,270	10,535	3,614	77,905	1919	32,454	2763	36,528	42	2,955	5336	38,863
9-Jul	2,265	34,247	2,025	12,501	1,990	53,280	1,112	11,647	2,351	80,256	4559	37,013	1438	37,966	11	2,966	7921	46,784
10-Jul	1,732	35,979	244	12,745	2,069	55,349	1,370	13,017	3,478	83,734	6021	43,034	193	38,159	176	3,142	3878	50,662
11-Jul	1,221	37,200	412	13,157	1,609	56,958	195	13,212	2,631	86,365	1455	44,489	300	38,459	549	3,691	1808	52,470
12-Jul	1,099	38,299	1,762	14,919	1,815	58,773	197	13,409	1,609	87,974	2362	46,851	1276	39,735	634	4,325	1470	53,940
13-Jul	1,055	39,354	586	15,505	1,071	59,844	1,458	14,867	725	88,699	1219	48,070	1955	41,690	269	4,594	702	54,642
14-Jul	544	39,898	254	15,759	896	60,740	1,242	16,109	330	89,029	1394	49,464	2019	43,709	547	5,141	1391	56,033
15-Jul	1,014	40,912	33	15,792	605	61,345	557	16,666	1,127	90,156	860	50,324	2322	46,031	411	5,552	1405	57,438
16-Jul	581	41,493	123	15,915	569	61,914	449	17,115	1,441	91,597	1867	52,191	3646	49,677	498	6,050	4138	61,576
17-Jul	420	41,913	445	16,360	465	62,379	196	17,311	2,564	94,161	3294	55,485	1497	51,174	483	6,533	2378	63,954
18-Jul	492	42,405	1,078	17,438	326	62,705	246	17,557	1,637	95,798	3834	59,319	1324	52,498	224	6,757	281	64,235
19-Jul	392	42,797	708	18,146	217	62,922	141	17,698	1,294	97,092	1349	60,668	896	53,394	176	6,933	400	64,635
20-Jul	192	42,989	681	18,827	276	63,198	523	18,221	924	98,016	468	61,136	691	54,085	186	7,119	525	65,160
21-Jul	153	43,142	283	19,110	142	63,340	493	18,714	944	98,960	700	61,836	594	54,679	235	7,354	1189	66,349
22-Jul	61	43,203	47	19,157	59	63,399	182	18,896	921	99,881	1895	63,731	572	55,251	332	7,686	930	67,279
23-Jul	201	43,404	306	19,463	77	63,476	167	19,063	715	100,596	1417	65,148	535	55,786	175	7,861	785	68,064
24-Jul	98	43,502	222	19,685	116	63,592	54	19,117	548	101,144	1208	66,356	383	56,169	164	8,025	896	68,960
25-Jul	26	43,528	348	20,033	171	63,763	80	19,197	452	101,596	1784	68,140	335	56,504	113	8,138	1030	69,990
26-Jul	22	43,550	218	20,251	85	63,848	28	19,225	334	101,930	645	68,785	142	56,646	165	8,303	686	70,676
27-Jul	60	43,610	220	20,471	69	63,917	32	19,257	330	102,260	444	69,229	191	56,837	72	8,375	585	71,261
28-Jul	123	43,733	389	20,860	73	63,990	100	19,357			95	69,324	149	56,986	148	8,523	956	72,217
29-Jul	17	43,750	220	21,080	52	64,042	112	19,469			179	69,503	168	57,154	47	8,570	284	72,501
30-Jul	36	43,786	61	21,141	37	64,079	74	19,543			139	69,642	105	57,259	33	8,603	200	72,701
31-Jul	119	43,905	80	21,221	34	64,113	79	19,622							33	8,636	192	72,893
1-Aug	81	43,986	104	21,325	17	64,130	50	19,672							25	8,661		72,893
2-Aug	33	44,019	111	21,436	21	64,151	25	19,697							64	8,725		72,893
3-Aug	36	44,055	40	21,476	28	64,179	23	19,720							45	8,770		72,893
4-Aug	40	44,095	91	21,567	22	64,201	5	19,725										
5-Aug	3	44,098	182	21,749	25	64,226	24	19,749										
6-Aug	7	44,105	52	21,801	31	64,257	30	19,779										
7-Aug	13	44,118	85	21,886	33	64,290	14	19,793										
8-Aug - 23-Sept	76	44,194	575	22,461	593	64,883	334	20,127										
Total	44,194		22,461		64,883		20,127		102,260		69,642		57,259		8,770		72,893	

= estimated escapement counts.
= partial day's count adjusted to 24 hours.
** = incomplete count, missing data not estimated.

Appendix 4. Historical daily and cumulative pink salmon escapement estimates recorded at the East Fork Andreafsky River weir, 1994-2010. Data for 2001 were not used in calculations and are shown for informational purposes only.

Date	1994		1995		1996		1997		1998		1999		2000		2001	
15-Jun							0	0								
16-Jun			0	0			0	0								
17-Jun			0	0			0	0			0	0				
18-Jun			0	0			0	0			0	0				
19-Jun			0	0	12	12	0	0			0	0				
20-Jun			0	0	4	16	0	0			0	0				
21-Jun			0	0	40	56	0	0			0	0				
22-Jun			0	0	42	98	0	0			0	0				
23-Jun			0	0	157	255	0	0	0	0	0	0				
24-Jun			0	0	67	322	0	0	0	0	0	0				
25-Jun			0	0	24	346	0	0	8	8	0	0				
26-Jun			0	0	153	499	0	0	3	11	0	0				
27-Jun			1	1	218	717	1	1	22	33	0	0				
28-Jun			0	1	80	797	0	1	2	35	0	0				
29-Jun	8	8	2	3	78	875	0	1	112	147	0	0				
30-Jun	451	459	3	6	41	916	0	1	258	405	0	0	18	18		
1-Jul	409	868	13	19	184	1,100	2	3	750	1,155	0	0	5	23		
2-Jul	194	1,062	4	23	107	1,207	0	3	65	1,220	0	0	383	406		
3-Jul	305	1,367	4	27	347	1,554	0	3	704	1,924	0	0	52	458		
4-Jul	780	2,147	5	32	1,254	2,808	1	4	1,008	2,932	0	0	224	682		
5-Jul	1,027	3,174	9	41	6,678	9,486	0	4	3,595	6,527	0	0	162	844		
6-Jul	772	3,946	98	139	4,676	14,162	2	6	4,136	10,663	2	2	1,228	2,072		
7-Jul	4,026	7,972	77	216	3,834	17,996	0	6	4,292	14,955	2	4	354	2,426		
8-Jul	1,736	9,708	4	220	7,472	25,468	1	7	2,968	17,923	1	5	972	3,398		
9-Jul	4,263	13,971	18	238	8,905	34,373	2	9	1,382	19,305	2	7	1,680	5,078		
10-Jul	4,744	18,715	33	271	10,290	44,663	1	10	1,169	20,474	10	17	897	5,975		
11-Jul	3,313	22,028	23	294	5,822	50,485	2	12	9,872	30,346	20	37	7,849	13,824		
12-Jul	8,447	30,475	100	394	4,662	55,147	4	16	21,285	51,631	17	54	2,726	16,550		
13-Jul	13,568	44,043	109	503	9,484	64,631	6	22	11,399	63,030	18	72	7,044	23,594		
14-Jul	24,842	68,885	94	597	11,760	76,391	1	23	5,846	68,876	7	79	1,468	25,062		
15-Jul	22,460	91,345	81	678	9,754	86,145	35	58	21,785	90,661	2	81	966	26,028	10	10
16-Jul	20,612	111,957	64	742	13,476	99,621	31	89	11,087	101,748	2	83	1,206	27,234	4	14
17-Jul	27,053	139,010	60	802	12,222	111,843	13	102	23,930	125,678	4	87	1,446	28,680	5	19
18-Jul	18,277	157,287	31	833	12,682	124,525	5	107	31,639	157,317	4	91	1,686	30,366	26	45
19-Jul	20,792	178,079	15	848	14,282	138,807	6	113	27,014	184,331	14	105	1,926	32,292	15	60
20-Jul	23,511	201,590	30	878	17,477	156,284	4	117	7,204	191,535	69	174	2,170	34,462	47	107
21-Jul	10,872	212,462	40	918	18,780	175,064	4	121	4,672	196,207	38	212	2,549	37,011	61	168
22-Jul	8,975	221,437	48	966	13,018	188,082	4	125	2,460	198,667	41	253	1,143	38,154	19	187
23-Jul	17,692	239,129	77	1,043	4,744	192,826	5	130	3,512	202,179	25	278	454	38,608	18	205
24-Jul	15,120	254,249	25	1,068	3,778	196,604	2	132	7,181	209,360	23	301	609	39,217	38	243
25-Jul	3,566	257,815	216	1,284	2,473	199,077	0	132	5,278	214,638	22	323	1,055	40,272	124	367
26-Jul	10,225	268,040	88	1,372	3,365	202,442	6	138	3,496	218,134	11	334	335	40,607	53	420
27-Jul	13,821	281,861	37	1,409	3,768	206,210	13	151	1,186	219,320	24	358	731	41,338	68	488
28-Jul	15,302	297,163	20	1,429	5,036	211,246	9	160	1,496	220,816	11	369	612	41,950	94	582
29-Jul	9,736	306,899	14	1,443	1,035	212,281	20	180	1,134	221,950	26	395	415	42,365	56	638
30-Jul	6,159	313,058	29	1,472	205	212,486	26	206	982	222,932	13	408	202	42,567	22	660
31-Jul	2,476	315,534	11	1,483	706	213,192	2	208	1,315	224,247	10	418	244	42,811	10	670
1-Aug	996	316,530	22	1,505	169	213,361	7	215	962	225,209	8	426	145	42,956	17	687
2-Aug			23	1,528	107	213,468	2	217	474	225,683	5	431	129	43,085	19	706
3-Aug			44	1,572	127	213,595	8	225	440	226,123	48	479	81	43,166	17	723
4-Aug			20	1,592	300	213,895	3	228	303	226,426	60	539	65	43,231	12	735
5-Aug			17	1,609	237	214,132	3	231	127	226,553	28	567	49	43,280	5	740
6-Aug			22	1,631	61	214,193	1	232	73	226,626	14	581	33	43,313	10	750
7-Aug			37	1,668	109	214,302	1	233	104	226,730	13	594	17	43,330	10	760
8-Aug - 23-Sept			304	1,972	535	214,837	196	429	478	227,208	175	769	161	43,491	60	820
Total	316,530	*	1,972		214,837		429		227,208		769		43,491		820	**

Appendix 4. Continued.

Date	2002		2003		2004		2005		2006		2007		2008		2009		2010	
15-Jun																		
16-Jun																		
17-Jun																		
18-Jun																		
19-Jun	0	0	0	0							0	0						
20-Jun	0	0	0	0							0	0					0	0
21-Jun	52	52	0	0							0	0	0	0			0	0
22-Jun	462	514	0	0							0	0	10	10	0	0	2	2
23-Jun	0	514	0	0	19	19					0	0	13	23	0	0	0	2
24-Jun	22	536	0	0	15	34					0	0	5	28	0	0	2	4
25-Jun	148	684	3	3	24	58					0	0	83	111	0	0	8	12
26-Jun	338	1,022	0	3	102	160	0	0			0	0	214	325	0	0	69	81
27-Jun	431	1,453	6	9	189	349	2	2			0	0	343	668	0	0	105	186
28-Jun	7,808	9,261	4	13	341	690	10	12	43	43	0	0	393	1,061	0	0	8	194
29-Jun	5,076	14,337	3	16	374	1,064	27	39	54	97	3	3	964	2,025	0	0	1,756	1,950
30-Jun	1,509	15,846	0	16	1,671	2,735	97	136	314	411	2	5	580	2,605	0	0	2,641	4,591
1-Jul	6,192	22,038	16	32	1,049	3,784	15	151	281	692	5	10	883	3,488	0	0	1,284	5,875
2-Jul	3,345	25,383	12	44	140	3,924	89	240	134	826	38	48	2,197	5,685	2	2	8,021	13,896
3-Jul	6,876	32,259	13	57	1,186	5,110	453	693	326	1,152	36	84	1,969	7,654	2	4	7,348	21,244
4-Jul	257	32,516	13	70	2,327	7,437	652	1,345	1,431	2,583	143	227	4,814	12,468	0	4	3,307	24,551
5-Jul	1,626	34,142	16	86	5,175	12,612	985	2,330	1,325	3,908	184	411	19,968	32,436	1	5	1,633	26,184
6-Jul	13,433	47,575	24	110	4,203	16,815	2,334	4,664	3,092	7,000	251	662	19,672	52,108	6	11	4,088	30,272
7-Jul	10,268	57,843	94	204	17,994	34,809	3,071	7,735	8,096	15,096	164	826	24,204	76,312	26	37	246	30,518
8-Jul	4,815	62,658	172	376	13,079	47,888	2,443	10,178	13,219	28,315	125	951	16,687	92,999	38	75	3,532	34,050
9-Jul	8,765	71,423	259	635	16,044	63,932	1,692	11,870	7,941	36,256	278	1,229	4,900	97,899	9	84	25,726	59,776
10-Jul	12,942	84,365	16	651	22,171	86,103	1,266	13,136	11,605	47,861	461	1,690	331	98,230	9	93	28,744	88,520
11-Jul	10,764	95,129	43	694	15,664	101,767	1,453	14,589	13,327	61,188	112	1,802	247	98,477	57	150	12,550	101,070
12-Jul	9,207	104,336	185	879	15,661	117,428	385	14,974	14,844	76,032	315	2,117	645	99,122	73	223	10,095	111,165
13-Jul	9,161	113,497	173	1,052	15,313	132,741	2,865	17,839	7,204	83,236	74	2,191	1,351	100,473	84	307	6,127	117,292
14-Jul	7,819	121,316	189	1,241	25,780	158,521	5,106	22,945	1,117	84,353	129	2,320	1,559	102,032	94	401	5,145	122,437
15-Jul	6,958	128,274	28	1,269	16,578	175,099	2,489	25,434	2,858	87,211	103	2,423	3,432	105,464	94	495	6,053	128,490
16-Jul	8,224	136,498	13	1,282	22,322	197,421	1,992	27,426	2,816	90,027	367	2,790	6,532	111,996	74	569	37,603	166,093
17-Jul	6,724	143,222	96	1,378	16,143	213,564	678	28,104	8,969	98,996	518	3,308	6,793	118,789	90	659	42,852	208,945
18-Jul	8,701	151,923	702	2,080	14,713	228,277	945	29,049	17,205	116,201	843	4,151	7,304	126,093	125	784	12,174	221,119
19-Jul	6,058	157,981	459	2,539	15,635	243,912	450	29,499	18,690	134,891	524	4,675	7,461	133,554	99	883	10,984	232,103
20-Jul	1,983	159,964	288	2,827	28,631	272,543	1,140	30,639	18,357	153,248	642	5,317	5,356	138,910	94	977	13,445	245,548
21-Jul	1,239	161,203	98	2,925	19,851	292,394	1,852	32,491	13,319	166,567	342	5,659	6,588	145,498	239	1,216	12,256	257,804
22-Jul	564	161,767	18	2,943	12,446	304,840	814	33,305	16,186	182,753	1,040	6,699	2,759	148,257	133	1,349	15,201	273,005
23-Jul	1,060	162,827	107	3,050	9,880	314,720	723	34,028	11,435	194,188	393	7,092	2,995	151,252	183	1,532	11,412	284,417
24-Jul	1,092	163,919	107	3,157	9,973	324,693	256	34,284	9,612	203,800	306	7,398	5,388	156,640	191	1,723	6,490	290,907
25-Jul	385	164,304	124	3,281	12,352	337,045	158	34,442	6,890	210,690	1,231	8,629	2,986	159,626	83	1,806	10,558	301,465
26-Jul	429	164,733	43	3,324	12,184	349,229	425	34,867	4,746	215,436	475	9,104	2,450	162,076	104	1,910	9,282	310,747
27-Jul	232	164,965	47	3,371	10,978	360,207	307	35,174	5,299	220,735	403	9,507	4,106	166,182	107	2,017	9,708	320,455
28-Jul	305	165,270	130	3,501	9,686	369,893	889	36,063			143	9,650	7,982	174,164	156	2,173	7,151	327,606
29-Jul	49	165,319	140	3,641	7,911	377,804	744	36,807			206	9,856	8,201	182,365	45	2,218	2,908	330,514
30-Jul	62	165,381	29	3,670	5,421	383,225	687	37,494			236	10,092	7,543	189,908	32	2,250	4,733	335,247
31-Jul	232	165,613	65	3,735	4,258	387,483	341	37,835							38	2,288	3,811	339,058
1-Aug	131	165,744	69	3,804	2,669	390,152	430	38,265							28	2,316		
2-Aug	61	165,805	54	3,858	2,342	392,494	140	38,405							50	2,366		
3-Aug	73	165,878	33	3,891	1,206	393,700	79	38,484							29	2,395		
4-Aug	34	165,912	34	3,925	843	394,543	55	38,539										
5-Aug	11	165,923	35	3,960	890	395,433	91	38,630										
6-Aug	13	165,936	17	3,977	729	396,162	114	38,744										
7-Aug	7	165,943	20	3,997	789	396,951	41	38,785										
8-Aug - 23-Sept	48	165,991	306	4,303	2,719	399,670	245	39,030										
Total	165,991		4,303		399,670		39,030		220,735	*	10,092	*	189,908	*	2,395	*	339,058	*

= estimated escapement count
= partial day's count adjusted to 24 hours
** = incomplete count, missing data not estimated.
* = incomplete count, weir removed

Appendix 5. Historical daily and cumulative sockeye salmon estimates recorded at the East Fork Andreafsky River weir, 1994-2010. Data for 2001 were not used in calculations and are shown for informational purposes only.

Date	1994		1995		1996		1997		1998		1999		2000		2001		2002	
15-Jun							0	0										
16-Jun			0	0			0	0										
17-Jun			0	0			0	0			0	0						
18-Jun			0	0			0	0			0	0						
19-Jun			0	0	0	0	0	0			0	0					0	0
20-Jun			0	0	0	0	0	0			0	0					0	0
21-Jun			0	0	0	0	0	0			0	0					0	0
22-Jun			0	0	0	0	0	0			0	0					0	0
23-Jun			0	0	0	0	0	0	0	0	0	0					0	0
24-Jun			0	0	0	0	0	0	0	0	0	0					0	0
25-Jun			0	0	0	0	0	0	0	0	0	0					0	0
26-Jun			0	0	0	0	0	0	0	0	0	0					0	0
27-Jun			0	0	0	0	0	0	0	0	0	0					0	0
28-Jun			0	0	0	0	0	0	0	0	0	0					0	0
29-Jun	0	0	0	0	0	0	1	1	3	3	1	1					0	0
30-Jun	0	0	0	0	0	0	0	1	0	3	0	1	0	0			0	0
1-Jul	0	0	2	2	0	0	1	2	0	3	0	1	0	0			0	0
2-Jul	0	0	0	2	6	6	0	2	0	3	0	1	0	0			0	0
3-Jul	0	0	1	3	9	15	0	2	0	3	0	1	0	0			0	0
4-Jul	0	0	0	3	16	31	0	2	0	3	1	2	0	0			0	0
5-Jul	0	0	1	4	6	37	0	2	0	3	8	10	0	0			0	0
6-Jul	0	0	4	8	1	38	0	2	0	3	1	11	0	0			1	1
7-Jul	2	2	0	8	7	45	1	3	0	3	2	13	0	0			0	1
8-Jul	1	3	0	8	0	45	0	3	3	6	6	19	0	0			0	1
9-Jul	0	3	0	8	10	55	0	3	0	6	2	21	0	0			0	1
10-Jul	0	3	1	9	6	61	1	4	0	6	0	21	0	0			0	1
11-Jul	1	4	1	10	6	67	0	4	4	10	7	28	1	1			0	1
12-Jul	0	4	0	10	8	75	0	4	8	18	0	28	0	1			1	2
13-Jul	0	4	0	10	7	82	0	4	3	21	0	28	0	1			0	2
14-Jul	0	4	0	10	9	91	2	6	0	21	0	28	1	2			0	2
15-Jul	1	5	0	10	4	95	1	7	10	31	0	28	0	2	0	0	0	2
16-Jul	2	7	0	10	5	100	2	9	7	38	1	29	0	2	0	0	3	5
17-Jul	0	7	0	10	4	104	1	10	5	43	5	34	0	2	0	0	1	6
18-Jul	2	9	3	13	8	112	1	11	13	56	2	36	0	2	1	1	2	8
19-Jul	0	9	0	13	7	119	0	11	17	73	0	36	0	2	0	1	3	11
20-Jul	3	12	1	14	6	125	1	12	3	76	2	38	0	2	0	1	1	12
21-Jul	2	14	2	16	3	128	0	12	1	77	0	38	0	2	0	1	1	13
22-Jul	0	14	0	16	4	132	2	14	6	83	0	38	0	2	4	5	1	14
23-Jul	0	14	0	16	4	136	1	15	3	86	0	38	0	2	1	6	2	16
24-Jul	1	15	0	16	1	137	0	15	1	87	0	38	0	2	2	8	4	20
25-Jul	1	16	8	24	1	138	0	15	9	96	1	39	0	2	1	9	0	20
26-Jul	1	17	2	26	3	141	0	15	0	96	0	39	0	2	0	9	0	20
27-Jul	5	22	1	27	3	144	0	15	0	96	0	39	0	2	2	11	1	21
28-Jul	4	26	0	27	2	146	3	18	6	102	0	39	0	2	0	11	2	23
29-Jul	3	29	1	28	0	146	3	21	5	107	0	39	0	2	0	11	0	23
30-Jul	2	31	3	31	0	146	2	23	5	112	1	40	1	3	0	11	0	23
31-Jul	0	31	0	31	5	151	0	23	4	116	1	41	1	4	0	11	4	27
1-Aug	2	33	4	35	1	152	3	26	5	121	0	41	0	4	0	11	3	30
2-Aug			0	35	1	153	2	28	1	122	0	41	0	4	0	11	3	33
3-Aug			3	38	1	154	1	29	6	128	0	41	1	5	1	12	0	33
4-Aug			0	38	4	158	0	29	4	132	1	42	1	6	0	12	0	33
5-Aug			0	38	1	159	0	29	3	135	0	42	1	7	0	12	0	33
6-Aug			0	38	4	163	0	29	2	137	2	44	0	7	0	12	1	34
7-Aug			1	39	3	166	0	29	5	142	0	44	0	7	0	12	0	34
8-Aug - 23-Sept	0		74		82		71		46		69		72		3		9	
Total	33		113		248		100		188		113		79		15		43	

Appendix 5. Continued.

Date	2003		2004		2005		2006		2007		2008		2009		2010	
15-Jun																
16-Jun																
17-Jun																
18-Jun	0	0														
19-Jun	0	0							0	0						
20-Jun	0	0							0	0					0	0
21-Jun	0	0							0	0	0	0			0	0
22-Jun	0	0							0	0	0	0	0	0	0	0
23-Jun	0	0	0	0					0	0	0	0	0	0	1	1
24-Jun	0	0	0	0					0	0	0	0	0	0	0	1
25-Jun	0	0	0	0					0	0	0	0	0	0	1	2
26-Jun	0	0	0	0	0	0			0	0	0	0	0	0	2	4
27-Jun	0	0	1	1	0	0			1	1	0	0	0	0	0	4
28-Jun	0	0	2	3	0	0	0	0	0	1	0	0	0	0	0	4
29-Jun	1	1	5	8	0	0	0	0	0	1	0	0	0	0	9	13
30-Jun	0	1	2	10	1	1	0	0	0	1	0	0	1	1	1	14
1-Jul	0	1	0	10	1	2	0	0	6	7	1	1	0	1	1	15
2-Jul	0	1	3	13	0	2	0	0	8	15	16	17	0	1	2	17
3-Jul	0	1	5	18	0	2	9	9	2	17	10	27	0	1	2	19
4-Jul	1	2	3	21	0	2	50	59	17	34	29	56	0	1	6	25
5-Jul	4	6	9	30	0	2	15	74	5	39	27	83	0	1	10	35
6-Jul	4	10	7	37	0	2	27	101	0	39	15	98	5	6	5	40
7-Jul	4	14	22	59	0	2	16	117	6	45	18	116	3	9	3	43
8-Jul	2	16	18	77	0	2	12	129	6	51	25	141	0	9	6	49
9-Jul	2	18	14	91	0	2	13	142	9	60	3	144	1	10	9	58
10-Jul	13	31	15	106	0	2	12	154	6	66	2	146	3	13	15	73
11-Jul	14	45	18	124	0	2	16	170	2	68	2	148	5	18	5	78
12-Jul	4	49	16	140	1	3	20	190	6	74	5	153	9	27	2	80
13-Jul	4	53	19	159	0	3	4	194	2	76	5	158	2	29	3	83
14-Jul	1	54	10	169	15	18	3	197	1	77	3	161	5	34	1	84
15-Jul	8	62	3	172	0	18	7	204	1	78	15	176	2	36	1	85
16-Jul	13	75	6	178	1	19	5	209	2	80	6	182	2	38	7	92
17-Jul	23	98	9	187	0	19	18	227	4	84	5	187	6	44	2	94
18-Jul	0	98	7	194	0	19	21	248	5	89	2	189	3	47	2	96
19-Jul	9	107	12	206	0	19	26	274	5	94	5	194	4	51	5	101
20-Jul	3	110	12	218	0	19	21	295	3	97	6	200	1	52	5	106
21-Jul	1	111	7	225	2	21	32	327	1	98	5	205	2	54	5	111
22-Jul	8	119	2	227	0	21	12	339	4	102	2	207	2	56	3	114
23-Jul	11	130	7	234	0	21	31	370	4	106	9	216	5	61	12	126
24-Jul	11	141	10	244	5	26	19	389	4	110	3	219	4	65	3	129
25-Jul	2	143	16	260	5	31	15	404	8	118	5	224	3	68	6	135
26-Jul	15	158	9	269	2	33	13	417	8	126	12	236	6	74	9	144
27-Jul	25	183	16	285	5	38	9	426	4	130	12	248	1	75	7	151
28-Jul	19	202	6	291	4	42			5	135	7	255	4	79	3	154
29-Jul	9	211	5	296	7	49			5	140	7	262	2	81	3	157
30-Jul	18	229	6	302	1	50			1	141	10	272	1	82	3	160
31-Jul	7	236	7	309	1	51							0	82	9	169
1-Aug	16	252	8	317	0	51							2	84		169
2-Aug	4	256	9	326	0	51							0	84		169
3-Aug	11	267	3	329	0	51							0	84		169
4-Aug	40	307	7	336	0	51										
5-Aug	5	312	2	338	2	53										
6-Aug	11	323	8	346	4	57										
7-Aug	9	332	9	355	0	57										
8-Aug - 23-Sept	162		153		94		0		0		0		0		0	
Total	494		508		151		426		141		272		84		169	

= estimated escapement counts

* * = incomplete count, missing data not estimated.

* = incomplete count, weir removed