Fishery Data Series No. 16-05

Characterization of the 2011 Salmon Run in the Kuskokwim River Based on the Test Fishery at Bethel

by

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and

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January 2016

Alaska Department of Fish and Game **Divisions of Sport Fish and Commercial Fisheries**

Symbols and Abbreviations

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Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)

cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry

all atomic symbols	
alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of)	pH
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General

Alaska Administrative Code	AAC
all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat or long
monetary symbols (U.S.)	$, ¢
months (tables and figures): first three letters	Jan,...,Dec
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H_A
base of natural logarithm	*e*
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	*E*
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$\log_2$, etc.
minute (angular)	'
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

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ABSTRACT

Annual abundance indices and run timing of adult Chinook *Oncorhynchus tshawytscha*, sockeye *O. nerka*, chum *O. keta*, and coho *O. kisutch* salmon returning to the Kuskokwim River have been assessed by the Bethel test fishery since 1984. In 2011, the Bethel test fishery operated from June 1 through August 20. A series of timed drifts using 8.0 inch and 5.375 inch stretched mesh gillnets were made at 3 stations across the river channel. Each series of drifts began approximately 1 hour following each high tide throughout the fishing season. Mean tidal catch per unit effort (CPUE) was calculated for each species and served as an index of abundance. The cumulative mean tidal CPUE was compared to information from earlier years and to the results from the lower Kuskokwim inseason subsistence salmon harvest monitoring project to determine salmon abundance and run timing to help direct subsistence and commercial management decisions. The final cumulative CPUE index through August 20 was 201 Chinook, 1,517 sockeye, 10,028 chum, and 3,234 coho salmon. Relative abundance indices were below the 2001–2010 average for Chinook, near average for sockeye and coho salmon, and above average for chum salmon. Run timing of Chinook salmon peaked on June 23; sockeye salmon peaked on June 29; chum salmon peaked on July 7; and coho salmon peaked on August 5. Chinook salmon cumulative CPUE indices tracked historical years when escapement goals were not achieved. Sockeye, chum, and coho salmon cumulative CPUE indices tracked historical years when escapement goals were met.

Key words: Chinook salmon *Oncorhynchus tshawytscha*, sockeye salmon *O. nerka*, chum salmon *O. gorbuscha*, coho salmon *O. kisutch*, Bethel test fishery, run timing, relative abundance, commercial fishery, subsistence fishery, stocks of concern, escapement, drift gillnet, index, water level, age sex and length (ASL) composition, catch per unit effort, CPUE, Kuskokwim River.

INTRODUCTION

The Kuskokwim River salmon fisheries are managed according to the *Kuskokwim River Salmon Management Plan* (5 AAC 07.365) (Management Plan) adopted by the Alaska Board of Fisheries (BOF) in January 2001 (Burkey et al. 2000) and amended in January 2004 (Bergstrom and Whitmore 2004) and again in 2007 (Linderman and Bergstrom 2006). The purpose of this plan is to provide guidelines for rebuilding and management of the Kuskokwim River fishery that will result in the sustained yield of salmon stocks large enough to meet escapement goals, provide amounts reasonably necessary for subsistence, and provide for fisheries other than subsistence. The management of this salmon fishery is confounded by unknown variables such as run size and migratory timing, harvest of mixed stocks, overlapping multi-species salmon runs, allocation issues, and the large size of the Kuskokwim River drainage (Figure 1). To address these management objectives, managers rely on subsistence harvest reports, test fishery catch per unit effort (CPUE) index summaries, commercial harvest catch rates, escapement data, sonar, and aerial survey programs. This information is used to attempt to adequately characterize inseason migratory timing, run strength, and escapement of Pacific salmon *Oncorhynchus* spp. in the Kuskokwim River drainage.

The Bethel test fishery (BTF) provides a CPUE index that fishery managers compare to previous years' indices to evaluate inseason salmon run timing and relative abundance. The current year CPUE index, when compared to prior year indices, along with associated subsistence reports, weir, sonar, and aerial survey data, is used to assess salmon run strength. Comparison of CPUE data between years should be approached cautiously due to an array of factors affecting salmon catchability at the test fishery site. Such factors include, but are not limited to water level and clarity, water temperature, height of the flooding tides, weather conditions, river channel morphology and hydrology, fish size relative to gillnet mesh size, net saturation effects, and test fishery crew technique.

The location of the BTF within the Kuskokwim River drainage (Figure 2) is important to salmon managers because it provides information about salmon runs early in the season of a given year. Historically, managers relied on test fisheries, commercial catch statistics, and informal reports from subsistence and sport fishermen to gauge inseason salmon run abundance. In 1987, the directed Chinook salmon *O. tshawytscha*, commercial fishery was discontinued in the Kuskokwim River to provide for a sustainable subsistence harvest and maintain an average spawning escapement (Francisco et al. 1989). In the absence of a June commercial fishery, early inseason salmon run assessment information was limited primarily to test fishery data and informal subsistence harvest reports.

In 2001, a subsistence catch monitoring project (catch monitoring project) was initiated in the Bethel area. This project was implemented to provide a qualitative assessment of subsistence fishing success and degree to which subsistence needs were met inseason. The catch monitoring project provides fishery managers additional information inseason to monitor salmon abundance (fishing is good, average, or poor) and run timing (early, normal, or late) when compared to previous years' inseason subsistence catches. This information in combination with the test fishery indices assists managers in the run assessment process, as to whether abundance is adequate to provide for escapement, subsistence, and other fishery opportunities. The catch monitoring project formally reports their findings to Alaska Department of Fish and Game (ADF&G) and the Kuskokwim River salmon management working group on a weekly basis.

PROJECT BACKGROUND

From 1966 through 1983, ADF&G conducted a set gillnet test fishery in the lower portion of the Kuskokwim River near an abandoned fish camp called Kwegooyuk. At that site, the river was approximately 5 to 7 km (3 to 4 mi) wide and had 2 major channels, 1 channel along the east shore and 1 along the west shore. The river channels were separated by soft sandy shoals that were mostly flooded at high tide. It was difficult to predict which side, east shore or west shore, would be the "main" river channel in a given year, and it appears this may have alternated several times during the history of the Kwegooyuk test fishery project (Huttunen 1984). In that expansive body of water, the Kwegooyuk test fishery gillnets, 49 meters (27 fathoms) in length, were set from the east shore just upstream of the lower boundary of District 1 and fished 24 hours a day (Molyneaux 2003).

The goals of the Kwegooyuk test fishery were to describe run timing and provide an index of abundance for Chinook, sockeye *O. nerka*, and chum *O. gorbuschus* salmon, similar to the present day test fishery at Bethel. Managers believed that run timing was adequately described by the Kwegooyuk test fishery, but the project did not provide a satisfactory index of run abundance. This problem was attributed to fluctuations in the migratory route of salmon between the east river and west river channels as influenced inseason by changes in weather patterns and tidal stages and between seasons by alterations in river channel morphology. The Kwegooyuk test fishery was also a poor predictor of Chinook and chum salmon catches in the District 1 commercial fishery (Huttunen 1984). Because the test fishery site is remote, daily catches of fish couldn't be sold or distributed to the public for subsistence uses. This made discarding daily catch difficult or impossible and resulted in unavoidable waste, which was unacceptable to ADF&G, local residents, and the industry (Molyneaux 2003).

In an effort to provide a more reliable index of relative abundance and run strength, and to provide a better avenue for the sale of test fishery catches, a drift gillnet test fishery program near

Bethel was evaluated in July 1983. This program ran concurrently with the Kwegooyuk test fishery. The focus was on the use of drift gillnets in a narrower river channel of the mainstem Kuskokwim River near Bethel. The objectives of the 1983 drift gillnet test fishery were to assess the feasibility of collecting run timing and abundance information for coho *O. kisutch* salmon. The new site was in the mainstem Kuskokwim River about 5 km (3 mi) upstream from Bethel, just above the boundary line separating Subdistricts 1-A and 1-B. The river was approximately 1 km (0.5 mi) wide at the new location and had a single major channel that allowed drift gillnets to collect CPUE information at selected stations across the entire channel width. Four small channels circumvent the site (Steamboat, Straight, Church, and Napaskiak sloughs), but their influence on the test fishery was assumed negligible. The new BTF site was also conveniently located in close proximity to local fish processors for the timely distribution and sale of daily catches. Conclusions from the 1983 program evaluation were that the drift gillnet test fishery at Bethel was viable and offered a more reliable means of monitoring salmon run timing and abundance than the Kwegooyuk test fishery. The Kwegooyuk set gillnet program was then discontinued after 1983 and replaced with a multiple-mesh drift gillnet project referred to as the Bethel test fishery (Huttunen 1984).

Operating at a point upriver of a significant amount of commercial and subsistence harvest meant that instead of indexing total run abundance, the original objective of the test fishery was to provide an index of abundance for salmon at a point midway in the commercial fishing district. This distinction was important because downriver commercial and subsistence harvests could not be accounted for in the test fishery indices. The variability in annual exploitation rates of the subsistence and commercial fishery are affected by many factors, including management actions, changes in gear efficiency, regulations designed to alter harvest efficiency, variability in fishing patterns (length of openings and frequency of openings), changes in water level, river entry patterns of salmon, and the occurrence of commercial fishermen strikes. Therefore it was only appropriate to use test fishery CPUE as an indicator of salmon abundance at Bethel when compared to CPUE information from previous years to determine relative salmon abundance and run timing to help direct subsistence and commercial fishery management decisions.

Since 1999, with the decline of salmon abundance and weak commercial salmon markets, the harvest of salmon from the Kuskokwim River has become more stable. Commercial fishery openings occur more often in late June or early July, well past the majority of the Chinook and sockeye salmon runs and near the peak of the chum salmon return. Salmon harvests taken in June are primarily for the purpose of targeting Chinook, sockeye and some chum salmon or subsistence use. Subsistence harvests have remained relatively stable for the past 15 years (Brazil et al. 2011). Given a stable harvest, the Bethel test fishery has evolved into a tool used by fishery managers to gather insight into salmon run abundance.

OBJECTIVES

1. Determine a daily index expressed as CPUE and a cumulative daily CPUE index for Chinook, sockeye, chum, and coho salmon at the Bethel test fishery site from June 1 through August 24.
2. Estimate relative run abundance and timing of Chinook, sockeye, chum, and coho salmon at the Bethel test fishery site by comparison to historical test fishery information.
3. Collect age, sex, and length (ASL) data from all Chinook salmon caught in the test fishery in order to provide a general characterization of the composition of the run.

METHODS

FIELD OPERATIONS

The methods and location used in the 2011 BTF were similar to those used since 1984 (Huttunen 1985). Following each high tide, a series of gillnet drifts (drift session) were conducted at 3 stations in the Kuskokwim River approximately 5 km (3 mi) upstream of Bethel, where Straight Slough diverges from the main river channel (Figure 3). A 3-person crew performed drifts using a 6.1 m (20 ft) skiff and two 90 m (50-fathom) drift gillnets, 1 each consisting of 20.4 cm (8.0 inch) and (5.375 inch) mesh. Each drift session began approximately 1 hour after the published high slack tide (high tide) for Bethel to ensure all drifts were conducted in water flowing downstream. If the weather conditions and high tide magnitude caused a delay in the ebbing of the tide, the time drifts began was delayed. Two drift sessions were completed daily. During each drift session, 2 of the 3 drift stations were fished once with the 8.0 inch and once with the 5.375-inch mesh gillnet for a total of 4 drifts per session. A drift schedule was used to determine the sequence drift stations were to be fished and mesh sizes to be fished (Appendix A1). This design dictated that 1 of the 3 stations was fished twice during each drift session, once with each mesh size. The duration of each drift was approximately 20 min and the mean fishing time was calculated as half the time it took to deploy and retrieve the gillnet, plus the time the gillnet was fully deployed. The distance of each drift varied depending on water and channel conditions, but the distance was generally less than 3 km (2 mi). To avoid conflicting with commercial fishermen, the test fishery did not operate when commercial fishing was in progress in Subdistrict 1-A.

The river channel is typically 12 m (36 ft) deep and 320 m (1,050 ft) wide as measured near the downriver end of the test fishery site. Gillnets used in the test fishery generally sampled the upper half of the water column; however, at Station 1 the inshore end of the gillnet dragged along a section of sand bar (Figure 4). At Station 3 the crew deployed the inshore end of the gillnet approximately 8 m (24 ft) offshore to avoid snags along the channel edge. As the Station 3 drift progressed, it typically moved towards the center of the channel and overlapped with Station 2.

Drifting began on the second tide on June 1 and continued through the second tide on August 20. Through July 10, there were 2 different mesh sizes used in the test fishery; the first 2 drifts of the drift session were conducted with the 8.0 inch mesh gillnet, and the second 2 drifts were performed with the 5.375 inch mesh gillnet. Different mesh sizes were used because the larger mesh catches larger Chinook salmon, whereas the smaller mesh is more effective on smaller Chinook and other salmon species. Beginning July 11 the use of the 8.0 inch mesh gear was discontinued for the remainder of the season because, typically, by mid-July the Chinook salmon migration in the lower Kuskokwim River is essentially over.

Until 1990, 4 drifts continued to be conducted at the 3 stations after mid-July using only the 5.375 inch mesh gillnet. The fishing schedule was used to determine the drift sequence as well as the station that received the duplicate drift. Results of the duplicated drifts were then averaged. However, Molyneaux (1991) found the duplicated fourth drift was unnecessary and it was discontinued beginning in 1990. Prior to 2001, the test fishery had an outlet for the disposal of the catch through sales to local processors. Beginning in 2001, because of continuing poor Chinook and chum salmon returns, a reduction of commercial fishing during June and July, and a decline in the salmon market, sales to local processors became sporadic. The disposal of BTF

caught salmon became an increasing problem. In 2003, inseason adjustments to the standard operating procedures were made as to when the use of the 8.0 inch mesh gear was discontinued for the remainder of the season. The change in procedures became necessary due to a trend of increasing Chinook and chum salmon abundance and the inability to sell chum salmon to local processors or distribute them to subsistence users or local charities. Additional procedural adjustments were made in the use of the 5.375 inch mesh gillnet by fishing only 2 of the 3 stations per drift session during the period of high chum salmon abundance. This procedure was a change from pre-2003 years when the use of the 5.375 inch gear was increased to fishing all 3 stations. Further adjustments to the fishing schedule have been made in recent years by discontinuing operations for a period of consecutive tides to address the problem of chum salmon catch disposal.

In 2011, the use of the 5.375-inch mesh gillnet was reduced to fishing only 2 of the 3 stations beginning on July 11 and continued through July 22. The stations fished and the station missed during a given drift session varied with the fishing schedule. Although a procedural change, the reduction in fishing time was consistent with the June 1 to July 10 period when only catches in the 5.375 inch mesh gillnets were used to calculate mean tidal CPUE for sockeye, chum, and coho salmon.

The 8.0 inch and 5.375 inch mesh gillnets were 35 meshes (6.7 m) and 45 meshes (5.8 m) in depth. The webbing was manufactured by Momoi Fishing Net MFG. Co., LTD.[1] and both nets were hung at a 2:1 ratio to a finished length of 50 fathoms (90 m). The 8.0 inch mesh webbing was MT-83, a multi-fiber mono twist 1.5 X 16 strand twine, and the color code was R-46R (medium brown/green). The 5.4 in webbing was MST-33, a multi-fiber mono super twist 1.5 X 8 strand twine, and the color code was SH-3 (light green).

The catch for each drift was tallied by species and by station. At the end of each drift session, the catch was either donated to charities or individuals desiring the fish for subsistence purposes. The data were entered into a Microsoft Excel™ computer program for analysis and recorded in the Bethel office log.

Beginning in the 2008 season, BTF drift gillnets were assembled using a new mesh type consisting of different strand count and color. Mesh size and overall dimensions of the fully hung net remained the same. In the spring of 2011 a change in catchability of Chinook salmon was identified within the BTF data set beginning in 2008 (data on file with the Kuskokwim Research Group, Division of Commercial Fisheries; Anchorage). A similar change in catchability because of gear type modification was observed on the Kenai River in 2002 (Reimer 2004). The new strand type improved the catchability of Chinook salmon, making historical comparison of BTF indices problematic. To account for this change, a correction factor (0.37) was developed to adjust historical BTF indices, which allowed historical comparison of pre-2008 BTF data. This was accomplished by identifying the difference in the linear relationships between BTF cumulative CPUE and escapement data from Kuskokwim River escapement monitoring projects between the 2 catchability regimes.

[1] Product names used in this report are included for scientific completeness, but do not constitute a product endorsement.

TEST FISHING INDEX

The actual salmon catch for each drift was converted to a drift CPUE and then averaged, which produced a tidal CPUE to enhance the comparability of catch results. This was accomplished by converting the number of fish caught in the variable net length and mean fishing time of each drift to the number of fish that would be caught by 100 fathoms (180 m) of net fished for 60 minutes. This standardization of net length and fishing time has been used in many gillnet test fisheries conducted by ADF&G (Meacham 1978; Waltemeyer 1983).

Denote that:

i = date of test fishery

t = tide of test fishery

s = test fishery strata (location)

m = mesh of the net used

$f_{i,t,s,m}$ = length of the net used

$t1_{i,t,s,m}$ = time of starting net deployment

$t2_{i,t,s,m}$ = time of net fully deployed

$t3_{i,t,s,m}$ = time of starting net retrieval

$t4_{i,t,s,m}$ = time of net fully retrieved.

$C_{i,t,s,m}$ = the number of fish by species caught by each drift

$n_{i,t}$ = total number of drift deployed per tide per day

n_i = the number of tides test fished per day

For each drift, mean fishing minutes were calculated as

$$\bar{T}_{i,t,s,m} = \frac{1}{2}(t3_{i,t,s,m} + t4_{i,t,s,m} - t2_{i,t,s,m} - t1_{i,t,s,m}) \ , \tag{1}$$

and its standardized drift CPUE ($I_{i,t,s,m}$) per 100 fathom net length and 60 minutes of fishing effort was calculated as

$$I_{i,t,s,m} = 100 \times 60 \cdot \frac{C_{i,t,s,m}}{f_{i,t,s,m} \cdot \bar{T}_{i,t,s,m}} \ . \tag{2}$$

Daily per tide CPUE was calculated as

$$I_{i,t} = \frac{\sum_s \sum_m I_{i,t,s,m}}{n_{i,t}} . \tag{3}$$

For calculation of per tide CPUE, both 8.0 inch and 5.375 inch mesh nets were used for Chinook salmon, and only 5.375 inch mesh nets were used for sockeye, chum, and coho salmon.

Standardized daily CPUE per 2 tides calculated as

$$I_i = 2 \cdot \frac{\sum_t I_{i,t}}{n_i}. \quad (4)$$

AGE, SEX, AND LENGTH COMPOSITION

Chinook salmon ASL data collected from BTF have been sporadic over the years. Declining commercial fishing activity in the Kuskokwim River in the late 1990s and early 2000s had precluded ASL sample collection for Chinook salmon. As a result, collection of ASL data from BTF was implemented from 2001 through 2007. ASL data collection was discontinued in 2008, 2009, and 2010 because of time and fiscal constraints. Chinook salmon ASL data collection was resumed in 2011.

ASL sampling of Chinook salmon was conducted for all drifts and for all drift sessions. All Chinook salmon captured were sampled during the time when the next sequential drift was conducted, although during periods of high catches additional time was taken between drifts to sample. After sampling, these fish were then placed in a tote located in the boat.

Standard sampling procedures as described by Molyneaux et al. (2010) were followed to remove a minimum of 3 scales from the preferred area of the fish. Scales were mounted on labeled gum cards and each card was identified with a unique card number. Sex was positively determined by slitting the belly of each fish sampled and visually examining the gonads. Length was measured to the nearest millimeter from the mideye to tail fork using standardized calipers. Upon completion of each drift session, sex-length data was transferred to an Excel sheet. Scale cards and logged data were analyzed and published by Kuskokwim research staff in Bethel and Anchorage. Original ASL scale cards, scale acetates, and sex-length data logs were archived at the Anchorage ADF&G office.

CLIMATOLOGICAL AND STREAM OBSERVATIONS

Climatological conditions were recorded during the first drift of each drift session. Cloud cover was estimated by percent sky covered; observed precipitation was noted; wind direction was noted and speed was estimated in miles per hour; air and surface water temperatures were recorded in degrees Celsius; water clarity was measured in meters using a standardized Secchi disk. The daily water surface temperature value recorded on an Excel worksheet was the lowest value for all high tides for that day. The daily value for depth of water clarity recorded in the Excel worksheet was the highest value for all tides for that day. Although this information is not used in the assessment of salmon run abundance and run timing, collection of data are continued as part of the sampling routine.

RESULTS

OPERATIONS

Bethel test fishery operated from June 1 through August 20. The first salmon were caught on June 1. During the 81-day period, 156 high tides occurred and 464 drifts caught 337 Chinook, 380 sockeye, 2,289 chum, and 1,207 coho salmon. Chinook, sockeye, and chum salmon migrations ended before the test fishery was concluded, but catches of coho salmon persisted until August 20. During the operational period, 5 days had only 1 high tide, 6 tides and 4 drifts

were missed because of weather, 1 tide was missed because of entanglement with a subsistence setnet, 2 tides were missed for observance of the July 4 holiday, 3 tides were missed because of simultaneously scheduled commercial fishing periods, and 4 tides were missed because of fish disposal concerns. The standard operating dates are from June 1 through August 24; however, in 2011, the test fishery ceased operation on August 20 because the project was unable to maintain a crew (Table 1).

ABUNDANCE INDICES AND RUN TIMING

Chinook Salmon

The first Chinook salmon was caught on June 1. The peak daily mean tidal CPUE index (daily index) of 13.7 occurred on June 19, and the corrected cumulative mean tidal CPUE index (cumulative index) through July 10 was 201. Based on the cumulative index, the central 50% of the run passed the test fishery site between June 17 and July 1 (Table 2). Daily indices initially tracked on the 2001–2010 average until June 9 when the index fell below average and remained well below the 10-year average through the remainder of the season (Figure 5; Appendix B1). The cumulative index of 201 was the third lowest cumulative index since 2001, most similar to 2008 (Appendix B2). Fifty percent of the Chinook salmon passage occurred by June 23, 1 day later than the average date of June 22 (Appendix B3).

Sockeye Salmon

The first sockeye salmon was caught on June 6. The peak daily index of 143 occurred on June 25 and the cumulative index through July 31 was 1,510 (Table 2). Based on the cumulative index, the central 50% of the sockeye salmon run passed the BTF site between June 24 and July 3, and 50% of the passage occurred by June 29 (Table 2). Daily indices were generally below the 10-year average except for a 15-day period from June 26 to July 10, after which the daily index fluctuated from above to below average (Figure 6; Appendix C1). The cumulative index of 1,510 was 10% below the average of 1,677, the sixth lowest cumulative index since 2001, most similar to the years 2007 and 2009 (Appendix C2). The central 50% of the sockeye salmon passage fell within the 10-year average range of dates (June 23 to July 4) and 50% of the passage occurred 1 day later than the average date of June 28. On average, 98% of the run are passed the test fishery site by July 20 (Appendix C3).

Chum Salmon

The first chum salmon was caught on June 4. The peak daily index of 714 occurred on July 12 and the cumulative index through July 31 was 9,835. Based on the cumulative index, the central 50% of the chum salmon run passed the test fishery site between July 1 and July 15, and 50% of the passage occurred by July 7 (Table 2). Daily indices tracked below the 10-year average from June 4 to June 26 after which they fluctuated from above to below average (Figure 7; Appendix D1). The cumulative index of 9,835 was 15% above the average of 8,331, and the fourth highest cumulative index since 2001, most similar to 2007 (Appendix D2). The central 50% of the chum salmon passage range of dates mirrored the 10-year average range of dates of June 30 to July 14. Fifty percent of the passage occurred 1 day later than the average date of July 6. On average, 95% of the run are passed the test fishery site by July 27 (Appendix D3).

Coho Salmon

The first coho salmon was caught on July 8 and catches continued through the project completion date of August 20; this does not encompass the entire length of the return. The peak daily index for coho salmon of 324 was on August 2 and the cumulative index was 3,234 by August 20. Based on the cumulative index the central 50% of the run passed the BTF site between August 1 and August 9, and 50% of the passage occurred by August 5 (Table 2). Daily indices generally tracked below the 10-year average except for 9 days (August 1–August 10) when indices were generally above average (Figure 8; Appendix E1). The cumulative index of 3,234 was 18% below the average of 3,924 by that date, and the fourth lowest cumulative index since 2001, most similar to 2006 and 2007 (Appendix E2). The central 50% of the coho salmon passage fell within the10-year average range of dates of August 1 to August 12, and 50% of the passage occurred 2 days earlier than the average date of August 7 (Appendix E3).

CHINOOK SALMON ASL COMPOSITION

Scale samples, sex, and length data were collected from 216 Chinook salmon, which was 64% of the total 337 Chinook salmon caught in the test fishery. Of the 216 Chinook salmon sampled, 102 fish (47%) were caught in the 8.0 inch mesh gillnet and 114 fish (53%) were caught in the 5.375 inch mesh gillnet. In the combined catch, the most abundant age classes were age-1.2 (40.3%), followed by age-1.3 (29.6%), age-1.4 (28.2%), and age-1.5 (1.9%) fish. Sex composition of the combined sample was 71.8% males and 28.2% females. Mean male length from sampled fish was 562 mm (age-1.2), 704 mm (age-1.3), 789 (age-1.4), and 816 mm (age-1.5). Mean female length from sampled fish was 802 mm (age-1.3), 850 mm (age-1.4), and 869 mm (age-1.5). Overall, male lengths ranged from 469 to 816 mm, and female lengths ranged from 655 to 877 mm (Table 3).

Of the ASL data collected from the 102 Chinook salmon caught in the 8.0 inch mesh gillnet, the most abundant age class was age-1.4 (51.0%), followed by age-1.3 (37.3%), age-1.2 (7.8%), and age-1.5 (3.9%) fish. Sex composition was 52.9% males and 47.1% females. Mean male length from sampled fish was 581 mm (age-1.2), 730 mm (age-1.3), 789 mm (age-1.4), and 816 mm (age-1.5). Mean female length from sampled fish was 825 mm (age-1.3), 854 mm (age-1.4), and 869 mm (age-1.5). Overall, male lengths ranged from 512 to 816 mm and female lengths ranged from 761 to 877 mm (Table 3).

Of the ASL data collected from the 114 Chinook salmon caught in the 5.375 inch mesh gillnet, the most abundant age class was age-1.2 (69.3%), followed by age-1.3 (22.8%), and age-1.4 (7.9%) fish. Sex composition was 88.6% males and 11.4% females. Mean male length from sampled fish was 560 mm (age-1.2), 664 mm (age-1.3), and 795 mm (age-1.4). Mean female length from sampled fish was 775 mm (age-1.3), and 828 mm (age-1.4). Overall, male lengths ranged from 469 to 795 mm and female lengths ranged from 655 to 892 mm (Table 3).

CLIMATOLOGICAL AND STREAM OBSERVATIONS

Surface water temperature and water clarity measurements were recorded from June 1 through August 20 (Table 4). Of the 156 high tides that occurred during the project's operational period, observations and measurements were not made for 23 of those tides. Water temperatures ranged from 10°C to 15°C with an average temperature of 12°C, 2 degrees below the 10-year average of 14°C. Water temperatures tracked below average for the majority of the project's operational period beginning June 23, and tracked at or below 10-year minimum temperatures for those dates

(Figure 9; Appendix F1). Daily water clarity ranged from 0.2 m to 1.2 m with an average clarity of 0.5 m. Water clarity tracked generally near the 10-year average except for an 8-day period beginning June 18 when clarity tracked at and above 10-year maximums (Figure 10; Appendix F2).

DISCUSSION

The 2011 Kuskokwim River outlook anticipated Chinook, sockeye, and coho salmon abundance to be similar to 2010, whereas chum salmon abundance was expected to exceed the 2010 return (Brazil et al. 2011). The 2010 Chinook salmon return was characterized as the lowest estimated total run and spawning escapement on record drainagewide. Of particular concern to both state and federal managers was the inability to meet escapement goals for the prior 3 consecutive years at Kwethluk River and for 4 consecutive years at Tuluksak River. Sockeye and chum salmon abundance was very good in 2010, and coho salmon abundance was average to below average.

ABUNDANCE INDEX

Chinook Salmon

Inseason assessment of Chinook salmon, as indicated by the cumulative CPUE, suggested run abundance to be below average when compared to 10-year cumulative indices. Through the project's operating period, Chinook salmon cumulative index tracked most similarly with 2008 and 2010 and within the range of poor return years of 2008 through 2010 (Figure 11; Appendix B2).

Based on daily assessment of the Chinook salmon cumulative index performance, inseason management actions implemented 2 closures of the subsistence salmon gillnet fishery for a total of 9 days (4 days beginning June 16 and 5 days beginning June 23). Additionally, based on the BTF cumulative index and escapement counts at Kwethluk and Tuluksak rivers, the subsistence salmon gillnet fishery was restricted to the use of gillnets of 6.0 in or less stretched mesh size and not to exceed 45 meshes in depth, and 50 fathoms in length for an 8-day period beginning June 29. Federal management closed the subsistence salmon gillnet fishery for the area of the Kuskokwim River from the mouth upstream to the confluence of the Aniak and Kuskokwim rivers, including all tributary rivers within this area for 3 days beginning June 30. These actions were in response to the Chinook salmon cumulative index was tracking well below the historical average for years in which escapement goals at Kwethluk and Tuluksak rivers were met and fell within the bounds of the confidence interval for when escapement goals were not met (Figure 12).

Catch monitoring project interviews of subsistence fishermen, in general, supported the inseason interpretation of the 2011 test fishery Chinook salmon cumulative index. For the project reporting dates of June 6 and June 12 the majority of the subsistence fishermen interviewed reported catches as 'Normal' (36% and 34% respectively) whereas 36% and 7% respectively reported their catches as 'Very Good' reflective of the initial positive entry of Chinook salmon as suggested by the BTF cumulative CPUE indices. The mixed response to interview questions for reporting dates of June 19, June 27, July 3, and July 10 may have been reflective of irregular pulses of abundance due to a weak run as suggested by BTF cumulative CPUE indices during the same time period. The usefulness of this comparison inseason was subject to interpretation

because of the suspected change in subsistence harvest strategies because of inseason management actions (Table 5; Figure 12).

Postseason evaluation of BTF suggests the cumulative index for Chinook salmon, when compared to 10-year cumulative indices, worked well as an inseason indicator of abundance. The Chinook salmon cumulative index of 201 was indicative of abundance greater than the poor return year of 2001, slightly better than returns in 2010, and consistent with years of poor escapements drainagewide as documented by the 2011 escapement monitoring projects (Appendices G1 and G2).

Sockeye Salmon

Inseason assessment of sockeye salmon, as indicated by the cumulative CPUE indices, suggested that run abundance was average when compared to 10-year cumulative BTF indices. Prior to 2010, there was no formal sockeye salmon escapement goals defined for the Kuskokwim River tributaries. Sockeye salmon abundance was evaluated by comparing the current year's cumulative index to cumulative indices for those years with known escapement performance as documented by Kuskokwim River escapement projects. In 2010, a sockeye salmon sustainable escapement goal (SEG) range of 4,400 to 17,000 fish was established at the Kogrukluk River weir (Bavilla et al. 2010). The 2011 sockeye salmon cumulative index tracked within the midrange of 10-year cumulative indices, most similar to 2007 and 2009, both years when the upper range of the SEG was nearly reached or exceeded, and well above 2002, a year of low abundance drainagewide (Figure 13; Appendix C2).

The catch monitoring project interviews of subsistence fishermen supported the inseason interpretation of sockeye salmon cumulative index. For the project reporting dates of June 6 through June 27 the majority of the subsistence fishermen interviewed, 9%, 46%, 57%, and 59% respectively, reported sockeye salmon fishing as 'Normal'. By July 3 and July 10, 76% and 33% of interviewed fishermen respectively reported sockeye salmon fishing as 'Very Good' (Table 5). The increase in the response of 'Very Good' was reflected by the daily indices which were generally above or near average during that 2 week period (Figure 6). However, the inseason interpretation of this comparison was confounded by inseason management actions.

Postseason evaluation of BTF suggests the cumulative index for sockeye salmon, when compared to 10 year cumulative indices, worked well as an inseason indicator of abundance. The normal run timing as reported by the catch monitoring project was reflective of the passage of sockeye salmon based on the cumulative index. The 2011 sockeye salmon cumulative index of 1,510 was indicative of abundance greater than the poor return year of 2002 and large enough to fall into the Kogrukluk River SEG range as documented by the escapement monitoring project (Appendix G3).

Chum Salmon

Inseason assessment of chum salmon relative abundance, as indicated by the BTF cumulative index, suggested run abundance was average when compared the 10 year cumulative indices. Throughout the season the chum salmon cumulative index tracked only slightly below 2007, a year when the upper limits of the SEG ranges for Aniak River sonar and Kogrukluk River weir were exceeded and within a range of below average to above average escapements drainagewide (Figure 14; Appendix G4).

The catch monitoring project interviews of subsistence fishermen supported the inseason interpretation of the BTF chum salmon cumulative index. For the project reporting dates of June 12 through June 27 the majority of the subsistence fishermen interviewed, 46%, 52%, and 36% respectively, reported chum salmon fishing as 'Normal'. By July 3 and July 10, 78% and 80% of interviewed fishermen reported chum salmon fishing as 'Very Good' (Table 5). The increase in the response of 'Very Good' was reflected by the daily indices generally above average during that time period (Figure 7).

Postseason evaluation of the BTF suggests the cumulative index for chum salmon worked well as an inseason indicator of abundance. The 2011 chum salmon escapement counts confirmed that the cumulative index for chum salmon was indicative of years when the SEG for Aniak River sonar and Kogrukluk River weir were met, and within a range of below average to above average escapements drainagewide (Appendix G4).

Coho Salmon

Inseason assessment of coho salmon relative abundance, as indicated by the BTF cumulative index, suggested late run timing and possible low abundance early in the season when compared to recent 10-year cumulative indices. From July 14 to July 31 the cumulative index tracked similar to late run years of 2001, 2002, 2005, 2006, and 2010, and low abundance years of 2001, 2005, and 2010. From August 1 through the remainder of the season the cumulative index rose and tracked within the ranges of 10 year cumulative indices, all years when the Kogrukluk River weir SEG range was met (Figure 15; Appendix G5).

Postseason evaluation of the BTF suggests the cumulative index for coho salmon worked well as an inseason indicator of abundance. The 2011 coho salmon escapement counts at the Kuskokwim River escapement monitoring projects confirmed that the cumulative index for coho salmon was indicative of near average abundance and near average escapements drainagewide (Appendix F4).

CONCLUSION

Kuskokwim River subsistence and commercial fishery salmon managers have found the BTF project to be successful at indexing the relative abundance and migratory timing of salmon runs. Fishery managers require timely inseason assessment of salmon run abundance. Due to the distance between areas of harvest and escapement project locations throughout the Kuskokwim River drainage, escapement projects provided limited information early in the salmon runs. As runs progress, a relationship may be seen between inseason CPUE information and escapement project information. In the absence of June commercial catch statistics, the early season indicators are limited to test fisheries and reports (both formal and informal) from subsistence fishermen. In 2011, the catch monitoring project interviews provided information that was timely and comparable to the inseason development of salmon run abundance indices seen in BTF.

Recommendations regarding the interpretation of inter-annual comparison of BTF information in future reports include the following:

- Continue the development of a relationship between BTF CPUE indices and escapement at weir projects to use as an inseason assessment tool for managing the Kuskokwim River Chinook salmon fishery and annually evaluate this relationship through regression analysis.

- Try to make comparisons of CPUE to the most recent 10 years to avoid the influence of changing river channel morphology.
- Consider the magnitude of fish removal and harvest effort downstream of the BTF site as they may influence interpretation of the cumulative test fishery CPUE indices of relative abundance and run timing.
- Consider the magnitude of fish removal and harvest effort upstream of the BTF site as they may influence interpretation of the adequacy of the cumulative test fishery CPUE indices and comparison with escapement information.
- Consider gillnet selectivity as certain age classes may be under or over represented in the BTF catch. Annual variation in age, sex, and length composition within and between years may affect the comparability of cumulative CPUE values. Maintain the inseason subsistence harvest monitoring program to utilize as a comparison of run timing and run strength with that described by the BTF project.

As one of the salmon stock assessment programs for the Kuskokwim River, the BTF has evolved into the primary inseason salmon management tool. Consistency in methods, completeness of a historical database, frequency of operation, and timeliness of results contribute to the success of this program. The BTF by itself is an imperfect tool. It requires a measure of subjectivity by experienced staff to interpret the information effectively. When used in conjunction with other inseason assessment tools, the test fishery can provide managers with insight into salmon run abundance and migratory timing on the Kuskokwim River.

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REFERENCES CITED

Bavilla, J., D. Bue, H. Carroll, T. Elison, D. Taylor, J. Estensen and C. Brazil. 2010. 2009 Kuskokwim area management report. Alaska Department of Fish and Game, Fishery Management Report No. 10-56, Anchorage.

Bergstrom, D. J., and C. Whitmore. 2004. Kuskokwim River Chinook and chum salmon stock status and action plan. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A04-02, Anchorage.

Brazil, C., D. Bue, H. Carroll, and T. Elison. 2011. 2010 Kuskokwim area management report. Alaska Department of Fish and Game, Fishery Management Report No. 11-67, Anchorage.

Burkey, C., Jr., M. Coffing, D. B. Molyneaux, and P. Salomone. 2000. Kuskokwim River chum salmon stock status and development of management/action plan options. Alaska Department of Fish and Game, Division of Commercial Fisheries Regional Information Report 3A00-41, Anchorage.

Francisco, R. K., K. Schultz, D. J. Schneiderhan, D. Huttunen, C. Burkey Jr., H. H. Haner, and R. J. Walker. 1989. Annual management report Kuskokwim area, 1988. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3B89-08, Anchorage.

REFERENCES CITED (Continued)

Huttunen, D. C. 1984. 1982-1983 Kuskokwim River test fishing project. AYK Region, Alaska Department of Fish and Game, Division of Commercial Fisheries, Kuskokwim River Salmon Test Fishing Report No. 13, Bethel.

Huttunen, D. C. 1985. Kuskokwim River salmon test fishing report, 1984. AYK Region, Alaska Department of Fish and Game, Division of Commercial Fisheries, Kuskokwim River Salmon Test Fishing Report No. 14, Bethel.

Linderman, J. C. Jr., and D. J. Bergstrom. 2006. Kuskokwim River Chinook and chum salmon stock status and Kuskokwim area fisheries; a report to the Alaska Board of Fisheries. Alaska Department of Fish and Game, Special Publication No. 06-35, Anchorage.

Meacham, C. P. 1978. Offshore test fishing in Bristol Bay. Alaska Department of Fish and Game, Division of Commercial Fisheries, Bristol Bay Data Report No. 69, Anchorage.

Molyneaux, D. B. 1991. Bethel salmon test fishing project, 1990. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A91-21, Anchorage.

Molyneaux, D. B. 2003. Data summary for the Kuskokwim River salmon test fishery at Bethel, 1984-2002. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A03-06, Anchorage.

Molyneaux, D. B., A. R. Brodersen, and C. A. Shelden. 2010. Salmon age, sex, and length catalog for the Kuskokwim Area, 2009. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A10-05, Anchorage.

Reimer, A. M. 2004. Chinook salmon creel survey and inriver gillnetting study, lower Kenai River, Alaska, 2002. Alaska Department of Fish and Game, Fishery Data Series No. 04-28, Anchorage.

Waltemeyer, D. L. 1983. Migratory timing and abundance estimation of the 1982 sockeye salmon return to upper Cook Inlet based on a test fishing program. Alaska Department of Fish and Game, Division of Commercial Fisheries, Cook Inlet Data Report No. 83-1, Soldotna.

TABLES AND FIGURES

Table 1.–Catch and catch per unit effort (CPUE) by drift and species for the Bethel test fishery, 2011.

Date	Tide No.	Drift No.	Station No.	Mesh size (in)	Net length (Fathoms)	Fishing time (min)	Chinook No. caught	Chinook CPUE	Sockeye No. caught	Sockeye CPUE	Chum No. caught	Chum CPUE	Coho No. caught	Coho CPUE
6/01	1	1	1	8.0	50	18.5	2	13.0	0	0.0	0	0.0	0	0.0
6/01	1	2	3	8.0	50	20.5	0	0.0	0	0.0	0	0.0	0	0.0
6/01	1	3	2	5.375	50	21.5	0	0.0	0	0.0	0	0.0	0	0.0
6/01	1	4	3	5.375	50	20.0	0	0.0	0	0.0	0	0.0	0	0.0
6/02	2	5	1	8.0	50	20.5	0	0.0	0	0.0	0	0.0	0	0.0
6/02	2	6	2	8.0	50	20.0	0	0.0	0	0.0	0	0.0	0	0.0
6/02	2	7	3	5.375	50	20.5	0	0.0	0	0.0	0	0.0	0	0.0
6/02	2	8	1	5.375	50	16.5	0	0.0	0	0.0	0	0.0	0	0.0
6/02	3	9	2	8.0	50	19.5	1	6.2	0	0.0	0	0.0	0	0.0
6/02	3	10	3	8.0	50	12.5	0	0.0	0	0.0	0	0.0	0	0.0
6/02	3	11	1	5.375	50	20.0	0	0.0	0	0.0	0	0.0	0	0.0
6/02	3	12	2	5.375	50	21.0	0	0.0	0	0.0	0	0.0	0	0.0
6/03	4	13	1	8.0	50	12.0	0	0.0	0	0.0	0	0.0	0	0.0
6/03	4	14	2	8.0	50	20.0	0	0.0	0	0.0	0	0.0	0	0.0
6/03	4	15	3	5.375	50	19.0	1	6.3	0	0.0	0	0.0	0	0.0
6/03	4	16	2	5.375	50	20.5	0	0.0	0	0.0	0	0.0	0	0.0
6/03	5	17	2	8.0	50	19.5	0	0.0	0	0.0	0	0.0	0	0.0
6/03	5	18	3	8.0	50	20.5	0	0.0	0	0.0	0	0.0	0	0.0
6/03	5	19	1	5.375	50	21.5	1	5.6	0	0.0	0	0.0	0	0.0
6/03	5	20	3	5.375	50	20.0	0	0.0	0	0.0	0	0.0	0	0.0
6/04 [a]	6													
6/04	7	21	1	8.0	50	19.5	0	0.0	0	0.0	0	0.0	0	0.0
6/04	7	22	3	8.0	50	16.0	0	0.0	0	0.0	0	0.0	0	0.0
6/04	7	23	2	5.375	50	22.0	0	0.0	0	0.0	1	5.5	0	0.0
6/04	7	24	3	5.375	50	22.0	1	5.5	0	0.0	0	0.0	0	0.0
6/05	8	25	1	8.0	50	20.0	0	0.0	0	0.0	0	0.0	0	0.0
6/05	8	26	2	8.0	50	21.0	0	0.0	0	0.0	0	0.0	0	0.0
6/05	8	27	3	5.375	50	23.0	0	0.0	0	0.0	0	0.0	0	0.0
6/05	8	28	1	5.375	50	15.5	1	7.7	0	0.0	0	0.0	0	0.0
6/05	9	29	2	8.0	50	20.5	0	0.0	0	0.0	0	0.0	0	0.0
6/05	9	30	3	8.0	50	21.5	3	16.7	0	0.0	0	0.0	0	0.0
6/05	9	31	1	5.375	50	21.5	2	11.2	0	0.0	0	0.0	0	0.0
6/05	9	32	3	5.375	50	21.5	0	0.0	0	0.0	0	0.0	0	0.0
6/06	10	33	1	8.0	50	18.0	1	6.7	0	0.0	0	0.0	0	0.0
6/06	10	34	2	8.0	50	21.0	0	0.0	0	0.0	0	0.0	0	0.0
6/06	10	35	3	5.375	50	11.0	0	0.0	0	0.0	0	0.0	0	0.0
6/06	10	36	2	5.375	50	21.0	0	0.0	0	0.0	0	0.0	0	0.0
6/06	11	37	2	8.0	50	21.5	2	11.2	0	0.0	0	0.0	0	0.0
6/06	11	38	3	8.0	50	21.5	0	0.0	0	0.0	0	0.0	0	0.0
6/06	11	39	1	5.375	50	21.0	1	5.7	1	5.7	0	0.0	0	0.0
6/06	11	40	3	5.375	50	22.0	4	21.8	0	0.0	0	0.0	0	0.0
6/07	12	41	1	8.0	50	20.5	1	5.9	0	0.0	0	0.0	0	0.0
6/07	12	42	3	8.0	50	6.0	0	0.0	0	0.0	0	0.0	0	0.0
6/07	12	43	2	5.375	50	20.0	0	0.0	0	0.0	0	0.0	0	0.0
6/07	12	44	1	5.375	50	17.0	2	14.1	0	0.0	0	0.0	0	0.0
6/07 [b]	13													
6/08	14	45	1	8.0	50	13.0	0	0.0	0	0.0	0	0.0	0	0.0
6/08	14	46	2	8.0	50	22.0	1	5.5	0	0.0	0	0.0	0	0.0
6/08	14	47	3	5.375	50	21.0	1	5.7	0	0.0	0	0.0	0	0.0
6/08	14	48	1	5.375	50	20.0	1	6.0	0	0.0	1	6.0	0	0.0

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Table 1.–Page 2 of 10.

Date	Tide No.	Drift No.	Station No.	Mesh size (in)	Net length (Fathoms)	Fishing time (min)	Chinook No. caught	Chinook CPUE	Sockeye No. caught	Sockeye CPUE	Chum No. caught	Chum CPUE	Coho No. caught	Coho CPUE
6/08	15	49	2	8.0	50	21.5	1	5.6	0	0.0	0	0.0	0	0.0
6/08	15	50	3	8.0	50	26.0	5	23.1	0	0.0	0	0.0	0	0.0
6/08	15	51	1	5.375	50	26.0	3	13.8	0	0.0	0	0.0	0	0.0
6/08	15	52	2	5.375	50	21.5	1	5.6	0	0.0	0	0.0	0	0.0
6/09	16	53	1	8.0	50	9.5	0	0.0	0	0.0	0	0.0	0	0.0
6/09	16	54	2	8.0	50	20.5	0	0.0	0	0.0	0	0.0	0	0.0
6/09	16	55	3	5.375	50	21.0	0	0.0	0	0.0	0	0.0	0	0.0
6/09	16	56	2	5.375	50	20.5	0	0.0	0	0.0	0	0.0	0	0.0
6/09	17	57	3	8.0	50	22.5	2	10.7	0	0.0	0	0.0	0	0.0
6/09	17	58	2	8.0	50	20.5	0	0.0	0	0.0	0	0.0	0	0.0
6/09	17	59	1	5.375	50	21.5	0	0.0	0	0.0	1	5.6	0	0.0
6/09	17	60	2	5.375	50	21.5	1	5.6	0	0.0	1	5.6	0	0.0
6/10 [c]	18	61	1	8.0	50	20.5	0	0.0	0	0.0	0	0.0	0	0.0
6/10	18	62	3	8.0	50	21.0	1	5.7	0	0.0	0	0.0	0	0.0
6/10	18	63	2	5.375	50	22.0	1	5.5	0	0.0	1	5.5	0	0.0
6/10	18	64	1	5.375	50	21.0	0	0.0	1	5.7	1	5.7	0	0.0
6/11	19	65	1	8.0	50	20.5	0	0.0	0	0.0	0	0.0	0	0.0
6/11	19	66	3	8.0	50	23.5	1	5.1	0	0.0	0	0.0	0	0.0
6/11	19	67	2	5.375	50	21.0	1	5.7	1	5.7	0	0.0	0	0.0
6/11	19	68	3	5.375	50	21.0	0	0.0	0	0.0	1	5.7	0	0.0
6/11	20	69	1	8.0	50	23.0	0	0.0	0	0.0	0	0.0	0	0.0
6/11	20	70	2	8.0	50	20.5	0	0.0	0	0.0	0	0.0	0	0.0
6/11	20	71	3	5.375	50	23.5	1	5.1	0	0.0	1	5.1	0	0.0
6/11	20	72	1	5.375	50	22.0	1	5.5	0	0.0	0	0.0	0	0.0
6/12	21	73	2	8.0	50	21.5	1	5.6	0	0.0	0	0.0	0	0.0
6/12	21	74	3	8.0	50	22.0	0	0.0	0	0.0	0	0.0	0	0.0
6/12	21	75	1	5.375	50	14.5	0	0.0	0	0.0	0	0.0	0	0.0
6/12	21	76	2	5.375	50	23.0	1	5.2	1	5.2	0	0.0	0	0.0
6/12	22	77	1	8.0	50	20.0	0	0.0	0	0.0	0	0.0	0	0.0
6/12	22	78	2	8.0	50	20.5	0	0.0	0	0.0	0	0.0	0	0.0
6/12	22	79	3	5.375	50	6.0	0	0.0	0	0.0	0	0.0	0	0.0
6/12	22	80	2	5.375	50	20.5	0	0.0	0	0.0	0	0.0	0	0.0
6/13	23	81	2	8.0	50	20.5	0	0.0	0	0.0	0	0.0	0	0.0
6/13	23	82	3	8.0	50	21.0	0	0.0	0	0.0	0	0.0	0	0.0
6/13	23	83	1	5.375	50	14.5	2	16.6	0	0.0	0	0.0	0	0.0
6/13	23	84	3	5.375	50	22.0	2	10.9	0	0.0	2	10.9	0	0.0
6/13	24	85	1	8.0	50	15.5	0	0.0	0	0.0	0	0.0	0	0.0
6/13	24	86	3	8.0	50	21.0	1	5.7	0	0.0	0	0.0	0	0.0
6/13	24	87	2	5.375	50	21.5	0	0.0	1	5.6	1	5.6	0	0.0
6/13	24	88	1	5.375	50	20.0	1	6.0	0	0.0	0	0.0	0	0.0
6/14	25	89	1	8.0	50	19.0	0	0.0	0	0.0	0	0.0	0	0.0
6/14	25	90	3	8.0	50	20.5	1	5.9	0	0.0	0	0.0	0	0.0
6/14	25	91	2	5.375	50	20.5	1	5.9	1	5.9	2	11.7	0	0.0
6/14	25	92	3	5.375	50	20.5	0	0.0	1	5.9	1	5.9	0	0.0
6/14	26	93	1	8.0	50	18.0	0	0.0	0	0.0	0	0.0	0	0.0
6/14	26	94	2	8.0	50	25.5	2	9.4	0	0.0	0	0.0	0	0.0
6/14	26	95	3	5.375	50	21.0	1	5.7	1	5.7	0	0.0	0	0.0
6/14	26	96	1	5.375	50	21.5	5	27.9	0	0.0	0	0.0	0	0.0
6/15	27	97	2	8.0	50	21.5	0	0.0	0	0.0	0	0.0	0	0.0
6/15	27	98	3	8.0	50	22.0	0	0.0	0	0.0	0	0.0	0	0.0
6/15	27	99	1	5.375	50	18.5	4	25.9	2	13.0	0	0.0	0	0.0

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Table 1.–Page 3 of 10.

Date	Tide No.	Drift No.	Station No.	Mesh size (in)	Net length (Fathoms)	Fishing Time (min)	Chinook No. caught	Chinook CPUE	Sockeye No. caught	Sockeye CPUE	Chum No. caught	Chum CPUE	Coho No. caught	Coho CPUE
6/15	27	100	2	5.375	50	25.0	1	4.8	0	0.0	3	14.4	0	0.0
6/15	28	101	1	8.0	50	20.5	0	0.0	0	0.0	0	0.0	0	0.0
6/15	28	102	2	8.0	50	14.0	0	0.0	0	0.0	0	0.0	0	0.0
6/15	28	103	3	5.375	50	22.0	1	5.5	0	0.0	1	5.5	0	0.0
6/15	28	104	2	5.375	50	21.5	4	22.3	1	5.6	4	22.3	0	0.0
6/16	29	105	2	8.0	50	22.0	3	16.4	0	0.0	0	0.0	0	0.0
6/16	29	106	3	8.0	50	23.5	1	5.1	0	0.0	0	0.0	0	0.0
6/16	29	107	1	5.375	50	22.0	1	5.5	1	5.5	0	0.0	0	0.0
6/16	29	108	3	5.375	50	22.5	3	16.0	3	16.0	0	0.0	0	0.0
6/16	30	109	1	8.0	50	25.5	1	4.7	0	0.0	0	0.0	0	0.0
6/16	30	110	3	8.0	50	21.0	0	0.0	0	0.0	0	0.0	0	0.0
6/16	30	111	2	5.375	50	23.0	3	15.7	3	15.7	1	5.2	0	0.0
6/16	30	112	1	5.375	50	23.0	3	15.7	4	20.9	0	0.0	0	0.0
6/17	31	113	1	8.0	50	17.5	0	0.0	0	0.0	0	0.0	0	0.0
6/17	31	114	3	8.0	50	21.5	3	16.7	0	0.0	0	0.0	0	0.0
6/17	31	115	2	5.375	50	22.0	1	5.5	2	10.9	3	16.4	0	0.0
6/17	31	116	3	5.375	50	24.5	10	49.0	1	4.9	2	9.8	0	0.0
6/17	32	117	1	8.0	50	21.5	1	5.6	0	0.0	2	11.2	0	0.0
6/17	32	118	2	8.0	50	21.0	1	5.7	0	0.0	0	0.0	0	0.0
6/17	32	119	3	5.375	50	20.5	2	11.7	4	23.4	1	5.9	0	0.0
6/17	32	120	1	5.375	50	21.0	4	22.9	7	40.0	2	11.4	0	0.0
6/18	33	121	2	8.0	50	23.0	3	15.7	0	0.0	0	0.0	0	0.0
6/18	33	122	3	8.0	50	21.5	5	27.9	0	0.0	1	5.6	0	0.0
6/18	33	123	1	5.375	50	23.0	2	10.4	4	20.9	3	15.7	0	0.0
6/18	33	124	2	5.375	50	24.0	3	15.0	1	5.0	7	35.0	0	0.0
6/18	34	125	1	8.0	50	16.5	0	0.0	0	0.0	0	0.0	0	0.0
6/18	34	126	2	8.0	50	20.5	2	11.7	0	0.0	0	0.0	0	0.0
6/18	34	127	3	5.375	50	21.0	3	17.1	2	11.4	3	17.1	0	0.0
6/18	34	128	2	5.375	50	22.0	2	10.9	2	10.9	6	32.7	0	0.0
6/19	35	129	2	8.0	50	22.5	2	10.7	1	5.3	0	0.0	0	0.0
6/19	35	130	3	8.0	50	24.5	4	19.6	0	0.0	0	0.0	0	0.0
6/19	35	131	1	5.375	50	23.0	3	15.7	11	57.4	2	10.4	0	0.0
6/19	35	132	3	5.375	50	22.5	6	32.0	1	5.3	9	48.0	0	0.0
6/19	36	133	1	8.0	50	23.5	3	15.3	0	0.0	0	0.0	0	0.0
6/19	36	134	3	8.0	50	24.0	3	15.0	0	0.0	0	0.0	0	0.0
6/19	36	135	2	5.375	50	26.0	4	18.5	4	18.5	7	32.3	0	0.0
6/19	36	136	1	5.375	50	22.5	4	21.3	9	48.0	7	37.3	0	0.0
6/20	37	137	1	8.0	50	19.0	0	0.0	0	0.0	0	0.0	0	0.0
6/20	37	138	3	8.0	50	22.0	2	10.9	2	10.9	0	0.0	0	0.0
6/20	37	139	2	5.375	50	23.5	4	20.4	3	15.3	6	30.6	0	0.0
6/20	37	140	3	5.375	50	23.0	1	5.2	3	15.7	5	26.1	0	0.0
6/20	38	141	1	8.0	50	20.5	0	0.0	0	0.0	0	0.0	0	0.0
6/20	38	142	2	8.0	50	21.0	0	0.0	0	0.0	0	0.0	0	0.0
6/20	38	143	3	5.375	50	22.5	2	10.7	4	21.3	3	16.0	0	0.0
6/20	38	144	1	5.375	50	20.5	4	23.4	5	29.3	2	11.7	0	0.0
6/21	39	145	2	8.0	50	23.0	3	15.7	0	0.0	0	0.0	0	0.0
6/21	39	146	3	8.0	50	21.0	1	5.7	0	0.0	0	0.0	0	0.0
6/21	39	147	1	5.375	50	18.0	1	6.7	5	33.3	4	26.7	0	0.0
6/21	39	148	2	5.375	50	24.0	4	20.0	9	45.0	6	30.0	0	0.0
6/21	40	149	1	8.0	50	12.5	0	0.0	0	0.0	0	0.0	0	0.0

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Table 1.–Page 4 of 10.

Date	Tide No.	Drift No.	Station No.	Mesh size (in)	Net length (Fathoms)	Fishing Time (min)	Chinook No. caught	Chinook CPUE	Sockeye No. caught	Sockeye CPUE	Chum No. caught	Chum CPUE	Coho No. caught	Coho CPUE
6/21	40	150	2	8.0	50	19.0	0	0.0	0	0.0	0	0.0	0	0.0
6/21	40	151	3	5.375	50	18.5	2	13.0	1	6.5	1	6.5	0	0.0
6/21	40	152	2	5.375	50	20.5	0	0.0	0	0.0	1	5.9	0	0.0
6/22	41	153	2	8.0	50	22.5	1	5.3	1	5.3	0	0.0	0	0.0
6/22	41	154	3	8.0	50	23.0	2	10.4	1	5.2	2	10.4	0	0.0
6/22	41	155	1	5.375	50	23.5	1	5.1	7	35.7	6	30.6	0	0.0
6/22	41	156	3	5.375	50	26.0	3	13.8	11	50.8	24	110.8	0	0.0
6/22	42	157	1	8.0	50	21.5	0	0.0	0	0.0	0	0.0	0	0.0
6/22	42	158	3	8.0	50	23.0	5	26.1	0	0.0	0	0.0	0	0.0
6/22	42	159	2	5.375	50	16.5	2	14.5	1	7.3	6	43.6	0	0.0
6/22	42	160	1	5.375	50	22.5	1	5.3	2	10.7	1	5.3	0	0.0
6/23	43	161	1	8.0	50	20.5	0	0.0	0	0.0	0	0.0	0	0.0
6/23	43	162	3	8.0	50	22.0	3	16.4	0	0.0	0	0.0	0	0.0
6/23	43	163	2	5.375	50	25.0	1	4.8	2	9.6	3	14.4	0	0.0
6/23	43	164	3	5.375	50	22.0	0	0.0	6	32.7	10	54.5	0	0.0
6/23	44	165	2	8.0	50	20.5	1	5.9	0	0.0	0	0.0	0	0.0
6/23	44	166	3	8.0	50	23.5	6	30.6	0	0.0	0	0.0	0	0.0
6/23	44	167	2	5.375	50	13.5	5	44.4	2	17.8	2	17.8	0	0.0
6/23	44	168	1	5.375	50	19.5	0	0.0	3	18.5	0	0.0	0	0.0
6/24 [c]	45	169	2	8.0	50	21.5	3	16.7	0	0.0	0	0.0	0	0.0
6/24	45	170	3	8.0	50	21.0	2	11.4	0	0.0	0	0.0	0	0.0
6/24	45	171	1	5.375	50	23.0	0	0.0	8	41.7	4	20.9	0	0.0
6/24	45	172	2	5.375	50	21.5	1	5.6	5	27.9	3	16.7	0	0.0
6/25	46	173	1	8.0	50	20.5	0	0.0	0	0.0	1	5.9	0	0.0
6/25	46	174	2	8.0	50	22.0	4	21.8	1	5.5	1	5.5	0	0.0
6/25	46	175	3	5.375	50	21.5	1	5.6	3	16.7	7	39.1	0	0.0
6/25	46	176	2	5.375	50	21.0	0	0.0	1	5.7	3	17.1	0	0.0
6/25	47	177	3	8.0	50	22.0	4	21.8	0	0.0	0	0.0	0	0.0
6/25	47	178	2	8.0	50	21.0	2	11.4	0	0.0	0	0.0	0	0.0
6/25	47	179	1	5.375	50	20.5	0	0.0	45	263.4	10	58.5	0	0.0
6/25	47	180	3	5.375	50	9.0	1	13.3	0	0.0	16	213.3	0	0.0
6/26	48	181	1	8.0	50	17.0	0	0.0	0	0.0	0	0.0	0	0.0
6/26	48	182	3	8.0	50	22.5	7	37.3	0	0.0	0	0.0	0	0.0
6/26	48	183	2	5.375	50	22.0	2	10.9	2	10.9	20	109.1	0	0.0
6/26	48	184	1	5.375	50	16.5	2	14.5	6	43.6	5	36.4	0	0.0
6/26	49	185	1	8.0	50	20.5	0	0.0	0	0.0	1	5.9	0	0.0
6/26	49	186	3	8.0	50	23.0	6	31.3	0	0.0	2	10.4	0	0.0
6/26	49	187	2	5.375	50	23.0	1	5.2	3	15.7	19	99.1	0	0.0
6/26 [d]	49													
6/27	50	188	1	8.0	50	21.0	1	5.7	0	0.0	0	0.0	0	0.0
6/27	50	189	2	8.0	50	21.0	1	5.7	1	5.7	0	0.0	0	0.0
6/27	50	190	3	5.375	50	33.5	1	3.6	3	10.7	52	186.3	0	0.0
6/27	50	191	1	5.375	50	13.5	0	0.0	3	26.7	6	53.3	0	0.0
6/27	51	192	2	8.0	50	21.0	0	0.0	1	5.7	0	0.0	0	0.0
6/27	51	193	3	8.0	50	21.5	1	5.6	3	16.7	2	11.2	0	0.0
6/27	51	194	1	5.375	50	25.5	1	4.7	23	108.2	7	32.9	0	0.0
6/27	51	195	2	5.375	50	26.0	0	0.0	2	9.2	25	115.4	0	0.0
6/28	52	196	1	8.0	50	20.5	0	0.0	0	0.0	0	0.0	0	0.0
6/28	52	197	2	8.0	50	21.5	0	0.0	0	0.0	0	0.0	0	0.0
6/28	52	198	3	5.375	50	24.0	0	0.0	2	10.0	21	105.0	0	0.0

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Table 1.–Page 5 of 10.

Date	Tide No.	Drift No.	Station No.	Mesh size (in)	Net length (Fathoms)	Fishing Time (min)	Chinook No. caught	Chinook CPUE	Sockeye No. caught	Sockeye CPUE	Chum No. caught	Chum CPUE	Coho No. caught	Coho CPUE
6/28	52	199	2	5.375	50	23.0	0	0.0	1	5.2	9	47.0	0	0.0
6/28	53	200	2	8.0	50	21.0	1	5.7	1	5.7	1	5.7	0	0.0
6/28	53	201	3	8.0	50	20.5	0	0.0	1	5.9	0	0.0	0	0.0
6/28	53	202	1	5.375	50	24.5	1	4.9	13	63.7	6	29.4	0	0.0
6/28	53	203	3	5.375	50	28.5	4	16.8	3	12.6	53	223.2	0	0.0
6/29	54	204	1	8.0	50	14.5	0	0.0	0	0.0	0	0.0	0	0.0
6/29	54	205	3	8.0	50	24.0	7	35.0	3	15.0	2	10.0	0	0.0
6/29	54	206	2	5.375	50	46.0	1	2.6	6	15.7	100	260.9	0	0.0
6/29	54	207	1	5.375	50	7.0	1	17.1	8	137.1	0	0.0	0	0.0
6/29	55	208	1	8.0	50	21.5	1	5.6	2	11.2	1	5.6	0	0.0
6/29	55	209	3	8.0	50	22.0	4	21.8	0	0.0	7	38.2	0	0.0
6/29	55	210	2	5.375	50	15.0	1	8.0	3	24.0	44	352.0	0	0.0
6/29	55	211	3	5.375	50	8.0	1	15.0	2	30.0	18	270.0	0	0.0
6/30	56	212	1	8.0	50	16.0	1	7.5	0	0.0	0	0.0	0	0.0
6/30	56	213	2	8.0	50	23.0	3	15.7	0	0.0	4	20.9	0	0.0
6/30	56	214	3	5.375	50	8.5	0	0.0	3	42.4	28	395.3	0	0.0
6/30	56	215	1	5.375	50	5.5	1	21.8	6	130.9	11	240.0	0	0.0
6/30	57	216	2	8.0	50	21.5	2	11.2	0	0.0	0	0.0	0	0.0
6/30	57	217	3	8.0	50	21.5	2	11.2	1	5.6	0	0.0	0	0.0
6/30	57	218	1	5.375	50	5.5	0	0.0	4	87.3	14	305.5	0	0.0
6/30	57	219	2	5.375	50	7.0	1	17.1	1	17.1	17	291.4	0	0.0
7/01	58	220	1	8.0	50	18.5	0	0.0	0	0.0	0	0.0	0	0.0
7/01	58	221	2	8.0	50	21.0	0	0.0	0	0.0	0	0.0	0	0.0
7/01	58	222	3	5.375	50	12.0	2	20.0	0	0.0	38	380.0	0	0.0
7/01	58	223	2	5.375	50	5.5	1	21.8	2	43.6	5	109.1	0	0.0
7/01	59	224	2	8.0	50	23.0	3	15.7	0	0.0	0	0.0	0	0.0
7/01	59	225	3	8.0	50	21.5	0	0.0	0	0.0	2	11.2	0	0.0
7/01	59	226	1	5.375	50	4.0	0	0.0	4	120.0	5	150.0	0	0.0
7/01	59	227	3	5.375	50	8.0	0	0.0	2	30.0	36	540.0	0	0.0
7/02	60	228	1	8.0	50	20.5	0	0.0	0	0.0	0	0.0	0	0.0
7/02	60	229	3	8.0	50	24.5	5	24.5	0	0.0	5	24.5	0	0.0
7/02	60	230	2	5.375	50	9.0	0	0.0	0	0.0	22	293.3	0	0.0
7/02	60	231	1	5.375	50	6.5	0	0.0	0	0.0	3	55.4	0	0.0
7/02	61	232	1	8.0	50	23.0	7	36.5	0	0.0	0	0.0	0	0.0
7/02	61	233	3	8.0	50	20.5	0	0.0	0	0.0	2	11.7	0	0.0
7/02	61	234	2	5.375	50	8.5	0	0.0	0	0.0	25	352.9	0	0.0
7/02	61	235	3	5.375	50	6.0	0	0.0	1	20.0	19	380.0	0	0.0
7/03	62	236	1	8.0	50	19.5	1	6.2	1	6.2	0	0.0	0	0.0
7/03	62	237	2	8.0	50	21.0	1	5.7	0	0.0	2	11.4	0	0.0
7/03	62	238	3	5.375	50	9.5	4	50.5	1	12.6	34	429.5	0	0.0
7/03	62	239	1	5.375	50	5.0	0	0.0	1	24.0	3	72.0	0	0.0
7/03	63	240	2	8.0	50	12.0	1	10.0	0	0.0	0	0.0	0	0.0
7/03	63	241	3	8.0	50	23.5	2	10.2	0	0.0	0	0.0	0	0.0
7/03	63	242	1	5.375	50	13.0	1	9.2	20	184.6	8	73.8	0	0.0
7/03	63	243	2	5.375	50	5.5	0	0.0	1	21.8	10	218.2	0	0.0
7/04 [e]	64													
7/04 [e]	65													
7/05	66	244	1	8.0	50	20.5	0	0.0	0	0.0	1	5.9	0	0.0
7/05	66	245	3	8.0	50	23.0	2	10.4	0	0.0	1	5.2	0	0.0
7/05 [d]	66													

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Table 1.–Page 6 of 10.

Date	Tide No.	Drift No.	Station No.	Mesh size (in)	Net length (Fathoms)	Fishing Time (min)	Chinook No. caught	Chinook CPUE	Sockeye No. caught	Sockeye CPUE	Chum No. caught	Chum CPUE	Coho No. caught	Coho CPUE
7/05 [d]	66													
7/05 [a]	67													
7/06 [a]	68													
7/06	69	246	1	8.0	50	17.0	0	0.0	0	0.0	1	7.1	0	0.0
7/06	69	247	3	8.0	50	21.0	1	5.7	0	0.0	1	5.7	0	0.0
7/06	69	248	2	5.375	50	6.0	0	0.0	0	0.0	3	60.0	0	0.0
7/06	69	249	3	5.375	50	11.0	1	10.9	3	32.7	11	120.0	0	0.0
7/07	70	250	1	8.0	50	75.5	0	0.0	0	0.0	0	0.0	0	0.0
7/07	70	251	2	8.0	50	21.0	1	5.7	0	0.0	0	0.0	0	0.0
7/07	70	252	3	5.375	50	19.5	0	0.0	2	12.3	51	313.8	0	0.0
7/07	70	253	2	5.375	50	6.5	0	0.0	0	0.0	12	221.5	0	0.0
7/07	71	254	2	8.0	50	21.5	2	11.2	0	0.0	1	5.6	0	0.0
7/07	71	255	3	8.0	50	23.5	0	0.0	1	5.1	3	15.3	0	0.0
7/07	71	256	1	5.375	50	9.0	0	0.0	2	26.7	13	173.3	0	0.0
7/07	71	257	3	5.375	50	5.0	0	0.0	2	48.0	11	264.0	0	0.0
7/08	72	258	1	8.0	50	18.5	0	0.0	0	0.0	0	0.0	0	0.0
7/08	72	259	3	8.0	50	22.0	2	10.9	0	0.0	0	0.0	1	5.5
7/08	72	260	2	5.375	50	5.0	0	0.0	0	0.0	4	96.0	0	0.0
7/08	72	261	1	5.375	50	9.0	0	0.0	0	0.0	5	66.7	0	0.0
7/08	73	262	1	8.0	50	20.5	0	0.0	0	0.0	0	0.0	0	0.0
7/08	73	263	3	8.0	50	21.0	1	5.7	0	0.0	2	11.4	0	0.0
7/08	73	264	2	5.375	50	11.5	0	0.0	3	31.3	10	104.3	0	0.0
7/08	73	265	3	5.375	50	10.5	2	22.9	1	11.4	12	137.1	0	0.0
7/09 [f]	74													
7/09	75	266	1	8.0	50	21.5	1	5.6	0	0.0	0	0.0	0	0.0
7/09	75	267	2	8.0	50	21.5	1	5.6	0	0.0	2	11.2	0	0.0
7/09	75	268	3	5.375	50	17.5	0	0.0	4	27.4	38	260.6	0	0.0
7/09	75	269	1	5.375	50	14.5	1	8.3	4	33.1	20	165.5	0	0.0
7/10 [c]	76	270	3	8.0	50	22.0	1	5.5	0	0.0	0	0.0	0	0.0
7/10	76	271	2	8.0	50	24.0	1	5.0	0	0.0	0	0.0	0	0.0
7/10	76	272	1	5.375	50	11.5	0	0.0	0	0.0	6	62.6	0	0.0
7/10	76	273	2	5.375	50	13.5	0	0.0	0	0.0	7	62.2	0	0.0
7/11	77	274	1	5.375	50	19.0	0	0.0	2	12.6	2	12.6	0	0.0
7/11	77	275	2	5.375	50	44.5	0	0.0	2	5.4	152	409.9	0	0.0
7/11 [a]	78													
7/12	79	276	2	5.375	50	16.5	0	0.0	0	0.0	43	312.7	0	0.0
7/12	79	277	3	5.375	50	13.5	0	0.0	2	17.8	38	337.8	0	0.0
7/12	80	278	1	5.375	50	15.0	0	0.0	1	8.0	59	472.0	0	0.0
7/12	80	279	3	5.375	50	5.5	1	21.8	0	0.0	14	305.5	0	0.0
7/13	81	280	2	5.375	50	18.0	0	0.0	0	0.0	44	293.3	0	0.0
7/13	81	281	1	5.375	50	12.5	2	19.2	1	9.6	15	144.0	0	0.0
7/13	82	282	3	5.375	50	11.5	0	0.0	0	0.0	3	31.3	0	0.0
7/13	82	283	2	5.375	50	18.0	0	0.0	0	0.0	10	66.7	0	0.0
7/14	83	284	1	5.375	50	14.0	0	0.0	1	8.6	3	25.7	0	0.0
7/14	83	285	2	5.375	50	22.5	0	0.0	0	0.0	30	160.0	0	0.0
7/14	84	286	2	5.375	50	22.0	0	0.0	0	0.0	3	16.4	0	0.0
7/14	84	287	3	5.375	50	23.5	0	0.0	1	5.1	19	97.0	1	5.1
7/15	85	288	3	5.375	50	21.0	0	0.0	0	0.0	55	314.3	0	0.0
7/15	85	289	1	5.375	50	8.0	1	15.0	1	15.0	5	75.0	1	15.0

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Table 1.–Page 7 of 10.

Date	Tide No.	Drift No.	Station No.	Mesh size (in)	Net length (Fathoms)	Fishing Time (min)	Chinook No. caught	Chinook CPUE	Sockeye No. caught	Sockeye CPUE	Chum No. caught	Chum CPUE	Coho No. caught	Coho CPUE
7/15	86	290	1	5.375	50	11.0	0	0.0	0	0.0	15	163.6	0	0.0
7/15	86	291	3	5.375	50	19.0	0	0.0	0	0.0	31	195.8	2	12.6
7/16	87	292	2	5.375	50	20.5	0	0.0	0	0.0	52	304.4	0	0.0
7/16	87	293	1	5.375	50	9.0	0	0.0	0	0.0	6	80.0	0	0.0
7/16	88	294	3	5.375	50	17.0	0	0.0	0	0.0	9	63.5	0	0.0
7/16	88	295	2	5.375	50	24.0	0	0.0	0	0.0	15	75.0	0	0.0
7/17	89	296	1	5.375	50	15.5	0	0.0	0	0.0	2	15.5	0	0.0
7/17	89	297	2	5.375	50	20.5	0	0.0	0	0.0	34	199.0	1	5.9
7/17	90	298	2	5.375	50	21.5	0	0.0	0	0.0	23	128.4	0	0.0
7/17	90	299	3	5.375	50	27.0	0	0.0	0	0.0	42	186.7	1	4.4
7/18	91	300	3	5.375	50	17.5	0	0.0	0	0.0	42	288.0	0	0.0
7/18	91	301	1	5.375	50	14.5	0	0.0	0	0.0	15	124.1	0	0.0
7/18	92	302	1	5.375	50	10.0	0	0.0	0	0.0	15	180.0	0	0.0
7/18	92	303	3	5.375	50	14.5	0	0.0	2	16.6	11	91.0	1	8.3
7/19	93	304	2	5.375	50	8.0	0	0.0	0	0.0	13	195.0	0	0.0
7/19	93	305	1	5.375	50	6.5	0	0.0	0	0.0	4	73.8	1	18.5
7/19 [g]	94													
7/20 [g]	95													
7/20	96	306	2	5.375	50	17.5	0	0.0	1	6.9	8	54.9	1	6.9
7/20	96	307	3	5.375	50	20.0	0	0.0	0	0.0	21	126.0	0	0.0
7/21	97	308	3	5.375	50	18.5	0	0.0	0	0.0	12	77.8	1	6.5
7/21	97	309	1	5.375	50	16.5	0	0.0	0	0.0	4	29.1	1	7.3
7/21 [g]	98													
7/22 [g]	99		2	5.375	50		0		0		0		0	
7/22	100	310	3	5.375	50	23.5	0	0.0	0	0.0	18	91.9	1	5.1
7/22	100	311	2	5.375	50	21.5	0	0.0	0	0.0	7	39.1	0	0.0
7/23	101	312	1	5.375	50	15.5	0	0.0	0	0.0	4	31.0	1	7.7
7/23	101	313	2	5.375	50	22.0	0	0.0	0	0.0	6	32.7	1	5.5
7/23 [c]	101	314												
7/23	102	315	2	5.375	50	26.5	0	0.0	0	0.0	22	99.6	2	9.1
7/23	102	316	3	5.375	50	26.5	0	0.0	0	0.0	16	72.5	6	27.2
7/23	102	317	1	5.375	50	19.5	0	0.0	0	0.0	6	36.9	5	30.8
7/24 [c]	103	318	3	5.375	50	24.0	0	0.0	0	0.0	11	55.0	3	15.0
7/24	103	319	1	5.375	50	19.5	0	0.0	0	0.0	1	6.2	1	6.2
7/24	103	320	2	5.375	50	22.0	0	0.0	0	0.0	2	10.9	2	10.9
7/25 [g]	104													
7/25 [f]	105													
7/26	106	321	3	5.375	50	20.5	0	0.0	0	0.0	20	117.1	5	29.3
7/26	106	322	1	5.375	50	11.0	0	0.0	0	0.0	2	21.8	3	32.7
7/26	106	323	2	5.375	50	21.5	0	0.0	0	0.0	15	83.7	10	55.8
7/26	107	324	1	5.375	50	21.5	0	0.0	0	0.0	1	5.6	5	27.9
7/26	107	325	3	5.375	50	21.0	0	0.0	0	0.0	5	28.6	0	0.0
7/26	107	326	2	5.375	50	21.5	0	0.0	0	0.0	1	5.6	5	27.9
7/27 [a]	108													
7/27	109	327	3	5.375	50	22.5	0	0.0	0	0.0	4	21.3	1	5.3
7/27	109	328	2	5.375	50	21.5	0	0.0	0	0.0	1	5.6	0	0.0
7/27	109	329	1	5.375	50	21.5	0	0.0	0	0.0	0	0.0	0	0.0
7/28	110	330	1	5.375	50	21.0	0	0.0	0	0.0	1	5.7	1	5.7
7/28	110	331	2	5.375	50	21.5	0	0.0	0	0.0	5	27.9	4	22.3

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Table 1.–Page 8 of 10.

Date	Tide No.	Drift No.	Station No.	Mesh size (in)	Net length (Fathoms)	Fishing Time (min)	Chinook No. caught	Chinook CPUE	Sockeye No. caught	Sockeye CPUE	Chum No. caught	Chum CPUE	Coho No. caught	Coho CPUE
7/28	110	332	3	5.375	50	22.5	0	0.0	0	0.0	4	21.3	16	85.3
7/28	111	333	2	5.375	50	20.5	0	0.0	0	0.0	0	0.0	1	5.9
7/28	111	334	3	5.375	50	22.5	0	0.0	0	0.0	3	16.0	8	42.7
7/28	111	335	1	5.375	50	20.5	0	0.0	0	0.0	0	0.0	1	5.9
7/29	112	336	3	5.375	50	18.0	0	0.0	0	0.0	8	53.3	11	73.3
7/29	112	337	1	5.375	50	14.5	0	0.0	0	0.0	3	24.8	4	33.1
7/29	112	338	2	5.375	50	11.5	0	0.0	0	0.0	3	31.3	6	62.6
7/29	113	339	1	5.375	50	24.0	0	0.0	0	0.0	8	40.0	11	55.0
7/29	113	340	3	5.375	50	22.0	0	0.0	0	0.0	5	27.3	2	10.9
7/29	113	341	2	5.375	50	21.0	0	0.0	0	0.0	3	17.1	2	11.4
7/30	114	342	2	5.375	50	22.0	0	0.0	0	0.0	6	32.7	7	38.2
7/30	114	343	1	5.375	50	12.5	0	0.0	0	0.0	1	9.6	0	0.0
7/30	114	344	3	5.375	50	24.0	0	0.0	0	0.0	11	55.0	18	90.0
7/30	115	345	3	5.375	50	22.0	0	0.0	0	0.0	6	32.7	2	10.9
7/30	115	346	2	5.375	50	20.5	0	0.0	0	0.0	0	0.0	0	0.0
7/30	115	347	1	5.375	50	19.0	0	0.0	0	0.0	0	0.0	6	37.9
7/31	116	348	1	5.375	50	17.5	0	0.0	0	0.0	2	13.7	1	6.9
7/31	116	349	2	5.375	50	25.5	0	0.0	0	0.0	16	75.3	22	103.5
7/31	116	350	3	5.375	50	13.5	0	0.0	0	0.0	9	80.0	13	115.6
7/31	117	351	2	5.375	50	21.5	0	0.0	0	0.0	2	11.2	8	44.7
7/31	117	352	3	5.375	50	27.0	0	0.0	0	0.0	7	31.1	25	111.1
7/31	117	353	1	5.375	50	14.5	0	0.0	0	0.0	2	16.6	5	41.4
8/01	118	354	3	5.375	50	24.0	0	0.0	0	0.0	6	30.0	36	180.0
8/01	118	355	1	5.375	50	13.0	0	0.0	0	0.0	4	36.9	12	110.8
8/01	118	356	2	5.375	50	12.0	0	0.0	0	0.0	0	0.0	10	100.0
8/01	119	357	1	5.375	50	13.0	0	0.0	0	0.0	1	9.2	4	36.9
8/01	119	358	3	5.375	50	14.0	0	0.0	0	0.0	0	0.0	21	180.0
8/01	119	359	2	5.375	50	11.5	0	0.0	0	0.0	1	10.4	6	62.6
8/02	120	360	2	5.375	50	13.5	0	0.0	0	0.0	0	0.0	20	177.8
8/02	120	361	1	5.375	50	12.5	0	0.0	0	0.0	1	9.6	13	124.8
8/02	120	362	3	5.375	50	6.0	0	0.0	0	0.0	2	40.0	9	180.0
8/02	121	363	3	5.375	50	14.0	0	0.0	0	0.0	1	8.6	31	265.7
8/02	121	364	2	5.375	50	6.0	0	0.0	0	0.0	2	40.0	2	40.0
8/02	121	365	1	5.375	50	6.5	0	0.0	0	0.0	0	0.0	10	184.6
8/03	122	366	3	5.375	50	12.0	0	0.0	0	0.0	1	10.0	16	160.0
8/03	122	367	2	5.375	50	11.0	0	0.0	0	0.0	1	10.9	1	10.9
8/03	122	368	1	5.375	50	7.5	0	0.0	0	0.0	0	0.0	6	96.0
8/03	123	369	2	5.375	50	11.0	0	0.0	0	0.0	0	0.0	5	54.5
8/03	123	370	3	5.375	50	8.5	0	0.0	0	0.0	0	0.0	4	56.5
8/03	123	371	1	5.375	50	9.0	0	0.0	0	0.0	1	13.3	0	0.0
8/04	124	372	3	5.375	50	18.0	0	0.0	0	0.0	0	0.0	20	133.3
8/04	124	373	1	5.375	50	11.0	0	0.0	0	0.0	0	0.0	9	98.2
8/04	124	374	2	5.375	50	8.5	0	0.0	0	0.0	0	0.0	3	42.4
8/04	125	375	1	5.375	50	10.5	0	0.0	1	11.4	1	11.4	7	80.0
8/04	125	376	3	5.375	50	10.0	0	0.0	0	0.0	1	12.0	21	252.0
8/04	125	377	2	5.375	50	6.0	0	0.0	0	0.0	1	20.0	0	0.0
8/05	126	378	1	5.375	50	15.5	0	0.0	0	0.0	0	0.0	9	69.7
8/05	126	379	2	5.375	50	15.0	0	0.0	0	0.0	1	8.0	19	152.0
8/05	126	380	3	5.375	50	7.5	0	0.0	0	0.0	1	16.0	11	176.0
8/05	127	381	3	5.375	50	26.0	0	0.0	0	0.0	2	9.2	53	244.6
8/05	127	382	2	5.375	50	8.0	0	0.0	0	0.0	0	0.0	2	30.0

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Table 1.–Page 9 of 10.

Date	Tide No.	Drift No.	Station No.	Mesh size (in)	Net length (Fathoms)	Fishing Time (min)	Chinook No. caught	Chinook CPUE	Sockeye No. caught	Sockeye CPUE	Chum No. caught	Chum CPUE	Coho No. caught	Coho CPUE
8/05	127	383	1	5.375	50	13.5	0	0.0	0	0.0	2	17.8	24	213.3
8/06	128	384	1	5.375	50	17.0	0	0.0	0	0.0	0	0.0	7	49.4
8/06	128	385	2	5.375	50	19.0	0	0.0	0	0.0	1	6.3	19	120.0
8/06	128	386	3	5.375	50	12.0	0	0.0	0	0.0	2	20.0	5	50.0
8/06	129	387	2	5.375	50	23.5	0	0.0	0	0.0	2	10.2	20	102.1
8/06	129	388	3	5.375	50	16.5	0	0.0	0	0.0	1	7.3	19	138.2
8/06	129	389	1	5.375	50	12.0	0	0.0	0	0.0	0	0.0	9	90.0
8/07	130	390	3	5.375	50	18.5	0	0.0	0	0.0	1	6.5	31	201.1
8/07	130	391	1	5.375	50	17.5	0	0.0	0	0.0	0	0.0	13	89.1
8/07	130	392	2	5.375	50	22.5	0	0.0	0	0.0	4	21.3	8	42.7
8/07	131	393	1	5.375	50	9.5	0	0.0	0	0.0	0	0.0	1	12.6
8/07	131	394	3	5.375	50	16.0	0	0.0	0	0.0	1	7.5	42	315.0
8/07	131	395	2	5.375	50	5.0	0	0.0	0	0.0	2	48.0	3	72.0
8/08 [c,f]	132													
8/09	133	396	2	5.375	50	12.5	0	0.0	0	0.0	1	9.6	6	57.6
8/09	133	397	3	5.375	50	16.5	0	0.0	0	0.0	2	14.5	37	269.1
8/09	133	398	1	5.375	50	14.5	0	0.0	0	0.0	1	8.3	14	115.9
8/09	134	399	1	5.375	50	21.0	0	0.0	0	0.0	0	0.0	7	40.0
8/09	134	400	2	5.375	50	17.0	0	0.0	0	0.0	2	14.1	7	49.4
8/09	134	401	3	5.375	50	19.0	0	0.0	1	6.3	1	6.3	17	107.4
8/10	135	402	2	5.375	50	12.5	0	0.0	0	0.0	0	0.0	17	163.2
8/10	135	403	3	5.375	50	16.0	0	0.0	0	0.0	1	7.5	44	330.0
8/10	135	404	1	5.375	50	14.5	0	0.0	0	0.0	0	0.0	5	41.4
8/10	136	405	3	5.375	50	17.0	0	0.0	0	0.0	0	0.0	7	49.4
8/10	136	406	1	5.375	50	18.0	0	0.0	0	0.0	0	0.0	1	6.7
8/10	136	407	2	5.375	50	16.0	0	0.0	0	0.0	0	0.0	2	15.0
8/11	137	408	1	5.375	50	11.5	0	0.0	0	0.0	0	0.0	0	0.0
8/11	137	409	3	5.375	50	17.5	0	0.0	0	0.0	0	0.0	13	89.1
8/11	137	410	2	5.375	50	13.5	0	0.0	0	0.0	0	0.0	5	44.4
8/11	138	411	2	5.375	50	19.5	0	0.0	0	0.0	0	0.0	3	18.5
8/11	138	412	1	5.375	50	14.5	0	0.0	0	0.0	0	0.0	1	8.3
8/11	138	413	3	5.375	50	15.0	0	0.0	0	0.0	0	0.0	5	40.0
8/12 [a]	139													
8/12	140	414	3	5.375	50	21.0	0	0.0	0	0.0	0	0.0	1	5.7
8/12	140	415	2	5.375	50	6.0	0	0.0	0	0.0	0	0.0	1	20.0
8/12	140	416	1	5.375	50	16.0	0	0.0	0	0.0	0	0.0	3	22.5
8/13	141	417	2	5.375	50	18.0	0	0.0	0	0.0	0	0.0	0	0.0
8/13	141	418	3	5.375	50	25.5	0	0.0	0	0.0	1	4.7	36	169.4
8/13	141	419	1	5.375	50	21.5	0	0.0	0	0.0	0	0.0	8	44.7
8/13	142	420	3	5.375	50	20.0	0	0.0	0	0.0	1	6.0	9	54.0
8/13	142	421	1	5.375	50	22.0	1	5.5	0	0.0	1	5.5	14	76.4
8/13	142	422	2	5.375	50	18.5	0	0.0	0	0.0	0	0.0	15	97.3
8/14	143	423	1	5.375	50	14.0	0	0.0	0	0.0	0	0.0	0	0.0
8/14	143	424	3	5.375	50	21.5	0	0.0	0	0.0	1	5.6	34	189.8
8/14	143	425	2	5.375	50	18.0	0	0.0	0	0.0	1	6.7	3	20.0
8/14	144	426	2	5.375	50	19.5	0	0.0	0	0.0	0	0.0	3	18.5
8/14	144	427	1	5.375	50	18.5	0	0.0	0	0.0	0	0.0	2	13.0
8/14	144	428	3	5.375	50	17.5	0	0.0	0	0.0	0	0.0	4	27.4
8/15	145	429	3	5.375	50	19.0	0	0.0	0	0.0	0	0.0	4	25.3
8/15	145	430	2	5.375	50	19.5	0	0.0	0	0.0	0	0.0	0	0.0
8/15	145	431	1	5.375	50	17.5	0	0.0	0	0.0	0	0.0	0	0.0

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Table 1.–Page 10 of 10.

Date	Tide No.	Drift No.	Station No.	Mesh size (in)	Net length (Fathoms)	Fishing Time (min)	Chinook No. caught	Chinook CPUE	Sockeye No. caught	Sockeye CPUE	Chum No. caught	Chum CPUE	Coho No. caught	Coho CPUE
8/15	146	432	1	5.375	50	18.5	0	0.0	0	0.0	0	0.0	5	32.4
8/15	146	433	2	5.375	50	22.5	0	0.0	0	0.0	0	0.0	4	21.3
8/15	146	434	3	5.375	50	23.0	0	0.0	0	0.0	0	0.0	8	41.7
8/16	147	435	2	5.375	50	20.0	0	0.0	0	0.0	1	6.0	1	6.0
8/16	147	436	3	5.375	50	24.0	0	0.0	0	0.0	0	0.0	14	70.0
8/16	147	437	1	5.375	50	11.0	0	0.0	0	0.0	0	0.0	0	0.0
8/16	148	438	3	5.375	50	17.5	0	0.0	0	0.0	0	0.0	6	41.1
8/16	148	439	1	5.375	50	16.0	0	0.0	0	0.0	0	0.0	2	15.0
8/16	148	440	2	5.375	50	17.5	0	0.0	0	0.0	0	0.0	0	0.0
8/17	149	441	2	5.375	50	20.5	0	0.0	0	0.0	0	0.0	0	0.0
8/17	149	442	3	5.375	50	22.0	0	0.0	0	0.0	0	0.0	1	5.5
8/17	149	443	1	5.375	50	21.0	0	0.0	0	0.0	0	0.0	2	11.4
8/17	150	444	3	5.375	50	21.5	0	0.0	0	0.0	0	0.0	0	0.0
8/17	150	445	1	5.375	50	15.5	0	0.0	0	0.0	0	0.0	3	23.2
8/17	150	446	2	5.375	50	21.5	0	0.0	0	0.0	0	0.0	1	5.6
8/18	151	447	2	5.375	50	21.5	0	0.0	0	0.0	0	0.0	0	0.0
8/18	151	448	3	5.375	50	23.5	0	0.0	0	0.0	1	5.1	22	112.3
8/18	151	449	1	5.375	50	19.5	0	0.0	0	0.0	0	0.0	2	12.3
8/18	152	450	1	5.375	50	23.0	0	0.0	0	0.0	0	0.0	0	0.0
8/18	152	451	2	5.375	50	21.0	0	0.0	0	0.0	0	0.0	1	5.7
8/18	152	452	3	5.375	50	21.0	0	0.0	0	0.0	0	0.0	0	0.0
8/19	153	453	2	5.375	50	20.5	0	0.0	0	0.0	0	0.0	0	0.0
8/19	153	454	3	5.375	50	22.0	0	0.0	0	0.0	0	0.0	3	16.4
8/19	153	455	1	5.375	50	18.5	0	0.0	0	0.0	0	0.0	0	0.0
8/19	154	456	3	5.375	50	21.5	0	0.0	0	0.0	0	0.0	1	5.6
8/19	154	457	2	5.375	50	10.5	0	0.0	0	0.0	0	0.0	0	0.0
8/19	154	458	1	5.375	50	10.0	0	0.0	0	0.0	0	0.0	1	12.0
8/20	155	459	2	5.375	50	22.0	0	0.0	0	0.0	0	0.0	0	0.0
8/20	155	460	1	5.375	50	13.5	0	0.0	0	0.0	0	0.0	3	26.7
8/20	155	461	3	5.375	50	21.0	0	0.0	0	0.0	0	0.0	0	0.0
8/20	156	462	2	5.375	50	16.5	0	0.0	0	0.0	0	0.0	1	7.3
8/20	156	463	1	5.375	50	21.0	0	0.0	0	0.0	0	0.0	0	0.0
8/20	156	464	3	5.375	50	21.0	0	0.0	0	0.0	0	0.0	0	0.0
Totals	156	464					337		380		2,289		1,207	

[a] Tide missed because of unfavorable weather conditions, no data.

[b] Tide missed because of entanglement with subsistence set gillnet, no data.

[c] Only 1 high tide occurred during this day.

[d] Drift missed because of unfavorable weather conditions, no data.

[e] Tide missed because of observance of holiday, no data.

[f] Tide missed because of commercial fishing in Subdistrict W1-A, no data.

[g] Tide missed because of scheduled tide off, no data.

Table 2.–Catch, daily mean tidal catch per unit effort (CPUE), cumulative mean tidal CPUE, and percent passage for the Bethel test fishery, 2011.

	Chinook				Sockeye				Chum				Coho			
Date	No. caught	Daily mean tidal CPUE	Cumulative mean tidal CPUE	Percent passage	No. caught	Daily mean tidal CPUE	Cumulative mean tidal CPUE	Percent passage	No. caught	Daily mean tidal CPUE	Cumulative mean tidal CPUE	Percent passage	No. caught	Daily mean tidal CPUE	Cumulative mean tidal CPUE	Percent passage
6/1	2	1.2	1	1	0	0	0	0	0	0	0	0	0	0	0	0
6/2	1	0.6	2	1	0	0	0	0	0	0	0	0	0	0	0	0
6/3	2	1.1	3	1	0	0	0	0	0	0	0	0	0	0	0	0
6/4 [a]	1	1.2	4	2	0	0	0	0	1	3	3	0	0	0	0	0
6/5	6	3.3	7	3	0	0	0	0	0	0	3	0	0	0	0	0
6/6	8	4.2	11	5	1	3	3	0	0	0	3	0	0	0	0	0
6/7 [a]	3	6.3	18	8	0	1	4	0	0	0	3	0	0	0	0	0
6/8	13	6.8	25	11	0	0	4	0	1	3	6	0	0	0	0	0
6/9	3	1.5	26	12	0	0	4	0	2	6	11	0	0	0	0	0
6/10	2	1.0	27	12	1	3	7	0	2	6	17	0	0	0	0	0
6/11	4	2.0	29	13	1	3	10	1	2	5	22	0	0	0	0	0
6/12	2	1.0	30	14	1	3	13	1	0	0	22	0	0	0	0	0
6/13	6	3.6	34	15	1	3	15	1	3	8	31	0	0	0	0	0
6/14	10	5.1	39	18	3	9	24	2	3	9	39	0	0	0	0	0
6/15	10	5.4	44	20	3	9	33	2	8	21	60	1	0	0	0	0
6/16	15	7.3	51	24	11	29	62	4	1	3	63	1	0	0	0	0
6/17	22	10.8	62	29	14	40	102	7	10	22	85	1	0	0	0	0
6/18	20	10.1	72	33	9	24	126	8	20	50	135	1	0	0	0	0
6/19	29	13.7	86	40	26	65	191	13	25	64	199	2	0	0	0	0
6/20	13	6.5	93	43	17	41	231	15	16	42	241	2	0	0	0	0
6/21	11	5.6	98	45	15	42	274	18	12	35	276	3	0	0	0	0
6/22	15	7.5	106	49	23	52	326	21	39	95	371	4	0	0	0	0
6/23	16	9.4	115	53	13	39	365	24	15	43	414	4	0	0	0	0
6/24	6	3.1	118	55	13	35	400	26	7	19	433	4	0	0	0	0
6/25	12	6.8	125	58	50	143	543	36	38	164	597	6	0	0	0	0
6/26	18	10.3	135	63	11	43	586	39	47	172	769	8	0	0	0	0
6/27	5	2.2	138	64	36	77	664	44	92	194	963	10	0	0	0	0
6/28	6	2.6	140	65	21	46	709	47	90	202	1,165	12	0	0	0	0
6/29	16	9.7	150	70	24	103	813	54	172	441	1,607	16	0	0	0	0
6/30	10	7.8	158	73	15	139	952	63	74	616	2,223	22	0	0	0	0
7/1	6	5.3	163	76	8	97	1,048	69	86	590	2,812	28	0	0	0	0
7/2	12	5.6	169	78	1	10	1,058	70	76	541	3,353	33	0	0	0	0
7/3	10	8.5	177	82	24	122	1,180	78	57	397	3,750	37	0	0	0	0
7/4 [b]	0	5.3	183	85	0	72	1,252	83	0	377	4,127	41	0	0	0	0

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Table 2.–Page 2 of 3.

Date	Chinook No. caught	Chinook Daily mean tidal CPUE	Chinook Cumulative mean tidal CPUE	Chinook Percent passage	Sockeye No. caught	Sockeye Daily mean tidal CPUE	Sockeye Cumulative mean tidal CPUE	Sockeye Percent passage	Chum No. caught	Chum Daily mean tidal CPUE	Chum Cumulative mean tidal CPUE	Chum Percent passage	Coho No. caught	Coho Daily mean tidal CPUE	Coho Cumulative mean tidal CPUE	Coho Percent passage
7/5 [a]	2	5.3	188	87	0	72	1,324	87	2	377	4,504	45	0	0	0	0
7/6 [a]	2	4.7	193	89	3	29	1,353	89	16	349	4,854	48	0	0	0	0
7/7	3	1.6	194	90	7	43	1,396	92	91	486	5,340	53	0	0	0	0
7/8	5	3.7	198	92	4	21	1,417	93	33	202	5,542	55	1	0	0	0
7/9 [a]	3	2.8	201	93	8	30	1,448	95	60	269	5,811	58	0	0	0	0
7/10	2	1.0	201	94	0	0	1,448	95	13	31	5,843	58	0	0	0	0
7/11 [a,c]	0	2.5	204	95	4	11	1,459	96	154	421	6,264	62	0	0	0	0
7/12	1	4.0	208	97	3	13	1,472	97	154	714	6,978	70	0	0	0	0
7/13	2	3.6	212	98	1	5	1,476	97	72	268	7,245	72	0	0	0	0
7/14	0	0.0	212	98	2	7	1,483	98	55	150	7,395	74	1	3	3	0
7/15	1	2.8	214	100	1	8	1,491	98	106	374	7,769	77	3	14	16	1
7/16	0	0.0	214	100	0	0	1,491	98	82	261	8,031	80	0	0	16	1
7/17	0	0.0	214	100	0	0	1,491	98	101	265	8,296	83	2	5	22	1
7/18	0	0.0	214	100	2	8	1,499	99	83	342	8,637	86	1	4	26	1
7/19 [a]	0	0.0	214	100	0	6	1,505	99	17	247	8,884	89	1	13	39	1
7/20 [a]	0	0.0	214	100	1	3	1,508	99	29	184	9,069	90	1	11	50	2
7/21 [a]	0	0.0	214	100	0	2	1,510	100	16	131	9,200	92	2	10	60	2
7/22 [c]	0	0.0	214	100	0	0	1,510	100	25	103	9,303	93	1	8	68	2
7/23	0	0.0	214	100	0	0	1,510	100	54	91	9,394	94	15	27	95	3
7/24	0	0.0	214	100	0	0	1,510	100	14	24	9,418	94	6	11	106	3
7/25 [b]	0	0.0	214	100	0	0	1,510	100	0	66	9,484	95	0	36	142	4
7/26	0	0.0	214	100	0	0	1,510	100	44	87	9,572	95	28	58	200	6
7/27 [a]	0	0.0	214	100	0	0	1,510	100	5	55	9,627	96	1	40	240	7
7/28	0	0.0	214	100	0	0	1,510	100	13	24	9,651	96	31	56	296	9
7/29	0	0.0	214	100	0	0	1,510	100	30	65	9,715	97	36	82	378	12
7/30	0	0.0	214	100	0	0	1,510	100	24	43	9,759	97	33	59	437	14
7/31	0	0.0	214	100	0	0	1,510	100	38	76	9,835	98	74	141	578	18
8/1	0	0.0	214	100	0	0	1,510	100	12	29	9,864	98	89	223	802	25
8/2	0	0.0	214	100	0	0	1,510	100	6	33	9,896	99	85	324	1,126	35

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Table 2.–Page 3 of 3.

	Chinook				Sockeye				Chum				Coho			
Date	No. caught	Daily mean tidal CPUE	Cumulative mean tidal CPUE	Percent passage	No. caught	Daily mean tidal CPUE	Cumulative mean tidal CPUE	Percent passage	No. caught	Daily mean tidal CPUE	Cumulative mean tidal CPUE	Percent passage	No. caught	Daily mean tidal CPUE	Cumulative mean tidal CPUE	Percent passage
8/3	0	0.0	214	100	0	0	1,510	100	3	11	9,908	99	32	126	1,252	39
8/4	0	0.0	214	100	1	4	1,514	100	3	14	9,922	99	60	202	1,454	45
8/5	0	0.0	214	100	0	0	1,514	100	6	17	9,939	99	118	295	1,749	54
8/6	0	0.0	214	100	0	0	1,514	100	6	15	9,954	99	79	183	1,932	60
8/7	0	0.0	214	100	0	0	1,514	100	8	28	9,982	100	98	244	2,177	67
8/8 [a]	0	0.0	214	100	0	1	1,515	100	0	13	9,994	100	0	99	2,276	70
8/9	0	0.0	214	100	1	2	1,517	100	7	18	10,012	100	88	213	2,489	77
8/10	0	0.0	214	100	0	0	1,517	100	1	3	10,014	100	76	202	2,691	83
8/11	0	0.0	214	100	0	0	1,517	100	0	0	10,014	100	27	67	2,758	85
8/12 [a]	0	0.0	214	100	0	0	1,517	100	0	1	10,015	100	5	74	2,832	88
8/13	1	0.0	214	100	0	0	1,517	100	3	5	10,020	100	82	147	2,979	92
8/14	0	0.0	214	100	0	0	1,517	100	2	4	10,025	100	46	90	3,069	95
8/15	0	0.0	214	100	0	0	1,517	100	0	0	10,025	100	21	40	3,109	96
8/16	0	0.0	214	100	0	0	1,517	100	1	2	10,027	100	23	44	3,153	97
8/17	0	0.0	214	100	0	0	1,517	100	0	0	10,027	100	7	15	3,168	98
8/18	0	0.0	214	100	0	0	1,517	100	1	2	10,028	100	25	43	3,212	99
8/19	0	0.0	214	100	0	0	1,517	100	0	0	10,028	100	5	11	3,223	100
8/20	0	0.0	214	100	0	0	1,517	100	0	0	10,028	100	4	11	3,234	100
Totals	337				380				2,289				1,207			

Note: The boxes represent the central 50% of the run and the shaded cells represent the median passage date of the run.

[a] Estimated CPUE index used to represent data missing from 1 tide not fished on that date.

[b] Estimated CPUE index used to represent data missing from 2 tides not fished on that date.

[c] The use of the 8.0 inch mesh gillnet was discontinued after July 10.

Table 3.–Chinook salmon age and sex composition and mean length (mm), Bethel test fishery, 2011.

Sample dates (Stratum dates)	Sample size		Brood year (Age) 2007 1.2 *N*	%	2006 1.3 *N*	%	2005 1.4 *N*	%	2004 1.5 *N*	%	Total *N*	%
6/03–7/9	114	Male	118	69.3	31	18.4	1	0.9	0	0.0	151	88.6
(5.375 mesh)		Female	0	0.0	7	4.4	12	7.0	0	0.0	19	11.4
		Subtotal	118	69.3	39	22.8	13	7.9	0	0.0	170	100.0
		Male mean length	560		664		795		–			
		SE	4.93		13.13		–		–			
		Range	469–666		515–736		795–795		–			
		n	77		21		1		–			
		Female mean length	–		775		828		–			
		SE	–		38.67		18.09		–			
		Range	–		655–882		750–892		–			
		n	–		5		8		–			
6/01–7/10	102	Male	13	7.8	52	31.4	21	12.7	2	1.0	88	52.9
(8.0 mesh)		Female	0	0.0	10	5.9	64	38.2	5	2.9	79	47.1
		Subtotal	13	7.8	62	37.3	85	51.0	7	3.9	167	100.0
		Male mean length	581		730		789		816			
		SE	18.07		10.40		20.15		–			
		Range	512–647		646–846		673–891		816–816			
		n	8		32		13		1			
		Female mean length	–		825		854		869			
		SE	–		15.33		8.77		4.00			
		Range	–		761–862		756–955		865–877			
		n	–		6		39		3			
	216	Male	87	40.3	53	24.5	14	6.5	1	0.5	155	71.8
		Female	0	0.0	11	5.1	47	21.8	3	1.4	61	28.2
Total		Total	87	40.3	64	29.6	61	28.2	4	1.9	216	100.0
		Male mean length	562		704		789		816			
All data		SE	4.79		9.25		18.66		–			
Combined		Range	469–666		515–846		673–891		816–816			
No stratification		*n*	85		53		14		1			
		Female mean length	–		802		850		869			
		SE	–		19.93		7.96		4.00			
		Range	–		655–882		750–955		865–877			
		n	–		11		47		3			
	216	Male	131	38.8	84	24.8	23	6.8	2	0.5	239	70.9
Weighted		Female	0	0.0	17	5.1	76	22.5	5	1.5	98	29.1
total		Total	131	38.8	101	30.0	99	29.2	7	1.9	337	100.0
		Male mean length	570		697		792		816			
		SE	9.29		8.39		20.15		–			
		Range	469–666		515–846		673–891		816–816			
		n	85		53		14		1			
		Female mean length	–		800		841		869			
		SE	–		20.93		10.11		4.00			
		Range	0–0		655–882		750–955		865–877			
		n	–		11		47		3			

Note: Data from AYKDBMS. Samples were collected using 5.375 inch and 8.0 inch mesh drift gillnets.

Table 4.–Climatological and stream observations, Kuskokwim River, Bethel test fishery, 2011

Date	Time observed	Sky	Precipitation code	Wind (mph)	Temperature °C		Water clarity
					Air	Water	
1 Jun	1955	3	0	S 15-20			0.4
2 Jun	0655	1	0	0	17	11	0.5
2 Jun							
3 Jun	0800	4	A	CLM	8	12	0.5
3 Jun	2040	4	0	SE 25	10	12	0.6
4 Jun							
4 Jun	2100	3	0	S20	8	11	0.7
5 Jun	1020	3	0	S15	9	12	0.5
5 Jun	2200	4	0	SE 10	10	11	0.5
6 Jun	1100	1	0	NE 5	15	12	0.6
6 Jun	2200	4	0	E 5	14	13	0.6
7 Jun	1140	3	0	S 10	10	11	0.5
7 Jun							
8 Jun	1230	4	A	NE 5	12	12	0.5
8 Jun	0010	4	0	NE 5	10	12	0.5
9 Jun	1330	4	0	CLM	16	12	0.4
9 Jun	0100	4	0	CLM	9	11	0.4
10 Jun	1400	3	0	S 10	15	12	0.4
11 Jun	0150	4	A	CLM	9	12	0.3
11 Jun	1500	4	0	SE 5-10	15	12	0.3
12 Jun	0315	3	0	CLM	9	12	0.3
12 Jun	1630	4	0	S 15	13	12	0.3
13 Jun	0400	4	0	S 10	8	11	0.3
13 Jun	1750	4	0	S 10	12	11	0.4
14 Jun	0430	4	0	S 7	7	11	0.3
14 Jun	1755	4	0	S 5	11	12	0.3
15 Jun	0600	2	0	CLM	7	11	0.5
15 Jun	1905	2	0	CLM	15	13	0.4
16 Jun	0800	1	0	CLM	11	12	0.6
16 Jun	2100	2	0	S 10-15	16	13	0.6
17 Jun	0830	2	0	S 5	10	12	0.5
17 Jun	2000	2	0	S 10	16	13	0.7
18 Jun	1100	3	0	CLM	17	13	0.8
18 Jun	2300	3	0	S 10	12	14	0.9
19 Jun	0955	2	0	S 5	15	13	0.7
19 Jun	2300	3	0	N 5	15	14	0.8
20 Jun	1200	2	0	N 15	14	13	0.8
20 Jun	2350	4	0	N 15	12	13	0.7
21 Jun	1300	4	0	S 5	12	14	0.8
21 Jun	2330	4	A	CLM	9	14	1.2
22 Jun	1230	4	A	S 5-10	10	14	1.2
22 Jun	0100	4	0	S 5-10	9	11	0.7
23 Jun	1310	4	0	S 5	15	14	1.1
23 Jun	0015	4	0	S 5	12	12	0.4
24 Jun	1345	4	A	CLM	15	13	1.1

-continued-

Table 4.–Page 2 of 4.

Date	Time observed	Sky	Precipitation code	Wind (mph)	Temperature °C		Water clarity
					Air	Water	
25 Jun	0125	4	A	S 5	12	12	0.5
25 Jun	1530	4	0	S 5	14	13	1.1
26 Jun	0230	2	0	CLM	13	11	0.5
26 Jun	1630	4	0	S 10-15	13	12	0.5
27 Jun	0345	4	0	CLM	11	13	0.4
27 Jun	1630	4	0	S 15-20	13	13	0.4
28 Jun	0445	4	0	S 10-15	11	12	0.3
28 Jun	1800	4	A	S 5	9	12	0.5
29 Jun	0600	4	A	S 5	7	12	0.5
29 Jun	1800	4	0	S 5	12	13	0.4
30 Jun	0700	4	0	CLM	10	12	0.5
30 Jun							
1 Jul	0730	4	0	CLM	7	12	0.4
1 Jul	2000	4	0	CLM	10	12	0.6
2 Jul	0800	4	0	N 5	9	12	0.3
2 Jul	2000	1	0	CLM	11	13	0.5
3 Jul	0830	3	0	N 5	10	13	0.5
3 Jul	2030	4	0	N 5	10	13	0.5
4 Jul							
4 Jul							
5 Jul	1000	4	0	S 20+	10	12	0.5
5 Jul							
6 Jul							
6 Jul	2300	4	A	S 5	11	12	0.5
7 Jul	1030	4	0	E 5	10	12	0.4
7 Jul	2330	4	A	S 5	10	13	0.6
8 Jul	1300	4	0	S 5-10	13	12	0.4
8 Jul	0230	4	A	CLM			
9 Jul							
9 Jul	0200	4	0	CLM	13	12	
10 Jul	1500	4	0	CLM	13	13	0.6
11 Jul	0330	4	A	N 5	11	13	0.4
11 Jul							
12 Jul	0800	4	0	S 5	7	12	0.4
12 Jul							
13 Jul	0900	4	0	S 10	7	12	0.5
13 Jul	1800	4	0	S 10-15	11	12	0.3
14 Jul	0600	4	A	S 10	7	11	0.4
14 Jul	1900	4	0	S 5	10	11	0.4
15 Jul	0730	4	A	S 10	7	11	0.3
15 Jul	1930	4	0	S 5	10	11	0.5
16 Jul	0800	3	0	CLM	8	11	0.3
16 Jul	2100	2	0	CLM	14	12	0.5
17 Jul	0830	4	A	CLM	9	12	0.4
17 Jul	2000	3	0	SW 5-10	14	12	0.5

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Table 4.–Page 3 of 4.

Date	Time observed	Sky	Precipitation code	Wind (mph)	Temperature °C		Water clarity
					Air	Water	
18 Jul	1000	4	0	S 5	8	12	0.4
17 Jul	2000	3	0	SW 5-10	14	12	0.5
18 Jul	1000	4	0	S 5	8	12	0.4
18 Jul	2100	4	0	S 5	9	12	0.4
19 Jul	1000	4	0	NE 5	9	13	0.4
19 Jul							
20 Jul							
20 Jul	22:00	4	0	S 5-10	13	13	0.5
21 Jul	1100	4	0	S 5	11	12	0.5
21 Jul							
22 Jul							
22 Jul	1130	4	0	S 5	11	13	0.5
23 Jul	1330	4	A	S 15-20	10	13	0.5
23 Jul	0000	4	0	S 5	9	13	0.3
24 Jul							
25 Jul							
25 Jul							
26 Jul	0300	4	0	CLM	12	14	0.3
26 Jul	1600	4	A	CLM	16	14	0.3
27 Jul							
27 Jul	1600	2	0	CLM	16	15	0.4
28 Jul	0500	4	0	S 5	15	13	0.4
28 Jul	1800	3	0	N 5-10	18	15	0.4
29 Jul	0630	4	0	S 5-10	9	15	0.3
29 Jul	0630	4	0	S 10-15	14	15	0.4
30 Jul	0700	4	0	S 10	9	14	0.4
30 Jul	1900	4	A	S 5	12	14	0.5
31 Jul	0730	4	A	S 5	10		0.3
31 Jul	2000	4	A	S 5	10	13	0.4
1 Aug	0830	4	A	CLM	9	13	0.4
1 Aug	2100	4	A	N 5	13	13	0.5
2 Aug	0900	1	0	N 15	11	13	0.4
2 Aug	2200	1	0	N 15	13	13	0.4
3 Aug	1000	1	0	S 5	12	13	0.4
3 Aug							
4 Aug	1130	4	0	S 5-10	10	12	0.3
4 Aug	2330	4	0	S 5	12	12	
5 Aug	0000	4	0	S 10	9	12	0.3
5 Aug	0030	4	0	S 5-10	12	12	0.3
6 Aug	1300	4	1	S 10	9	12	0.3
6 Aug							
7 Aug	1330	4	0	S 5-10	9	11	0.3
7 Aug	0300	3	0	CLM			
8 Aug							

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Table 4.–Page 4 of 4.

Date	Time observed	Sky	Precipitation code	Wind (mph)	Temperature °C		Water clarity
					Air	Water	
7 Aug	1330	4	0	S 5-10	9	11	0.3
7 Aug	0300	3	0	CLM			
8 Aug							
9 Aug	0300	4	0	CLM			
9 Aug	1830	4	0	CLM	13	11	0.2
10 Aug							
10 Aug	1800	4	0	S 5	11	12	0.2.
11 Aug	0600	4	0	S 5	8	11	0.2
11 Aug	1800	4	A	S 5	12	11	0.2
12 Aug							
12 Aug	1800	4	0	S 5	11	10	0.2
13 Aug	0630	4	0	S 5	10	10	0.2
13 Aug	1845	4	0	CLM	11	10	0.2
14 Aug	0730	4	0	CLM	11	10	0.2
14 Aug	1930	3	0	CLM			
15 Aug	0930	4	0	CLM	9	10	0.2
15 Aug	2100	1	0	S 5	15	11	0.2
16 Aug	0900	4	0	CLM	9	10	0.2
16 Aug	2300	4	0	CLM	12	10	0.2
17 Aug	1000	4	0	CLM	12	10	0.2
17 Aug	2200	3	0	CLM	15	12	0.3
18 Aug	1000	3	0	CLM	13	11	0.3
18 Aug	2230	4	0	E 10	13	11	0.2
19 Aug	1100	3	0	NE 5-10	12	11	0.2
19 Aug	2245	3	0	CLM	14	11	0.2
20 Aug	1200	3	0	N 5-10	14	12	0.3
20 Aug	2330	1	0	NW 5-10	11	11	0.2

Note: Blank cells indicate no observation was made nor measurement taken.

Codes:

Sky

0 = No Observation
1 = Clear or mostly clear (< 1/10 covered)
2 = Cloud cover not more than 1/2 of sky
3 = Cloud cover more than 1/2 of sky
4 = Complete overcast
5 = Thick fog

Precipitation

A = Intermittent rain
B = Continuous rain
C = Snow
D = Snow and rain
E = Hail
F = Thunderstorms w/ or w/out rain

Table 5.–Summary of inseason subsistence catch monitoring project in the Bethel area, Kuskokwim River, 2011.

		Number of families			Chinook salmon[a]			Chum salmon[a]			Sockeye salmon[a]		
	Week			Not	Percent								
Year	ending	Interviewed	Fishing	fishing	Very good	Normal	Poor	Very ood	Normal	Poor	Very good	Normal	Poor
2011	Jun 06	36	11	25	36	36	0	ND	ND	ND	9	9	0
	Jun 12	69	41	28	7	34	49	10	46	10	10	46	7
	Jun 19	57	56	1	25	38	37	14	52	20	14	57	18
	Jun 27	49	44	5	14	22	64	21	36	34	23	59	9
	Jul 03	45	41	4	66	15	19	78	10	10	76	17	5
	Jul 10	71	15	56	13	0	67	80	7	0	33	20	33

Note: Only reports from the month of June and the first 2 weeks of July were used for comparison between years. ND indicates that no data collected. Beginning in 2010 data are represented as percent response per category.

[a] Responses from the question: "Compared with this time in a 'Normal' year, how were catch rates for salmon this week?"

Figure 1.–Map of Kuskokwim Management Area including commercial fishing Districts W-1, W-2, W-4, and W-5.

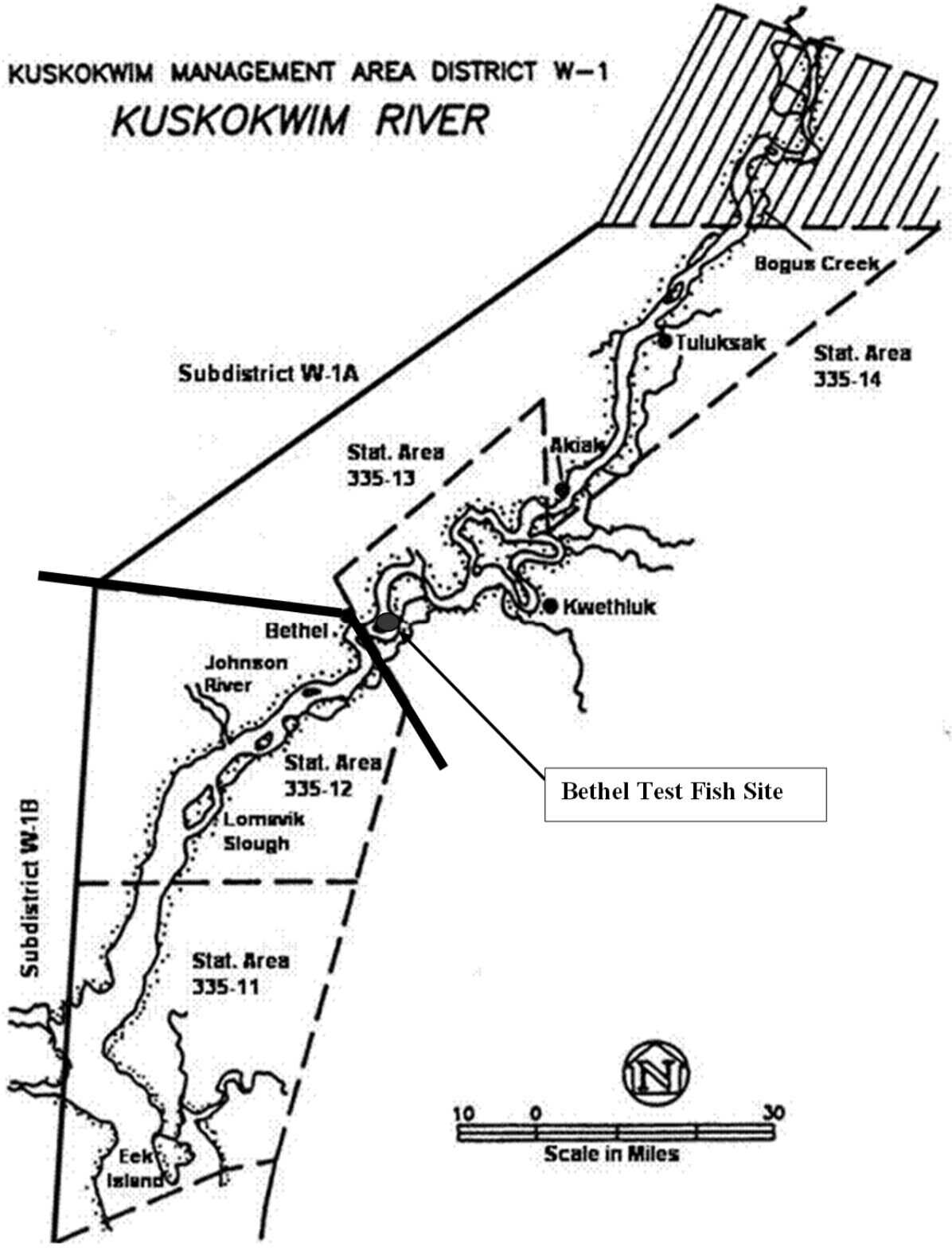

Figure 2.–District 1 (also known as District W-1), the Kuskokwim commercial salmon management area.

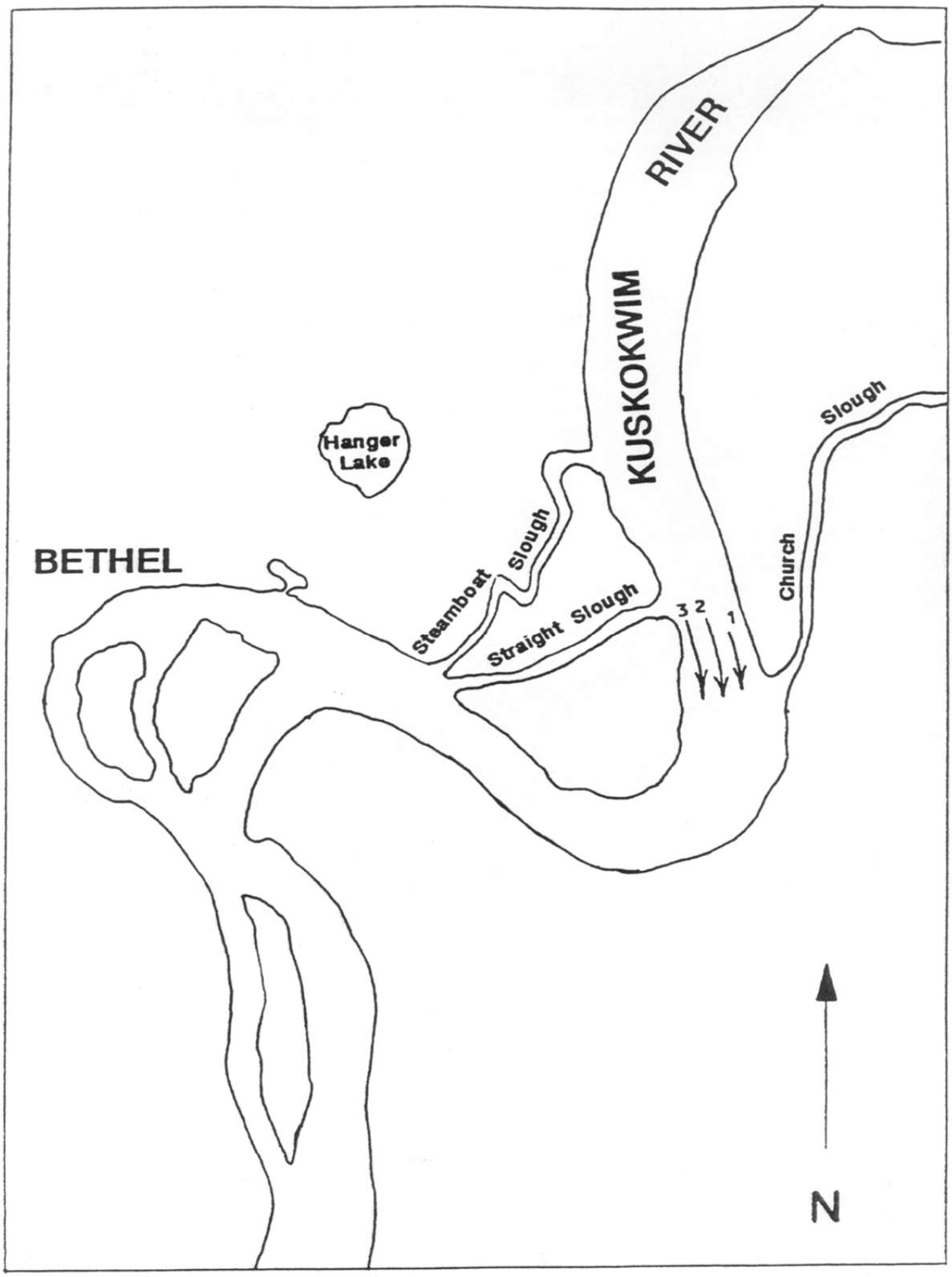

Figure 3.–Bethel test fishery drift Stations 1, 2, and 3.

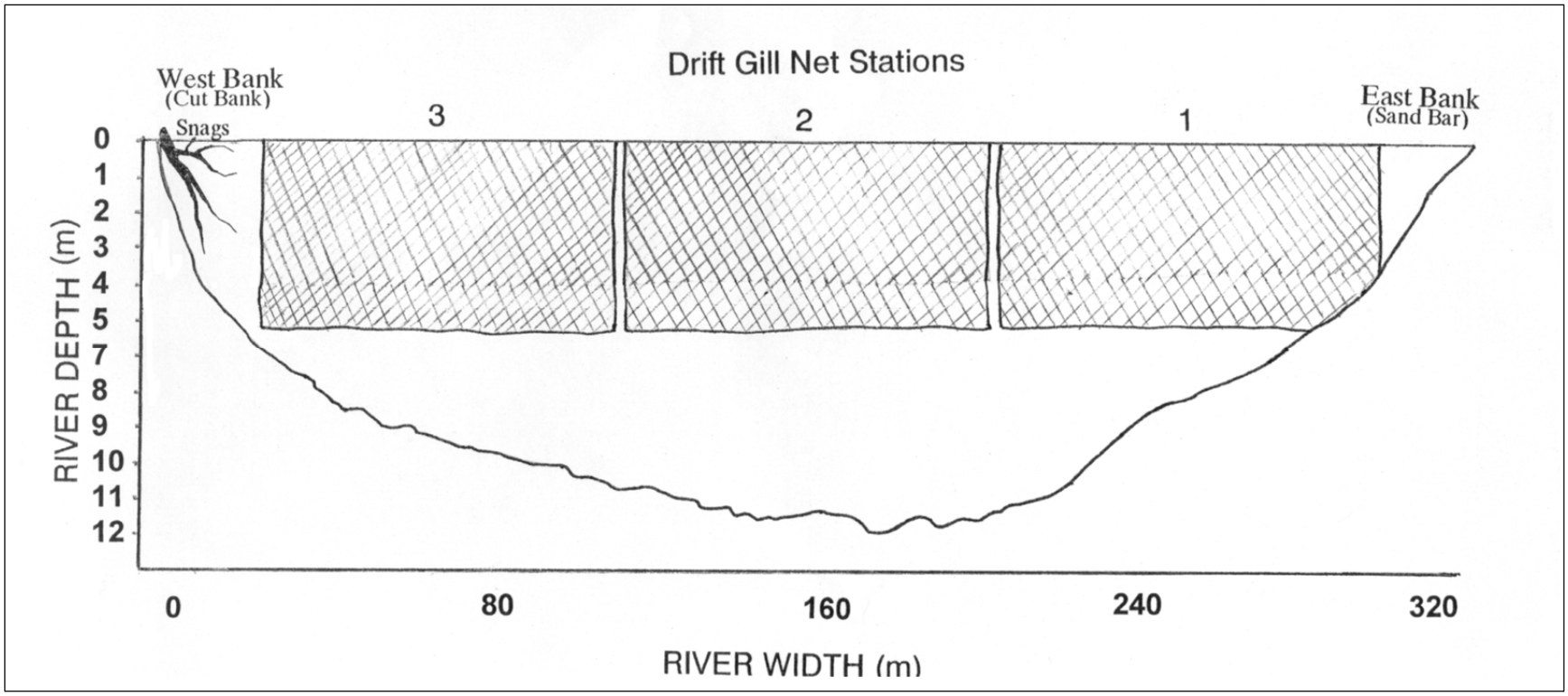

Figure 4.–Typical profile of the Kuskokwim River 4 miles upstream of Bethel, illustrating the area covered by gillnets used in the Bethel test fishery.

Note: The profile depicted was measured in 1995.

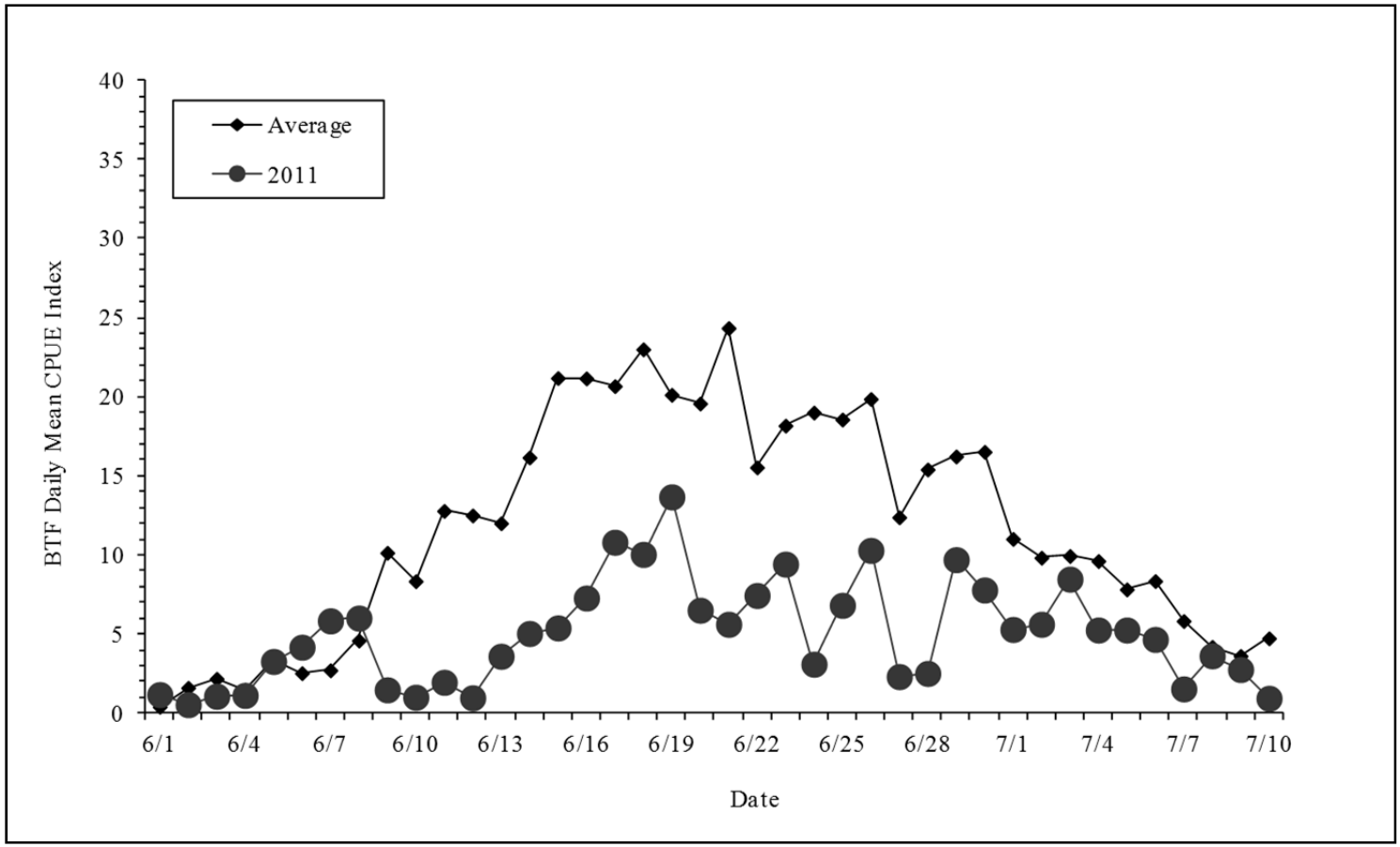

Figure 5.–Chinook salmon daily mean tidal catch per unit effort (CPUE) indices for mean 2001–2010, and 2011, Bethel test fishery.

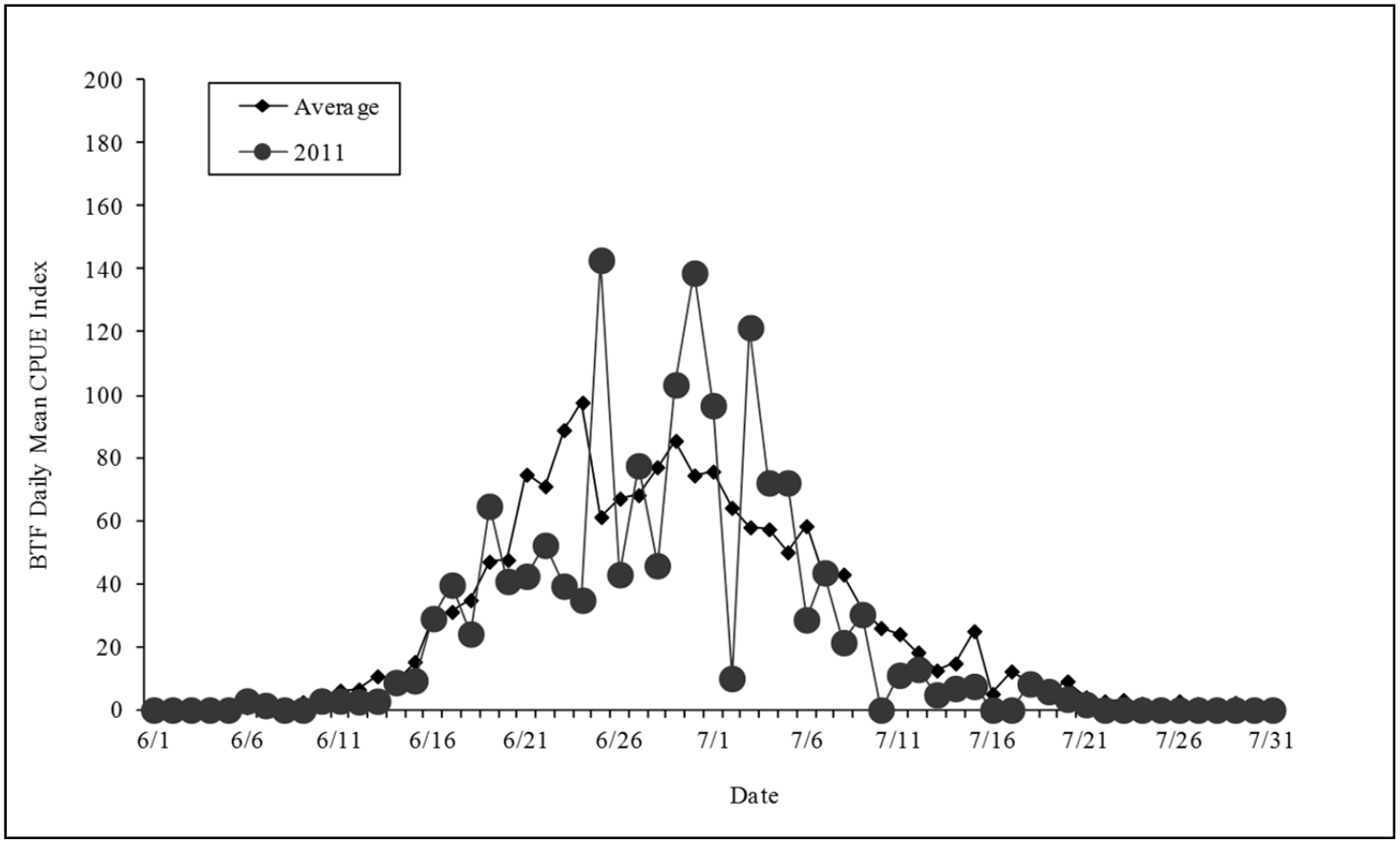

Figure 6.–Sockeye salmon daily mean tidal catch per unit effort (CPUE) indices for mean 2001–2010, and 2011, Bethel test fishery.

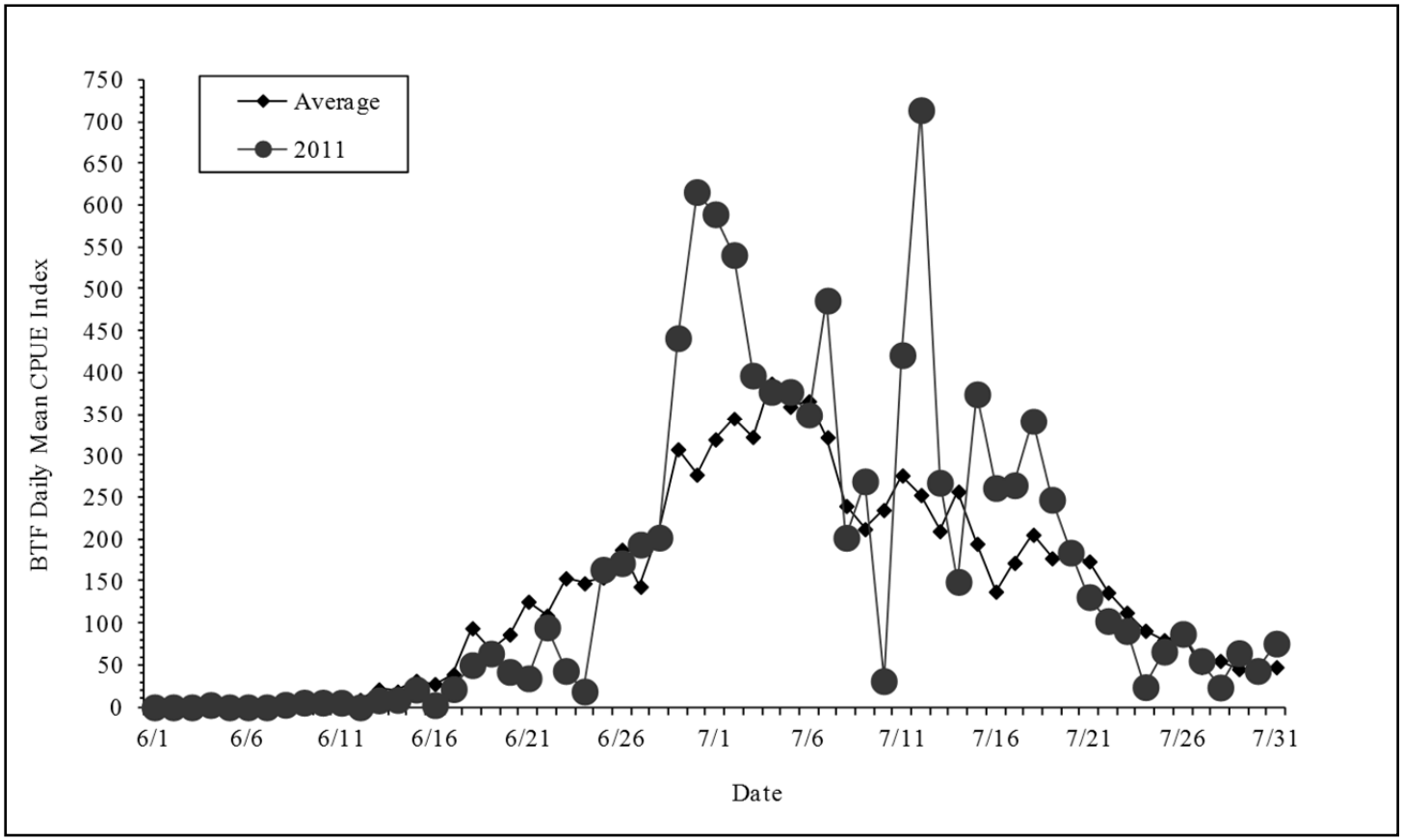

Figure 7.–Chum salmon daily mean tidal catch per unit effort (CPUE) indices for mean 2001–2010, and 2011, Bethel test fishery.

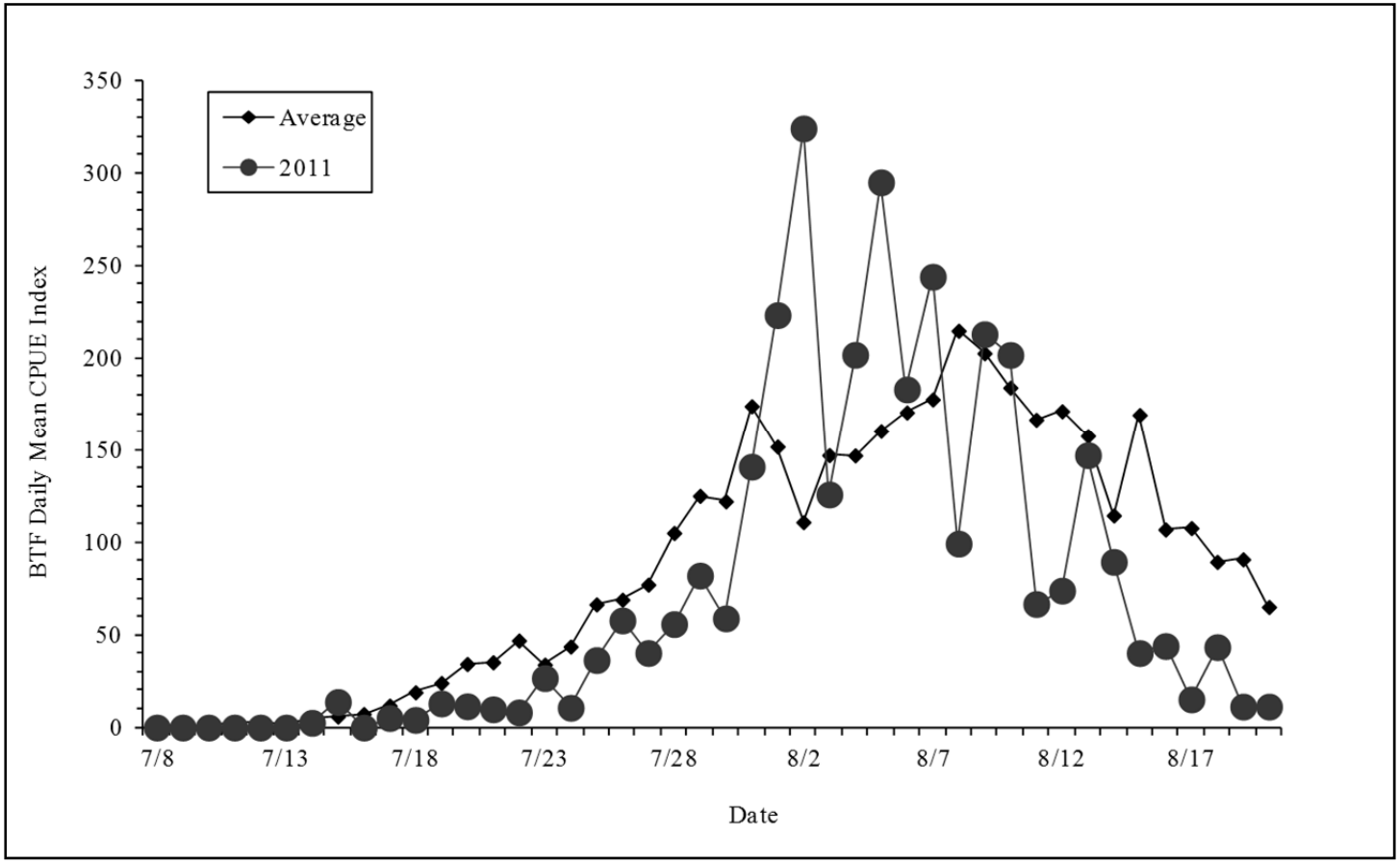

Figure 8.–Coho salmon daily mean tidal catch per unit effort (CPUE) indices for mean 2001–2010, and 2011, Bethel test fishery.

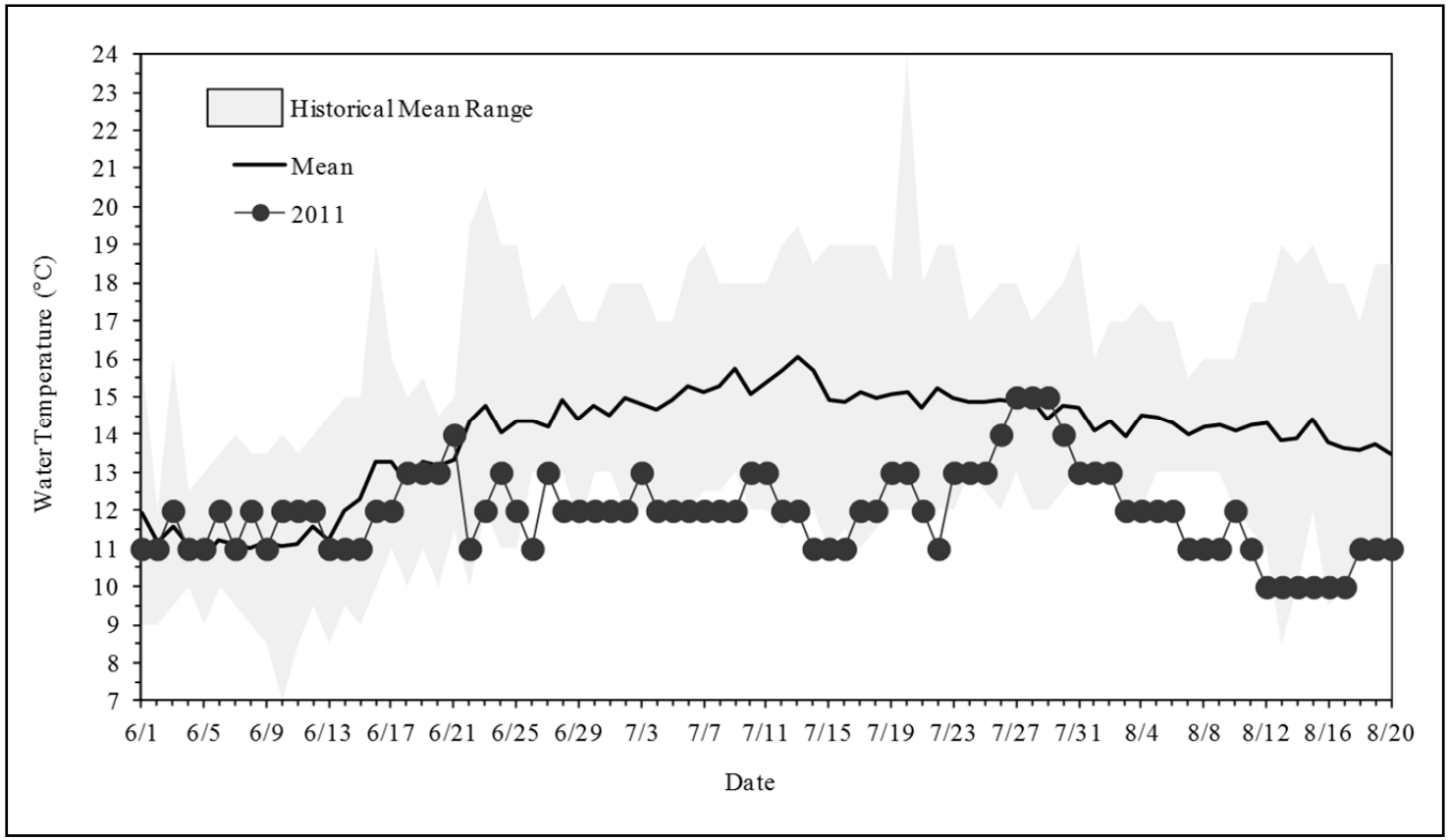

Figure 9.–Historical daily surface water temperature of the Kuskokwim River at the Bethel test fish site, 2001–2011.

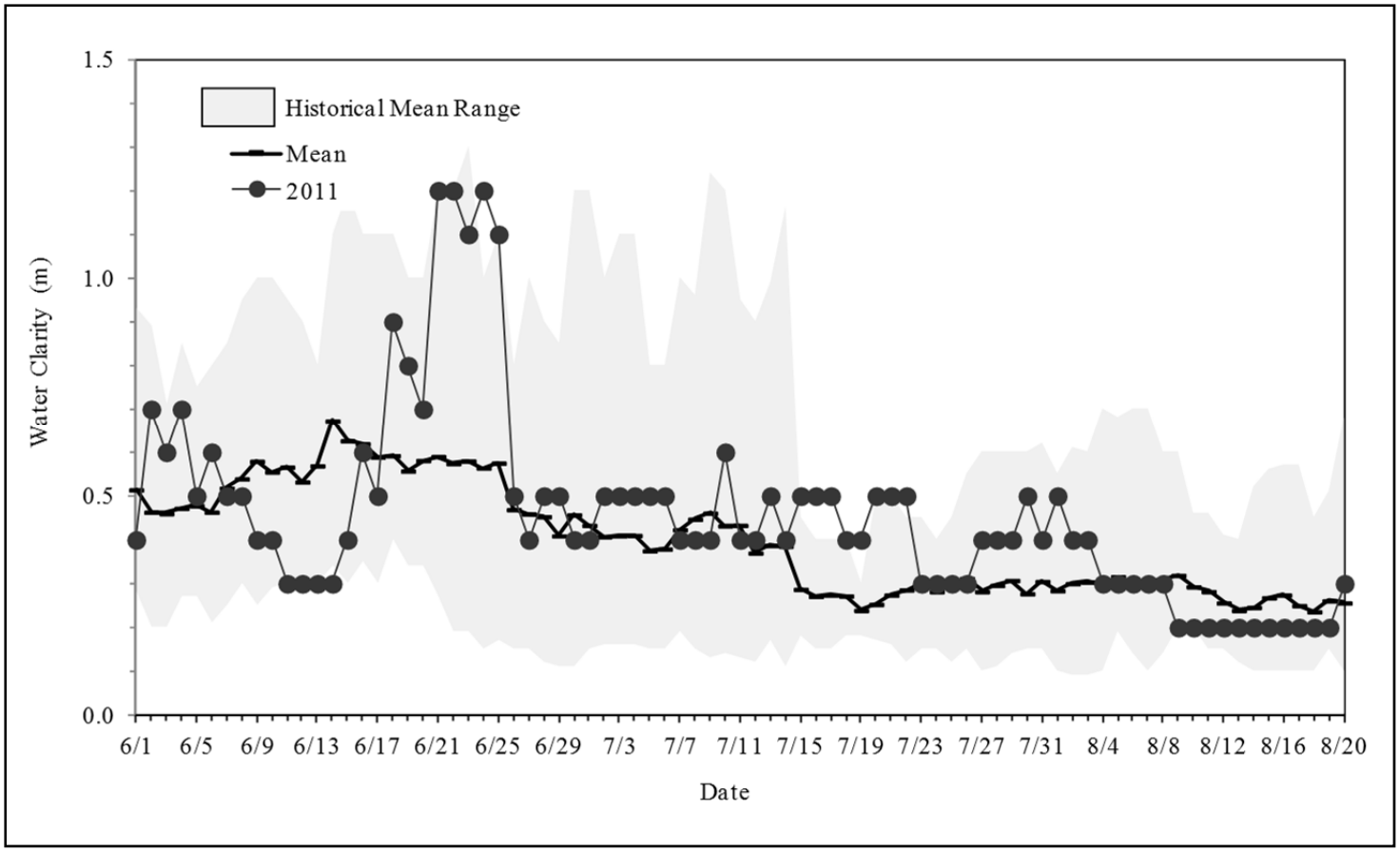

Figure 10.–Historical daily water clarity measurements of the Kuskokwim River at the Bethel test fish site, 2001–2011.

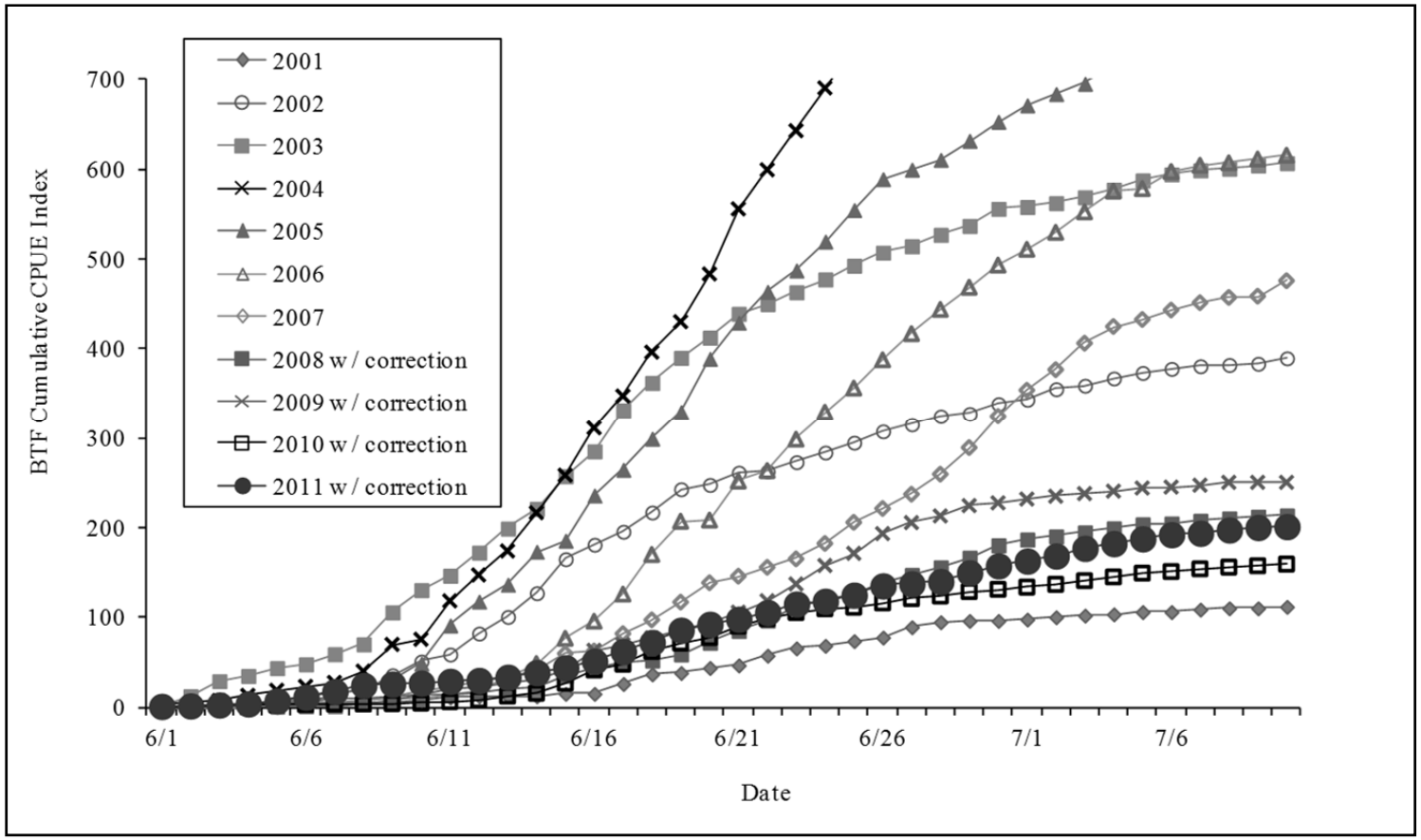

Figure 11.–Chinook salmon cumulative mean tidal catch per unit effort (CPUE) indices for years 2001–2011, Bethel test fishery.

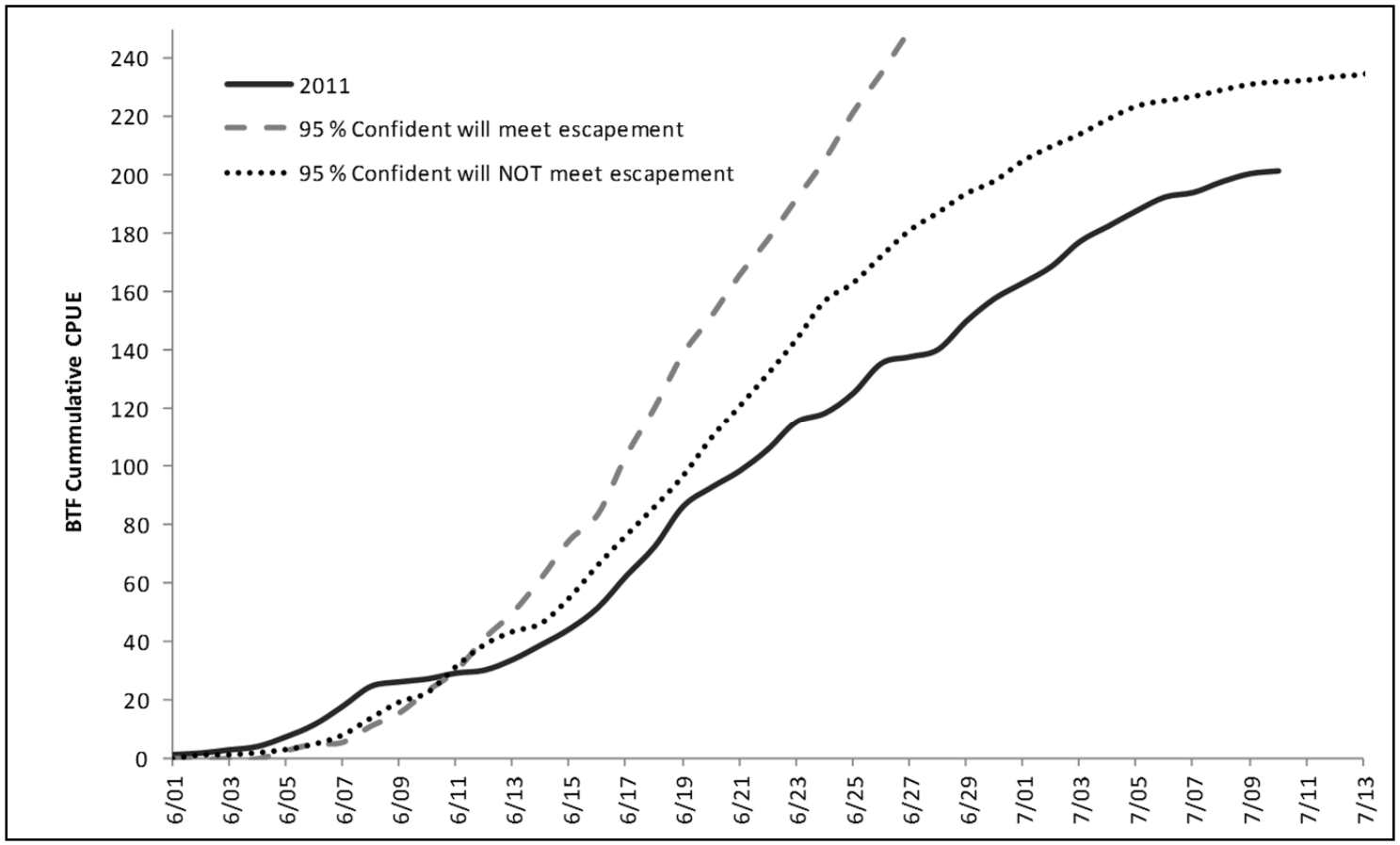

Figure 12.–Chinook salmon run assessment 2011, Bethel test fishery.

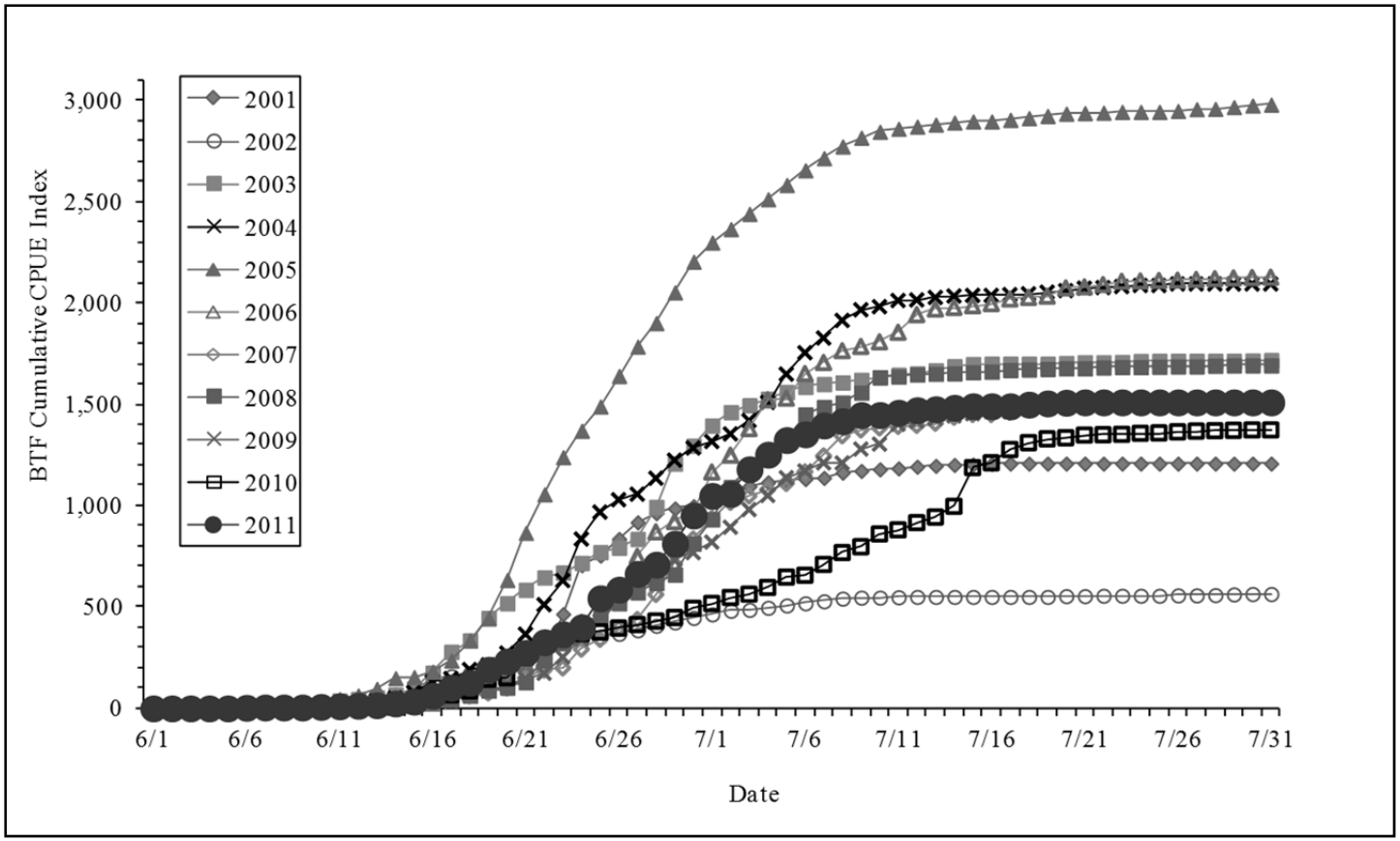

Figure 13.–Sockeye salmon cumulative mean tidal catch per unit effort (CPUE) indices for years 2001–2011, Bethel test fishery.

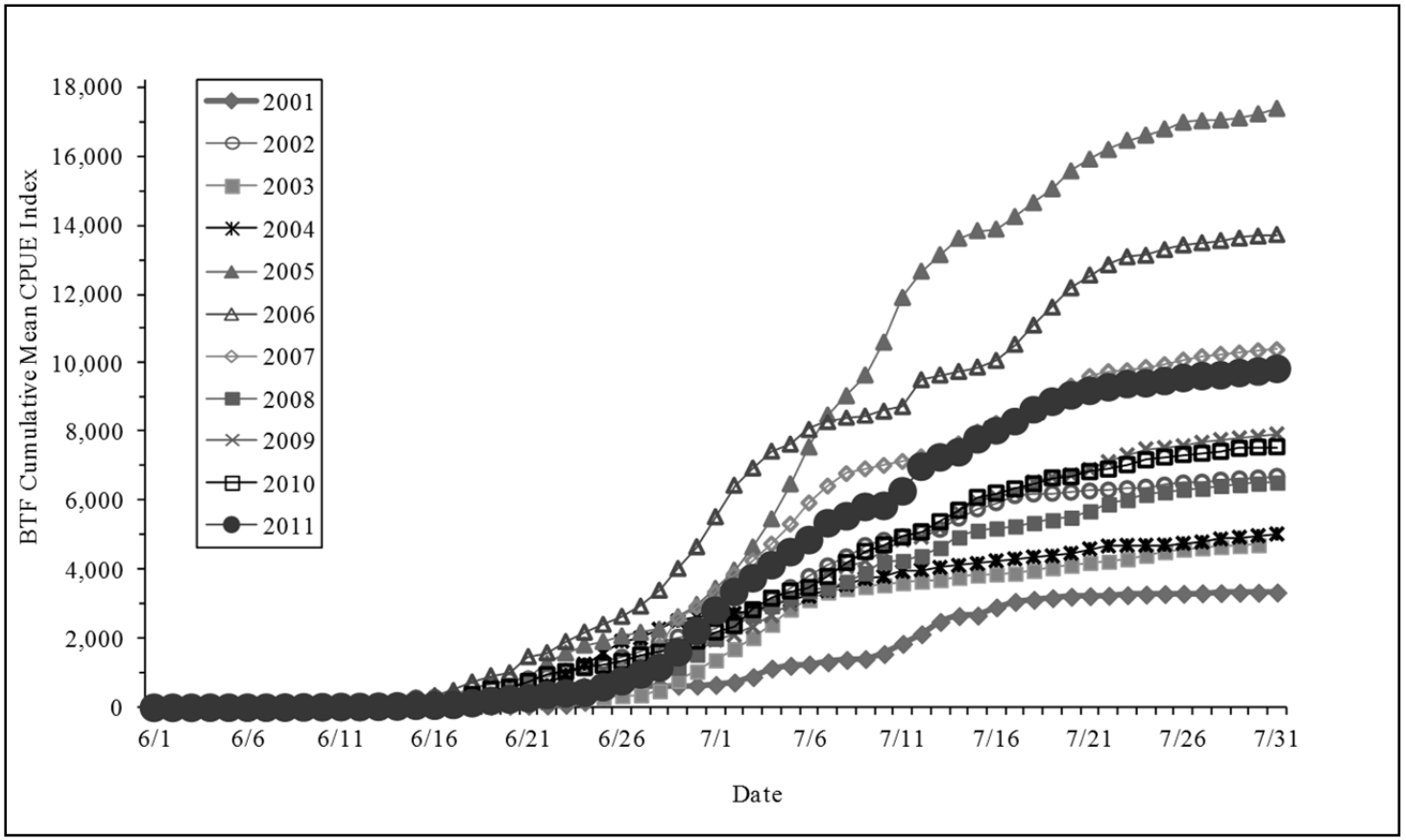

Figure 14.–Chum salmon cumulative mean tidal catch per unit effort (CPUE) indices for years 2001–2011, Bethel test fishery.

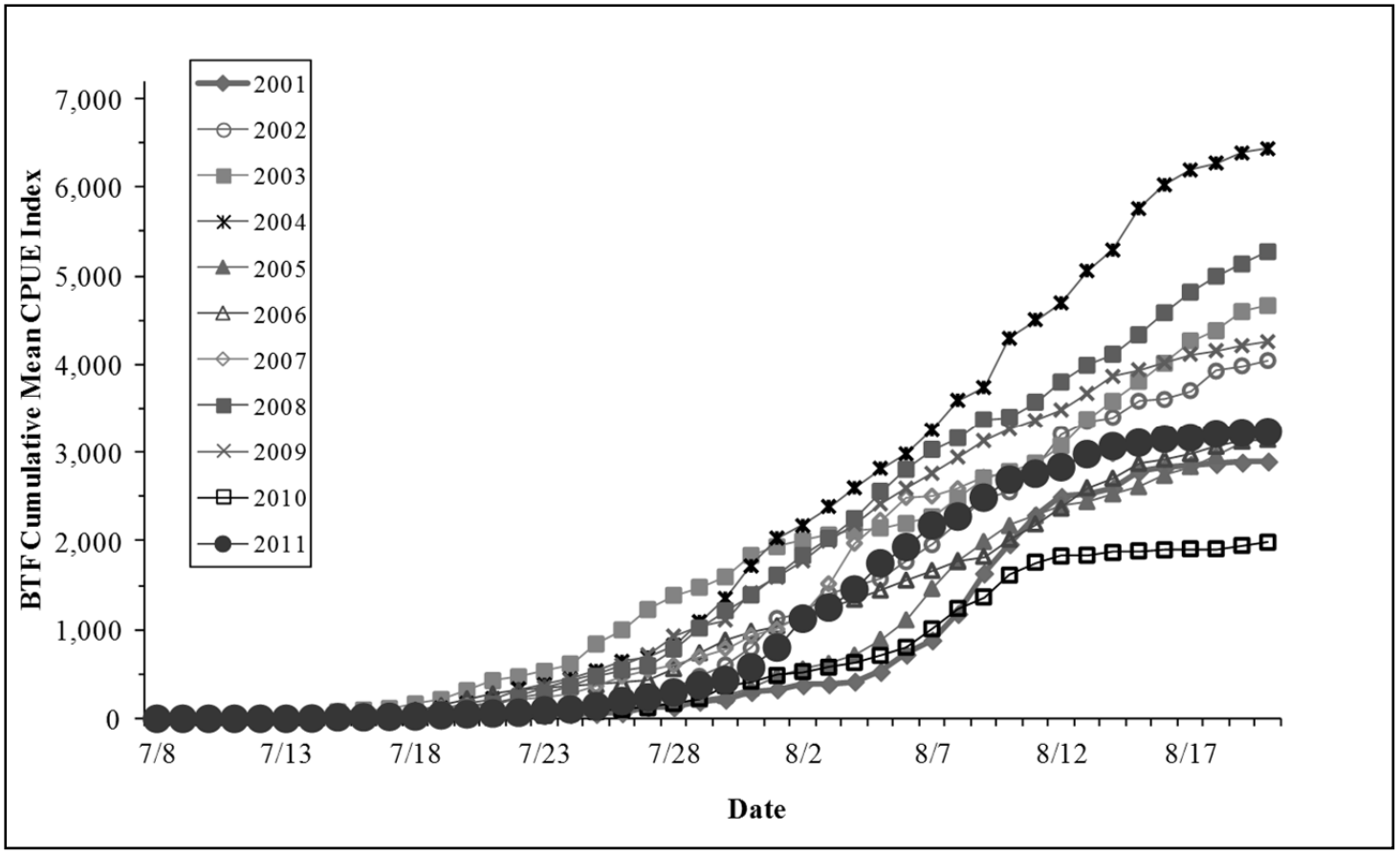

Figure 15.–Coho salmon cumulative mean tidal catch per unit effort (CPUE) indices for years 2001–2011, Bethel test fishery.

APPENDIX A: BETHEL TEST FISHERY DRIFT SCHEDUALE

Appendix A1.–Drift schedule used to determine the sequence of mesh sizes to be fished during each title drift series of the Bethel test fishery, 2011.

(A)

Schedule number	Station:	Mesh size (cm) and (Sequence) 1	2	3
1		20.3 (1)		20.3 (2)
			13.6 (3)	13.6 (4)
2		20.3 (1)	20.3 (2)	
		13.6 (4)		13.6 (3)
3			20.3 (1)	20.3 (2)
		13.6 (3)	13.6 (4)	
4		20.3 (1)	20.3 (2)	
			13.6 (4)	13.6 (3)
5			20.3 (1)	20.3 (2)
		13.6 (3)		13.6 (4)
6		20.3 (1)		20.3 (2)
		13.6 (4)	13.6 (3)	

(B)

Schedule number	Station:	Mesh size (cm) and (Sequence) 1	2	3
1		13.6 (1)	13.6 (2)	13.6 (3)
2		13.6 (3)	13.6 (1)	13.6 (2)
3		13.6 (2)	13.6 (3)	13.6 (1)
4		13.6 (1)	13.6 (3)	13.6 (2)
5		13.6 (2)	13.6 (1)	13.6 (3)
6		13.6 (3)	13.6 (2)	13.6 (1)

APPENDIX B: HISTORICAL CHINOOK SALMON DATA

Appendix B1.–Historical daily mean tidal catch per unit effort for Chinook salmon catches in the Bethel test fishery, 2001–2011.

Date	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average 2001-2010
6/1	0	0	1	3	0	0	0	0	0	0	1	0
6/2	0	1	11	2	0	0	0	1	0	1	1	2
6/3	0	0	17	3	1	0	0	0	1	1	1	2
6/4	0	0	6	6	0	0	1	0	1	1	1	1
6/5	4	4	9	6	4	3	1	0	2	0	3	3
6/6	1	7	4	4	1	4	0	1	2	1	4	3
6/7	0	3	11	4	4	0	2	0	3	1	6	3
6/8	0	3	11	13	11	1	3	2	2	0	6	5
6/9	0	18	36	30	7	1	4	4	2	1	2	10
6/10	3	15	25	6	19	0	7	6	3	1	1	8
6/11	3	8	16	43	42	4	4	2	5	2	2	13
6/12	1	23	26	29	27	4	7	2	4	2	1	13
6/13	0	19	27	27	19	15	3	4	3	4	4	12
6/14	0	26	22	43	37	15	10	3	4	3	5	16
6/15	3	38	36	42	12	28	17	12	12	11	5	21
6/16	0	16	28	53	50	19	3	7	21	15	7	21
6/17	11	15	47	36	29	30	19	7	7	6	11	21
6/18	11	21	31	49	35	44	15	3	7	14	10	23
6/19	1	26	28	34	31	37	20	7	9	9	14	20
6/20	6	5	22	53	59	1	22	13	9	6	7	20
6/21	3	14	27	72	40	44	7	13	11	13	6	24
6/22	11	1	11	44	34	12	10	12	13	8	7	16
6/23	8	10	13	44	24	35	9	13	19	7	9	18
6/24	3	11	14	48	32	31	17	9	21	4	3	19
6/25	5	11	15	47	35	27	24	6	14	2	7	19
6/26	4	13	14	47	34	31	15	13	22	5	10	20
6/27	11	8	7	16	11	29	16	9	12	5	2	12
6/28	6	10	13	47	11	27	22	9	7	3	3	15
6/29	1	3	10	46	21	25	30	11	11	5	10	16
6/30	0	11	19	35	21	25	36	14	3	3	8	17
7/1	1	5	2	24	18	18	29	6	4	2	5	11
7/2	3	12	4	16	13	19	23	4	3	3	6	10
7/3	2	4	7	12	11	23	29	4	3	4	8	10
7/4	1	8	8	6	19	23	19	4	3	4	5	10
7/5	3	6	10	8	29	3	8	4	3	4	5	8
7/6	0	5	7	9	31	19	11	1	1	2	5	8
7/7	3	3	5	5	20	7	8	3	2	3	2	6
7/8	1	1	2	7	14	3	6	3	3	2	4	4
7/9	0	1	4	10	12	4	1	2	0	2	3	4
7/10	2	6	3	3	10	4	17	1	0	2	1	5

Note: Date with no data indicates day when the project was not operational.

Appendix B2.–Historical cumulative mean tidal catch per unit effort for Chinook salmon catches in the Bethel test fishery, 2001–2011.

Date	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average 2001-2010
6/1	0	0	1	3	0	0	0	0	0	0	1	0
6/2	0	1	13	5	0	0	0	1	0	1	2	2
6/3	0	1	29	7	1	0	0	1	1	1	3	4
6/4	0	1	35	13	1	0	1	1	2	2	4	6
6/5	4	6	44	19	6	3	3	1	4	2	7	9
6/6	6	13	48	23	7	6	3	2	6	3	11	12
6/7	6	15	59	27	11	6	4	2	9	3	18	14
6/8	6	18	70	40	23	8	7	4	11	3	25	19
6/9	6	36	106	70	30	9	11	7	12	4	26	29
6/10	8	51	131	75	49	9	19	13	15	4	27	37
6/11	11	59	147	118	91	14	23	15	19	6	29	50
6/12	12	82	172	147	118	18	30	17	23	8	30	63
6/13	12	101	199	174	137	33	33	21	26	12	34	75
6/14	12	127	221	217	173	48	42	23	30	15	39	91
6/15	15	165	258	258	186	77	60	35	42	27	44	112
6/16	15	181	285	311	236	96	62	42	63	41	51	133
6/17	26	196	332	347	265	126	82	50	70	48	62	154
6/18	37	217	362	396	299	170	97	52	77	62	72	177
6/19	38	243	390	430	330	207	117	59	86	71	86	197
6/20	44	248	413	484	389	208	138	72	95	77	93	217
6/21	47	262	439	556	430	252	146	85	106	90	98	241
6/22	58	263	450	600	464	263	156	97	118	99	106	257
6/23	66	273	463	643	488	298	165	110	137	105	115	275
6/24	69	284	478	691	520	329	182	119	158	109	118	294
6/25	74	295	493	738	555	356	206	126	171	111	125	313
6/26	78	308	508	785	589	388	221	139	193	116	135	332
6/27	89	316	515	801	600	417	237	148	205	121	138	345
6/28	95	325	527	848	611	444	259	156	213	124	140	360
6/29	96	328	537	893	632	469	289	167	224	129	150	376
6/30	96	339	556	928	653	493	325	181	227	131	158	393
7/1	98	344	558	951	672	511	354	187	232	134	163	404
7/2	100	356	563	967	684	530	377	191	235	137	169	414
7/3	102	359	569	979	696	553	406	195	238	141	177	424
7/4	104	368	578	985	715	576	425	199	241	145	183	433
7/5	106	374	588	993	744	579	433	204	244	149	188	441
7/6	106	378	595	1,002	775	598	443	205	245	151	193	450
7/7	109	381	599	1,006	795	604	451	208	247	154	194	456
7/8	110	383	601	1,013	809	607	457	211	250	156	198	460
7/9	110	384	605	1,023	821	611	459	213	250	157	201	463
7/10	112	390	607	1,026	831	616	476	214	250	159	201	468
Totals	112	390	607	1,026	831	616	476	214	250	159	201	

Note: Date with no data indicates day when the project was not operational.

Appendix B3.–Historical percent passage of Chinook salmon at the Bethel test fish site, 2001–2011.

Date	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average 2001-2010
6/1	0	0	0	0	0	0	0	0	0	0	1	0
6/2	0	0	2	1	0	0	0	0	0	1	1	0
6/3	0	0	5	1	0	0	0	0	0	1	1	1
6/4	0	0	5	2	0	0	0	0	1	2	2	1
6/5	3	1	7	2	1	0	1	0	1	2	3	2
6/6	5	3	7	2	1	1	1	1	2	2	5	2
6/7	5	4	9	4	1	1	1	1	3	2	8	3
6/8	5	4	11	6	3	1	1	2	4	2	11	4
6/9	5	9	16	7	3	1	2	3	5	2	12	5
6/10	7	13	20	10	6	1	4	6	6	3	12	7
6/11	9	14	23	13	10	2	4	6	7	4	13	9
6/12	10	20	27	15	13	3	6	7	9	5	14	12
6/13	10	25	31	19	15	5	6	9	10	7	15	14
6/14	10	31	34	23	20	7	8	10	12	9	18	16
6/15	12	40	40	27	21	12	12	15	16	16	20	21
6/16	12	44	44	31	27	14	12	18	24	24	24	25
6/17	22	48	51	35	30	19	16	22	27	28	29	30
6/18	30	53	56	38	34	26	19	23	30	36	33	34
6/19	31	59	60	43	37	31	23	26	33	42	40	39
6/20	36	61	64	49	44	31	27	31	36	46	43	42
6/21	38	64	68	53	49	38	28	37	40	53	45	47
6/22	47	64	69	57	53	40	30	42	45	58	49	51
6/23	54	67	71	61	55	45	32	48	53	62	53	55
6/24	56	69	74	65	59	50	36	52	60	64	55	59
6/25	61	72	76	69	63	54	40	54	66	65	58	62
6/26	64	75	78	71	67	58	43	60	74	68	63	66
6/27	73	77	79	75	68	63	46	64	79	71	64	70
6/28	78	79	81	79	69	67	51	68	82	73	65	73
6/29	79	80	83	82	72	71	56	72	86	76	70	76
6/30	79	83	86	84	74	74	63	78	87	77	73	79
7/1	80	84	86	85	76	77	69	81	89	79	76	81
7/2	82	87	87	86	78	80	73	83	90	80	78	83
7/3	84	88	88	87	79	83	79	85	91	83	82	85
7/4	85	90	89	88	81	87	83	87	92	85	85	87
7/5	87	91	91	88	84	87	84	88	93	88	87	88
7/6	87	92	92	89	88	90	86	89	94	89	89	90
7/7	89	93	92	89	90	91	88	90	95	90	90	91
7/8	91	93	93	90	92	91	89	91	96	92	92	92
7/9	91	94	93	90	93	92	89	92	96	92	93	92
7/10	92	95	94	91	94	93	93	93	96	94	94	93
7/11	94	96	94	91	95	94	94	93	96	94	95	94
7/12	94	96	94	92	96	94	94	94	97	95	97	95
7/13	95	96	95	93	97	96	95	94	98	95	98	95
7/14	95	96	96	93	98	96	96	94	98	96	98	96
7/15	95	96	97	93	98	97	96	95	98	96	100	96
7/16	95	97	97	94	98	97	97	95	98	97	100	96
7/17	97	97	97	94	98	97	98	96	98	98	100	97
7/18	98	97	98	94	98	97	98	97	99	98	100	97
7/19	98	97	98	96	98	97	98	98	99	98	100	98
7/20	98	98	98	98	98	97	98	98	99	98	100	98

Note: The boxes represent the central 50% of the run and the shaded cells represent the median passage date of the run.

APPENDIX C: HISTORICAL SOCKEYE SALMON DATA

Appendix C1.–Historical daily mean tidal catch per unit effort for sockeye salmon catches in the Bethel test fishery, 2001–2011.

Date	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average 2001-2010
6/1	0	0	0	0	0	0	0	0	0	0	0	0
6/2	0	0	0	0	0	0	0	0	0	0	0	0
6/3	0	0	0	0	3	0	0	0	0	0	0	0
6/4	0	0	0	0	0	0	0	0	0	0	0	0
6/5	0	0	0	0	3	0	0	0	0	0	0	0
6/6	9	0	0	0	0	0	0	0	0	0	3	1
6/7	0	0	0	0	0	0	0	0	0	0	1	0
6/8	0	0	0	0	0	0	0	0	1	0	0	0
6/9	0	3	5	8	5	0	0	0	3	0	0	2
6/10	2	5	18	3	11	0	0	0	0	0	3	4
6/11	0	10	14	11	24	0	0	0	3	0	3	6
6/12	6	17	9	5	17	3	3	0	3	3	3	7
6/13	7	26	8	11	33	0	14	3	3	3	3	11
6/14	0	6	14	11	53	0	5	3	0	0	9	9
6/15	3	25	29	28	5	8	8	29	2	15	9	15
6/16	12	46	79	53	27	13	6	11	15	26	29	29
6/17	62	21	103	15	55	19	14	3	3	19	40	31
6/18	23	16	56	44	100	38	10	14	28	19	24	35
6/19	29	22	111	23	108	56	14	25	24	58	65	47
6/20	14	44	72	58	190	24	24	15	27	7	41	48
6/21	53	32	67	94	232	58	49	26	33	102	42	75
6/22	30	18	61	145	190	20	39	109	25	72	52	71
6/23	216	35	24	119	183	111	11	84	80	24	39	89
6/24	241	21	48	205	131	72	93	60	89	19	35	98
6/25	48	7	53	133	119	32	48	74	89	8	143	61
6/26	82	15	22	61	151	102	55	63	99	19	43	67
6/27	82	18	43	27	145	192	43	54	60	17	77	68
6/28	45	22	158	79	116	121	123	46	42	17	46	77
6/29	23	16	214	89	151	51	150	42	100	18	103	85
6/30	12	22	89	60	151	51	123	153	37	45	139	74
7/1	22	18	100	32	94	194	101	120	52	24	97	76
7/2	29	18	66	38	66	83	79	159	73	30	10	64
7/3	47	5	33	66	75	132	32	86	87	16	122	58
7/4	19	10	33	89	72	142	31	74	70	33	72	57
7/5	8	12	32	140	70	8	30	61	88	51	72	50
7/6	9	11	26	106	72	122	58	138	33	9	29	58
7/7	5	10	14	72	60	54	79	37	39	53	43	42
7/8	26	13	8	87	58	58	99	22	0	58	21	43
7/9	8	5	13	53	43	21	29	49	69	29	30	32
7/10	8	0	12	15	29	23	10	76	24	63	0	26
7/11	5	2	13	31	15	47	8	3	98	20	11	24
7/12	8	2	7	3	10	87	5	10	14	36	13	18
7/13	4	0	16	12	10	27	11	4	14	28	5	13
7/14	4	0	20	7	10	8	29	2	13	53	7	15

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Date	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average 2001-2010
7/15	2	0	10	3	6	8	13	5	11	191	8	25
7/16	3	0	2	0	0	10	0	3	9	24	0	5
7/17	2	0	0	4	8	23	11	8	0	66	0	12
7/18	0	0	0	4	8	8	15	3	16	34	8	9
7/19	0	0	0	8	11	6	3	3	9	19	6	6
7/20	0	4	4	7	11	41	11	3	4	6	3	9
7/21	0	0	4	12	3	5	0	0	3	13	2	4
7/22	0	2	0	3	2	12	3	5	0	2	0	3
7/23	0	0	1	5	4	16	0	2	2	2	0	3
7/24	0	0	5	5	0	2	1	0	2	5	0	2
7/25	0	0	2	0	0	2	5	2	6	2	0	2
7/26	0	2	0	7	4	2	0	2	5	5	0	3
7/27	0	0	0	0	9	4	0	0	3	4	0	2
7/28	0	1	0	0	2	4	0	3	2	2	0	1
7/29	0	3	0	0	9	4	3	2	1	2	0	2
7/30	0	2	2	0	8	2	0	0	0	2	0	1
7/31	0	0	2	0	4	2	3	0	0	0	0	1
8/1	0	2	0	0	2	2	5	0	0	0	0	1
8/2	0	0	0	0	5	6	2	0	0	0	0	1
8/3	0	0	0	5	4	0	2	2	2	0	0	1
8/4	0	0	0	3	3	0	2	2	5	0	4	1
8/5	0	0	0	4	7	2	2	2	0	0	0	2
8/6	2	0	0	0	2	1	2	7	0	0	0	1
8/7	0	0	0	0	5	0	0	0	0	0	0	0
8/8	0	0	0	0	4	0	0	0	0	0	1	0
8/9	0	0	0	0	0	0	0	0	0	2	2	0
8/10	0	0	0	0	2	0	0	0	0	0	0	0
8/11	0	0	0	0	0	0	1	0	0	0	0	0
8/12	0	0	0	0	0	0	2	0	0	0	0	0
8/13	0	0	0	0	0	0	0	0	0	0	0	0
8/14	0	0	0	0	2	0	0	0	0	0	0	0
8/15	0	0	0	0	0	0	0	0	0	0	0	0
8/16	0	0	0	0	0	0	2	0	0	0	0	0
8/17	0	0	0	0	0	0	0	0	0	0	0	0
8/18	0	0	0	0	4	0	0	2	0	0	0	1
8/19	0	0	0	1	0	0	0	0	0	0	0	0
8/20	0	0	0	3	0	0	0	2	0	0	0	0
8/21	2	0	0	0	3	0	0	0	0	0		0
8/22	0	0	0	0	0	0	0	0	0	0		0
8/23		0	0	0	0	0	0	0	0	0		0
8/24		0	0	0			0	0	0	0		0

Note: Date with no data indicates day when the project was not operational.

Appendix C2.–Historical cumulative mean tidal catch per unit effort for sockeye salmon catches in the Bethel test fishery, 2001–2011.

Date	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average 2001-2010
6/1	0	0	0	0	0	0	0	0	0	0	0	0
6/2	0	0	0	0	0	0	0	0	0	0	0	0
6/3	0	0	0	0	3	0	0	0	0	0	0	0
6/4	0	0	0	0	3	0	0	0	0	0	0	0
6/5	0	0	0	0	6	0	0	0	0	0	0	1
6/6	9	0	0	0	6	0	0	0	0	0	3	1
6/7	9	0	0	0	6	0	0	0	0	0	4	1
6/8	9	0	0	0	6	0	0	0	1	0	4	2
6/9	9	3	5	8	11	0	0	0	4	0	4	4
6/10	11	8	24	11	22	0	0	0	4	0	7	8
6/11	11	18	38	22	46	0	0	0	7	0	10	14
6/12	17	35	46	27	63	3	3	0	10	3	13	21
6/13	23	61	54	38	96	3	17	3	13	6	15	31
6/14	23	67	67	49	149	3	23	6	13	6	24	41
6/15	26	92	97	77	154	11	31	34	16	21	33	56
6/16	38	138	176	130	181	24	36	45	31	46	62	85
6/17	100	158	279	145	236	42	50	48	34	65	102	116
6/18	123	174	335	189	336	81	60	62	61	84	126	150
6/19	152	196	446	212	444	136	74	87	86	142	191	197
6/20	166	240	518	270	634	160	98	102	113	149	231	245
6/21	219	272	585	364	866	219	147	128	146	251	274	320
6/22	249	290	646	509	1,056	239	186	237	171	323	326	391
6/23	465	325	670	628	1,239	350	197	320	251	347	365	479
6/24	706	346	718	833	1,370	422	290	381	340	366	400	577
6/25	754	353	771	966	1,489	454	338	455	429	375	543	638
6/26	836	368	793	1,027	1,640	556	393	518	528	394	586	705
6/27	918	385	836	1,055	1,785	748	436	572	588	411	664	773
6/28	963	407	994	1,133	1,901	869	560	619	629	428	709	850
6/29	986	424	1,207	1,222	2,052	920	710	660	729	446	813	936
6/30	998	446	1,296	1,283	2,204	971	833	813	766	491	952	1,010
7/1	1,020	464	1,395	1,315	2,298	1,164	934	933	818	515	1,048	1,086
7/2	1,048	482	1,462	1,352	2,365	1,247	1,014	1,092	892	545	1,058	1,150
7/3	1,096	486	1,495	1,418	2,440	1,379	1,046	1,178	979	561	1,180	1,208
7/4	1,115	496	1,528	1,507	2,512	1,520	1,077	1,251	1,048	594	1,252	1,265
7/5	1,123	508	1,560	1,647	2,583	1,528	1,107	1,312	1,136	645	1,324	1,315
7/6	1,132	518	1,586	1,753	2,655	1,650	1,165	1,450	1,169	655	1,353	1,373
7/7	1,137	528	1,600	1,825	2,715	1,704	1,243	1,487	1,209	708	1,396	1,416
7/8	1,163	542	1,608	1,912	2,773	1,763	1,343	1,509	1,209	766	1,417	1,459
7/9	1,171	546	1,621	1,965	2,816	1,784	1,371	1,557	1,277	795	1,448	1,490
7/10	1,179	546	1,633	1,980	2,845	1,807	1,381	1,634	1,302	858	1,448	1,516
7/11	1,184	548	1,646	2,010	2,860	1,854	1,389	1,636	1,400	879	1,459	1,540
7/12	1,192	550	1,652	2,013	2,870	1,941	1,394	1,647	1,414	914	1,472	1,559
7/13	1,197	550	1,668	2,025	2,880	1,968	1,405	1,650	1,428	942	1,476	1,571
7/14	1,201	550	1,688	2,032	2,890	1,976	1,434	1,653	1,441	995	1,483	1,586

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Date	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average 2001-2010
7/15	1,203	550	1,699	2,035	2,896	1,985	1,447	1,658	1,452	1,186	1,491	1,611
7/16	1,206	550	1,700	2,035	2,896	1,995	1,447	1,661	1,461	1,209	1,491	1,616
7/17	1,208	550	1,700	2,039	2,904	2,018	1,459	1,669	1,461	1,275	1,491	1,628
7/18	1,208	550	1,700	2,043	2,912	2,026	1,473	1,672	1,476	1,309	1,499	1,637
7/19	1,208	550	1,700	2,052	2,923	2,031	1,477	1,674	1,485	1,328	1,505	1,643
7/20	1,208	554	1,704	2,059	2,934	2,073	1,488	1,677	1,489	1,333	1,508	1,652
7/21	1,208	554	1,708	2,071	2,937	2,077	1,488	1,677	1,493	1,346	1,510	1,656
7/22	1,208	556	1,708	2,074	2,939	2,089	1,490	1,682	1,493	1,348	1,510	1,659
7/23	1,208	556	1,709	2,079	2,943	2,105	1,490	1,684	1,495	1,350	1,510	1,662
7/24	1,208	556	1,713	2,084	2,943	2,107	1,492	1,684	1,497	1,355	1,510	1,664
7/25	1,208	556	1,715	2,084	2,943	2,109	1,497	1,685	1,502	1,357	1,510	1,666
7/26	1,208	558	1,715	2,092	2,948	2,111	1,497	1,687	1,507	1,362	1,510	1,668
7/27	1,208	558	1,715	2,092	2,956	2,115	1,497	1,687	1,511	1,366	1,510	1,670
7/28	1,208	559	1,715	2,092	2,958	2,118	1,497	1,691	1,513	1,368	1,510	1,672
7/29	1,208	562	1,715	2,092	2,967	2,122	1,499	1,692	1,514	1,370	1,510	1,674
7/30	1,208	564	1,716	2,092	2,974	2,124	1,499	1,692	1,514	1,371	1,510	1,676
7/31	1,208	564	1,718	2,092	2,979	2,125	1,502	1,692	1,514	1,371	1,510	1,677
8/1	1,208	566	1,718	2,092	2,980	2,127	1,507	1,692	1,514	1,371	1,510	1,677
8/2	1,208	566	1,718	2,092	2,986	2,133	1,508	1,692	1,514	1,371	1,510	1,679
8/3	1,208	566	1,718	2,097	2,990	2,133	1,510	1,694	1,516	1,371	1,510	1,680
8/4	1,208	566	1,718	2,100	2,992	2,133	1,512	1,696	1,521	1,371	1,514	1,682
8/5	1,208	566	1,718	2,104	2,999	2,135	1,514	1,697	1,521	1,371	1,514	1,683
8/6	1,209	566	1,718	2,104	3,001	2,136	1,515	1,704	1,521	1,371	1,514	1,685
8/7	1,209	566	1,718	2,104	3,006	2,136	1,515	1,704	1,521	1,371	1,514	1,685
8/8	1,209	566	1,718	2,104	3,009	2,136	1,515	1,704	1,521	1,371	1,515	1,685
8/9	1,209	566	1,718	2,104	3,009	2,136	1,515	1,704	1,521	1,374	1,517	1,686
8/10	1,209	566	1,718	2,104	3,011	2,136	1,515	1,704	1,521	1,374	1,517	1,686
8/11	1,209	566	1,718	2,104	3,011	2,136	1,516	1,704	1,521	1,374	1,517	1,686
8/12	1,209	566	1,718	2,104	3,011	2,136	1,518	1,704	1,521	1,374	1,517	1,686
8/13	1,209	566	1,718	2,104	3,011	2,136	1,518	1,704	1,521	1,374	1,517	1,686
8/14	1,209	566	1,718	2,104	3,013	2,136	1,518	1,704	1,521	1,374	1,517	1,686
8/15	1,209	566	1,718	2,104	3,013	2,136	1,518	1,704	1,521	1,374	1,517	1,686
8/16	1,209	566	1,718	2,104	3,013	2,136	1,520	1,704	1,521	1,374	1,517	1,686
8/17	1,209	566	1,718	2,104	3,013	2,136	1,520	1,704	1,521	1,374	1,517	1,686
8/18	1,209	566	1,718	2,104	3,017	2,136	1,520	1,706	1,521	1,374	1,517	1,687
8/19	1,209	566	1,718	2,105	3,017	2,136	1,520	1,706	1,521	1,374	1,517	1,687
8/20	1,209	566	1,718	2,108	3,017	2,136	1,520	1,708	1,521	1,374	1,517	1,688
8/21	1,211	566	1,718	2,108	3,019	2,136	1,520	1,708	1,521	1,374		1,688
8/22	1,211	566	1,718	2,108	3,019	2,136	1,520	1,708	1,521	1,374		1,688
8/23	1,211	566	1,718	2,108	3,019	2,136	1,520	1,708	1,521	1,374		1,688
8/24		566	1,718	2,108			1,520	1,708	1,521	1,374		1,502

Note: Date with no data indicates day when the project was not operational.

Appendix C3.–Historical percent passage of sockeye salmon at the Bethel test fish site, 2001–2011.

Date	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average 2001-2010
6/1	0	0	0	0	0	0	0	0	0	0		0
6/2	0	0	0	0	0	0	0	0	0	0	0	0
6/3	0	0	0	0	0	0	0	0	0	0	0	0
6/4	0	0	0	0	0	0	0	0	0	0	0	0
6/5	0	0	0	0	0	0	0	0	0	0	0	0
6/6	1	0	0	0	0	0	0	0	0	0	0	0
6/7	1	0	0	0	0	0	0	0	0	0	0	0
6/8	1	0	0	0	0	0	0	0	0	0	0	0
6/9	1	1	0	0	0	0	0	0	0	0	0	0
6/10	1	1	1	1	1	0	0	0	0	0	0	1
6/11	1	3	2	1	2	0	0	0	0	0	1	1
6/12	1	6	3	1	2	0	0	0	1	0	1	1
6/13	2	11	3	2	3	0	1	0	1	0	1	2
6/14	2	12	4	2	5	0	1	0	1	0	2	3
6/15	2	16	6	4	5	1	2	2	1	2	2	4
6/16	3	24	10	6	6	1	2	3	2	3	4	6
6/17	8	28	16	7	8	2	3	3	2	5	7	8
6/18	10	31	20	9	11	4	4	4	4	6	8	10
6/19	13	35	26	10	15	6	5	5	6	10	13	13
6/20	14	42	30	13	21	8	6	6	7	11	15	16
6/21	18	48	34	17	29	10	10	7	10	18	18	20
6/22	21	51	38	24	35	11	12	14	11	23	21	24
6/23	38	57	39	30	41	16	13	19	16	25	24	30
6/24	58	61	42	40	45	20	19	22	22	27	26	36
6/25	62	62	45	46	49	21	22	27	28	27	36	39
6/26	69	65	46	49	54	26	26	30	35	29	39	43
6/27	76	68	49	50	59	35	29	34	39	30	44	47
6/28	80	72	58	54	63	41	37	36	41	31	47	51
6/29	81	75	70	58	68	43	47	39	48	32	54	56
6/30	82	79	75	61	73	45	55	48	50	36	63	60
7/1	84	82	81	62	76	55	61	55	54	38	69	65
7/2	87	85	85	64	78	58	67	64	59	40	70	69
7/3	90	86	87	67	81	65	69	69	64	41	78	72
7/4	92	88	89	72	83	71	71	73	69	43	83	75
7/5	93	90	91	78	86	72	73	77	75	47	87	78
7/6	93	92	92	83	88	77	77	85	77	48	89	81
7/7	94	93	93	87	90	80	82	87	79	52	92	84
7/8	96	96	94	91	92	83	88	88	79	56	93	86
7/9	97	97	94	93	93	84	90	91	84	58	95	88
7/10	97	97	95	94	94	85	91	96	86	62	95	90
7/11	98	97	96	96	95	87	91	96	92	64	96	91
7/12	98	97	96	96	95	91	92	96	93	67	97	92
7/13	99	97	97	96	95	92	92	97	94	69	97	93
7/14	99	97	98	97	96	93	94	97	95	72	98	94
7/15	99	97	99	97	96	93	95	97	95	86	98	96
7/16	100	97	99	97	96	93	95	97	96	88	98	96
7/17	100	97	99	97	96	94	96	98	96	93	98	97
7/18	100	97	99	97	96	95	97	98	97	95	99	97
7/19	100	97	99	98	97	95	97	98	98	97	99	97
7/20	100	98	99	98	97	97	98	98	98	97	99	98

Note: The boxes represent the central 50% of the run and the shaded cells represent the median passage date of the run.

APPENDIX D: HISTORICAL CHUM SALMON DATA

Appendix D1.–Historical daily mean tidal catch per unit effort for chum salmon catches in the Bethel test fishery, 2001–2011.

Date	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average 2001-2010
6/1	0	0	0	0	0	0	0	0	0	0	0	0
6/2	0	0	0	3	0	0	0	0	0	0	0	0
6/3	0	0	0	0	0	0	0	0	0	0	0	0
6/4	0	0	0	5	0	0	0	0	0	4	3	1
6/5	3	0	0	3	0	3	0	0	3	3	0	1
6/6	0	8	0	0	0	6	0	0	1	0	0	2
6/7	0	0	0	0	0	0	3	0	0	0	0	0
6/8	0	3	0	3	0	3	0	6	1	0	3	2
6/9	0	30	0	8	0	0	0	3	3	0	6	4
6/10	0	9	6	0	0	3	6	0	0	3	6	3
6/11	0	53	3	3	13	20	3	3	0	0	5	10
6/12	0	43	3	9	12	6	0	6	3	6	0	9
6/13	6	34	5	37	14	92	12	0	3	11	8	21
6/14	0	22	14	39	11	77	11	3	6	6	9	19
6/15	0	84	19	34	38	56	23	21	21	19	21	31
6/16	3	13	28	35	8	84	17	25	28	35	3	28
6/17	6	40	25	50	35	149	19	14	5	47	22	39
6/18	36	214	5	81	57	248	17	14	16	253	50	94
6/19	14	113	40	61	64	179	28	11	8	156	64	67
6/20	6	136	50	79	285	85	119	55	6	46	42	87
6/21	0	35	29	98	307	470	86	29	30	176	35	126
6/22	5	67	8	112	444	113	64	74	14	190	95	109
6/23	20	143	36	300	299	321	99	73	152	95	43	154
6/24	85	134	20	301	229	272	126	100	96	114	19	148
6/25	163	148	21	322	101	223	208	161	135	61	164	155
6/26	211	137	37	343	159	235	234	156	251	115	172	188
6/27	62	156	26	88	106	294	234	168	121	184	194	144
6/28	17	276	121	257	91	462	475	179	125	89	202	209
6/29	14	150	295	242	358	629	806	77	379	126	441	308
6/30	3	88	268	139	358	629	328	373	393	193	616	277
7/1	22	163	328	36	466	870	424	461	159	265	590	319
7/2	69	361	324	47	527	907	520	367	145	182	541	345
7/3	156	108	320	83	667	500	391	302	236	461	397	322
7/4	248	379	382	146	814	487	484	273	324	334	377	387
7/5	79	333	444	156	1,013	205	577	244	336	207	377	359
7/6	39	320	270	106	1,065	425	613	194	530	99	349	366
7/7	61	307	225	168	955	225	487	81	386	324	486	322
7/8	70	261	95	166	559	131	361	188	167	402	202	240
7/9	25	328	57	173	601	59	139	249	173	320	269	212
7/10	146	150	54	67	948	141	97	310	246	192	31	235
7/11	295	99	61	144	1,295	135	116	42	353	224	421	276
7/12	278	123	45	49	759	776	134	136	82	149	714	253
7/13	357	96	43	68	477	137	128	241	256	296	268	210
7/14	169	323	66	60	477	103	247	304	495	327	150	257

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Date	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average 2001-2010
7/15	15	270	66	53	218	128	340	194	289	374	374	195
7/16	235	178	35	80	46	191	281	63	147	124	261	138
7/17	161	204	19	55	363	463	195	61	76	124	265	172
7/18	58	47	80	55	401	557	276	97	339	148	342	206
7/19	50	19	80	30	406	521	286	85	128	170	247	178
7/20	40	33	68	76	514	562	322	73	76	35	184	180
7/21	17	36	87	128	341	368	277	182	153	150	131	174
7/22	11	29	31	83	276	298	142	200	225	73	103	137
7/23	17	41	71	19	267	231	27	130	199	125	91	113
7/24	17	41	107	3	154	40	94	148	171	138	24	91
7/25	15	60	101	11	177	167	79	71	37	82	66	80
7/26	8	61	75	44	194	136	135	78	54	76	87	86
7/27	14	25	38	38	42	61	99	29	99	35	55	48
7/28	4	59	33	88	20	66	70	77	81	54	24	55
7/29	11	33	29	50	62	69	37	28	49	88	65	46
7/30	2	28	27	45	118	59	63	43	39	36	43	46
7/31	6	46	31	49	157	46	31	28	76	10	76	48
8/1	0	20	5	55	155	25	26	55	55	13	29	41
8/2	5	2	5	19	76	14	23	16	36	13	33	21
8/3	0	21	0	30	91	26	83	13	33	9	11	31
8/4	0	9	4	8	137	27	38	10	38	9	14	28
8/5	5	2	0	7	89	18	22	18	28	11	17	20
8/6	3	5	0	3	33	19	27	18	32	9	15	15
8/7	5	5	0	11	49	20	4	17	20	7	28	14
8/8	7	8	2	16	40	11	7	8	9	4	13	11
8/9	3	12	2	5	24	2	7	7	7	6	18	7
8/10	8	2	2	10	2	17	7	2	14	8	3	7
8/11	4	2	4	5	12	8	3	5	7	2	0	5
8/12	0	6	4	4	19	0	4	7	9	2	1	6
8/13	0	0	4	10	4	2	7	5	15	0	5	5
8/14	2	2	4	8	21	7	1	4	3	4	4	6
8/15	1	2	4	7	19	2	4	2	0	2	0	4
8/16	0	0	4	6	10	2	0	5	7	0	2	3
8/17	0	0	3	8	3	1	0	9	4	0	0	3
8/18	0	0	3	0	9	0	2	9	2	0	2	2
8/19	0	0	3	0	5	0	0	0	2	0	0	1
8/20	4	0	3	0	11	2	0	0	0	0	0	2
8/21	0	0	3	3	15	1	0	0	2	0		2
8/22	0	1	3	3	0	0	0	7	4	0		2
8/23	0	2	3	1	0	0	0	2	2	0		1
8/24		0	3	1			0	0	2	0		1

Note: Date with no data indicates day when the project was not operational.

Appendix D2.–Historical cumulative mean tidal catch per unit effort for chum salmon catches in the Bethel test fishery, 2001–2011.

Date	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average 2001-2010
6/1	0	0	0	0	0	0	0	0	0	0	0	0
6/2	0	0	0	3	0	0	0	0	0	0	0	0
6/3	0	0	0	3	0	0	0	0	0	0	0	0
6/4	0	0	0	8	0	0	0	0	0	4	3	1
6/5	3	0	0	11	0	3	0	0	3	6	3	3
6/6	3	8	0	11	0	9	0	0	4	6	3	4
6/7	3	8	0	11	0	9	3	0	4	6	3	4
6/8	3	11	0	14	0	12	3	6	6	6	6	6
6/9	3	41	0	22	0	12	3	9	9	6	11	10
6/10	3	50	6	22	0	15	8	9	9	9	17	13
6/11	3	103	8	25	13	35	11	12	9	9	22	23
6/12	3	146	11	34	25	41	11	18	12	15	22	32
6/13	9	180	17	71	38	133	23	18	14	26	31	53
6/14	9	202	30	110	49	210	34	20	20	31	39	72
6/15	9	285	49	144	87	266	57	41	42	50	60	103
6/16	11	299	77	179	95	350	74	66	69	86	63	131
6/17	17	338	103	229	131	499	94	80	75	133	85	170
6/18	53	552	108	310	188	747	110	94	91	386	135	264
6/19	67	665	148	371	252	927	138	106	99	542	199	331
6/20	73	801	198	450	537	1,012	258	161	105	588	241	418
6/21	73	836	226	547	844	1,482	343	190	135	764	276	544
6/22	78	903	235	659	1,288	1,595	407	264	149	954	371	653
6/23	98	1,047	270	959	1,587	1,916	506	337	301	1,049	414	807
6/24	183	1,181	291	1,260	1,817	2,188	632	437	397	1,163	433	955
6/25	346	1,329	312	1,583	1,918	2,412	840	598	532	1,224	597	1,109
6/26	557	1,466	349	1,926	2,077	2,646	1,075	753	783	1,340	769	1,297
6/27	619	1,622	375	2,014	2,183	2,941	1,308	921	904	1,524	963	1,441
6/28	637	1,897	496	2,271	2,273	3,402	1,783	1,099	1,028	1,613	1,165	1,650
6/29	651	2,048	791	2,514	2,631	4,031	2,589	1,176	1,407	1,738	1,607	1,958
6/30	654	2,136	1,059	2,653	2,989	4,660	2,917	1,550	1,800	1,931	2,223	2,235
7/1	676	2,299	1,387	2,690	3,455	5,530	3,341	2,010	1,959	2,196	2,812	2,554
7/2	744	2,660	1,711	2,736	3,982	6,437	3,861	2,377	2,104	2,378	3,353	2,899
7/3	900	2,768	2,031	2,819	4,650	6,937	4,252	2,680	2,339	2,838	3,750	3,221
7/4	1,148	3,147	2,413	2,965	5,464	7,424	4,736	2,953	2,663	3,172	4,127	3,608
7/5	1,227	3,480	2,857	3,120	6,477	7,629	5,314	3,197	3,000	3,380	4,504	3,968
7/6	1,267	3,800	3,127	3,226	7,542	8,053	5,927	3,391	3,530	3,478	4,854	4,334
7/7	1,328	4,107	3,352	3,395	8,496	8,278	6,414	3,471	3,917	3,802	5,340	4,656
7/8	1,397	4,367	3,447	3,561	9,055	8,409	6,775	3,660	4,083	4,205	5,542	4,896
7/9	1,423	4,696	3,503	3,733	9,656	8,468	6,914	3,909	4,256	4,524	5,811	5,108
7/10	1,568	4,846	3,558	3,800	10,604	8,609	7,011	4,219	4,502	4,716	5,843	5,343
7/11	1,863	4,945	3,618	3,945	11,899	8,743	7,127	4,260	4,855	4,940	6,264	5,620
7/12	2,141	5,068	3,663	3,993	12,658	9,519	7,261	4,396	4,937	5,089	6,978	5,873
7/13	2,498	5,165	3,706	4,061	13,135	9,656	7,389	4,637	5,193	5,385	7,245	6,083
7/14	2,667	5,488	3,772	4,122	13,612	9,759	7,636	4,941	5,688	5,712	7,395	6,340

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Date	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average 2001-2010
7/15	2,682	5,758	3,838	4,175	13,830	9,887	7,976	5,135	5,977	6,087	7,769	6,535
7/16	2,917	5,936	3,873	4,254	13,876	10,078	8,257	5,198	6,124	6,210	8,031	6,672
7/17	3,078	6,140	3,893	4,309	14,239	10,541	8,452	5,259	6,200	6,334	8,296	6,844
7/18	3,136	6,187	3,973	4,364	14,640	11,098	8,728	5,355	6,538	6,482	8,637	7,050
7/19	3,185	6,206	4,052	4,395	15,047	11,619	9,014	5,441	6,667	6,652	8,884	7,228
7/20	3,225	6,238	4,120	4,471	15,560	12,181	9,337	5,514	6,742	6,686	9,069	7,407
7/21	3,242	6,274	4,207	4,599	15,901	12,549	9,613	5,696	6,895	6,836	9,200	7,581
7/22	3,254	6,302	4,238	4,681	16,177	12,847	9,755	5,896	7,120	6,909	9,303	7,718
7/23	3,271	6,343	4,309	4,700	16,445	13,078	9,782	6,026	7,319	7,034	9,394	7,831
7/24	3,288	6,384	4,416	4,703	16,598	13,118	9,876	6,174	7,490	7,172	9,418	7,922
7/25	3,303	6,444	4,516	4,714	16,775	13,284	9,955	6,245	7,527	7,253	9,484	8,002
7/26	3,312	6,506	4,592	4,758	16,969	13,421	10,090	6,322	7,581	7,329	9,572	8,088
7/27	3,326	6,530	4,630	4,797	17,011	13,481	10,189	6,352	7,679	7,364	9,627	8,136
7/28	3,330	6,590	4,663	4,884	17,031	13,547	10,259	6,429	7,760	7,419	9,651	8,191
7/29	3,340	6,623	4,692	4,935	17,094	13,616	10,296	6,456	7,809	7,507	9,715	8,237
7/30	3,342	6,651	4,719	4,980	17,211	13,675	10,359	6,499	7,848	7,542	9,759	8,283
7/31	3,348	6,697	4,750	5,029	17,368	13,721	10,390	6,527	7,924	7,552	9,835	8,331
8/1	3,348	6,717	4,755	5,084	17,523	13,746	10,416	6,582	7,979	7,565	9,864	8,371
8/2	3,353	6,719	4,760	5,103	17,599	13,760	10,439	6,598	8,015	7,579	9,896	8,392
8/3	3,353	6,740	4,760	5,133	17,690	13,786	10,522	6,611	8,048	7,588	9,908	8,423
8/4	3,353	6,748	4,764	5,140	17,827	13,814	10,561	6,621	8,086	7,597	9,922	8,451
8/5	3,358	6,751	4,764	5,147	17,916	13,832	10,583	6,639	8,113	7,607	9,939	8,471
8/6	3,361	6,755	4,764	5,149	17,948	13,851	10,609	6,658	8,146	7,617	9,954	8,486
8/7	3,367	6,760	4,764	5,161	17,998	13,871	10,613	6,675	8,166	7,623	9,982	8,500
8/8	3,373	6,769	4,765	5,177	18,038	13,883	10,620	6,683	8,174	7,627	9,994	8,511
8/9	3,376	6,781	4,767	5,182	18,062	13,884	10,627	6,690	8,182	7,633	10,012	8,518
8/10	3,384	6,783	4,769	5,192	18,064	13,902	10,634	6,692	8,196	7,641	10,014	8,526
8/11	3,388	6,784	4,772	5,197	18,077	13,910	10,637	6,696	8,203	7,643	10,014	8,531
8/12	3,388	6,791	4,776	5,200	18,096	13,910	10,641	6,704	8,212	7,645	10,015	8,536
8/13	3,388	6,791	4,779	5,211	18,099	13,912	10,648	6,709	8,227	7,645	10,020	8,541
8/14	3,390	6,792	4,783	5,219	18,121	13,919	10,649	6,713	8,230	7,649	10,025	8,546
8/15	3,391	6,794	4,786	5,226	18,139	13,921	10,653	6,714	8,230	7,651	10,025	8,550
8/16	3,391	6,794	4,790	5,232	18,149	13,923	10,653	6,720	8,238	7,651	10,027	8,554
8/17	3,391	6,794	4,793	5,240	18,153	13,924	10,653	6,729	8,241	7,651	10,027	8,557
8/18	3,391	6,794	4,796	5,240	18,162	13,924	10,654	6,737	8,243	7,651	10,028	8,559
8/19	3,391	6,794	4,800	5,240	18,166	13,924	10,654	6,737	8,245	7,651	10,028	8,560
8/20	3,395	6,794	4,803	5,240	18,177	13,925	10,654	6,737	8,245	7,651	10,028	8,562
8/21	3,395	6,794	4,806	5,242	18,192	13,926	10,654	6,737	8,247	7,651		8,565
8/22	3,395	6,795	4,809	5,245	18,192	13,926	10,654	6,744	8,250	7,651		8,566
8/23	3,395	6,796	4,812	5,247	18,192	13,926	10,654	6,746	8,252	7,651		8,567
8/24		6,796	4,815	5,248			10,654	6,746	8,254	7,651		7,166

Note: Date with no data indicates day when the project was not operational.

Appendix D3.–Historical percent passage of chum salmon at the Bethel test fish site, 2001–2011.

Date	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average 2001-2010
6/1												
6/2	0	0	0	0	0	0	0	0	0	0	0	0
6/3	0	0	0	0	0	0	0	0	0	0	0	0
6/4	0	0	0	0	0	0	0	0	0	0	0	0
6/5	0	0	0	0	0	0	0	0	0	0	0	0
6/6	0	0	0	0	0	0	0	0	0	0	0	0
6/7	0	0	0	0	0	0	0	0	0	0	0	0
6/8	0	0	0	0	0	0	0	0	0	0	0	0
6/9	0	1	0	0	0	0	0	0	0	0	0	0
6/10	0	1	0	0	0	0	0	0	0	0	0	0
6/11	0	2	0	0	0	0	0	0	0	0	0	0
6/12	0	2	0	1	0	0	0	0	0	0	0	0
6/13	0	3	0	1	0	1	0	0	0	0	0	1
6/14	0	3	1	2	0	2	0	0	0	0	0	1
6/15	0	4	1	3	0	2	1	1	1	1	1	1
6/16	0	4	2	3	1	3	1	1	1	1	1	2
6/17	0	5	2	4	1	4	1	1	1	2	1	2
6/18	2	8	2	6	1	5	1	1	1	5	1	3
6/19	2	10	3	7	1	7	1	2	1	7	2	4
6/20	2	12	4	9	3	7	2	2	1	8	2	5
6/21	2	12	5	10	5	11	3	3	2	10	3	6
6/22	2	13	5	13	7	11	4	4	2	12	4	7
6/23	3	15	6	18	9	14	5	5	4	14	4	9
6/24	5	17	6	24	10	16	6	6	5	15	4	11
6/25	10	20	6	30	11	17	8	9	6	16	6	13
6/26	16	22	7	37	11	19	10	11	9	18	8	16
6/27	18	24	8	38	12	21	12	14	11	20	10	18
6/28	19	28	10	43	12	24	17	16	12	21	12	20
6/29	19	30	16	48	14	29	24	17	17	23	16	24
6/30	19	31	22	51	16	33	27	23	22	25	22	27
7/1	20	34	29	51	19	40	31	30	24	29	28	31
7/2	22	39	36	52	22	46	36	35	25	31	33	34
7/3	27	41	42	54	26	50	40	40	28	37	37	38
7/4	34	46	50	57	30	53	44	44	32	41	41	43
7/5	36	51	59	59	36	55	50	47	36	44	45	47
7/6	37	56	65	61	41	58	56	50	43	45	48	51
7/7	39	60	70	65	47	59	60	51	47	50	53	55
7/8	41	64	72	68	50	60	64	54	49	55	55	58
7/9	42	69	73	71	53	61	65	58	52	59	58	60
7/10	46	71	74	72	58	62	66	63	55	62	58	63
7/11	55	73	75	75	65	63	67	63	59	65	62	66
7/12	63	75	76	76	70	68	68	65	60	67	70	69
7/13	74	76	77	77	72	69	69	69	63	70	72	72
7/14	79	81	78	79	75	70	72	73	69	75	74	75
7/15	79	85	80	80	76	71	75	76	72	80	77	77
7/16	86	87	80	81	76	72	77	77	74	81	80	79
7/17	91	90	81	82	78	76	79	78	75	83	83	81
7/18	92	91	83	83	80	80	82	79	79	85	86	83
7/19	94	91	84	84	83	83	85	81	81	87	89	85
7/20	95	92	86	85	86	87	88	82	82	87	90	87
7/21	95	92	87	88	87	90	90	84	84	89	92	89
7/22	96	93	88	89	89	92	92	87	86	90	93	90
7/23	96	93	90	90	90	94	92	89	89	92	94	91
7/24	97	94	92	90	91	94	93	92	91	94	94	93

Note: The boxes represent the central 50% of the run and the shaded cells represent the median passage date of the run.

APPENDIX E: HISTORICAL COHO SALMON DATA

Appendix E1.–Historical daily mean tidal catch per unit effort for coho salmon catches in the Bethel test fishery, 2001–2011.

Date	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average 2001-2010
7/8	0	0	1	0	0	0	5	0	0	0	0	1
7/9	0	0	2	9	0	0	0	0	0	0	0	1
7/10	0	2	0	3	0	0	0	0	0	0	0	0
7/11	1	0	3	5	0	3	0	6	5	0	0	2
7/12	6	0	5	0	0	16	0	0	3	0	0	3
7/13	0	1	5	6	0	0	0	0	1	0	0	1
7/14	0	1	25	5	0	0	15	3	0	0	3	5
7/15	0	1	38	3	2	1	7	8	0	0	14	6
7/16	7	2	21	3	0	7	13	14	4	3	0	7
7/17	4	2	17	22	5	22	24	22	0	0	5	12
7/18	4	2	50	22	6	50	19	16	21	0	4	19
7/19	3	0	50	42	13	50	39	25	16	3	13	24
7/20	4	0	100	54	16	78	28	34	29	2	11	34
7/21	0	2	113	55	2	54	20	40	61	6	10	35
7/22	8	8	44	109	7	40	51	63	124	17	8	47
7/23	10	11	61	48	6	31	16	55	91	11	27	34
7/24	9	17	82	63	18	13	51	80	81	24	11	44
7/25	4	46	225	92	16	18	82	114	55	15	36	67
7/26	8	54	160	106	20	26	110	70	114	24	58	69
7/27	65	96	228	47	46	37	72	46	115	21	40	77
7/28	0	107	160	136	29	118	54	190	211	47	56	105
7/29	65	127	91	265	34	179	92	235	106	58	82	125
7/30	23	127	116	262	43	143	93	196	75	145	59	122
7/31	86	189	242	365	82	99	146	177	306	48	141	174
8/1	31	335	98	314	142	62	72	223	175	67	223	152
8/2	46	63	65	139	74	111	163	221	184	43	324	111
8/3	11	213	66	216	62	92	348	192	223	49	126	147
8/4	29	78	45	211	93	94	456	224	190	53	202	147
8/5	110	89	35	219	177	103	258	306	228	80	295	161
8/6	194	196	50	163	220	113	257	247	176	91	183	171
8/7	160	191	75	274	354	108	15	225	167	208	244	178
8/8	298	256	211	339	317	99	84	132	185	230	99	215
8/9	456	274	228	145	211	60	129	210	186	129	213	203
8/10	328	63	71	554	180	192	44	29	134	246	202	184
8/11	326	278	95	210	112	173	59	172	97	146	67	167
8/12	207	376	197	189	120	176	29	228	122	69	74	171
8/13	36	144	301	363	38	231	80	189	187	10	147	158
8/14	61	53	206	233	85	106	53	126	193	31	90	115
8/15	186	182	229	468	81	167	70	219	76	18	40	169
8/16	42	20	202	268	128	48	24	248	79	12	44	107
8/17	36	100	254	167	100	62	19	233	96	12	15	108
8/18	8	220	115	79	126	82	45	181	41	0	43	89
8/19	16	59	215	112	160	58	57	137	55	38	11	91
8/20	13	60	68	48	170	19	55	139	45	35	11	65

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Date	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average 2001-2010
8/21	8	78	18	64	171	18	39	49	80	30		56
8/22	8	76	52	105	115	4	16	55	74	2		51
8/23	0	53	34	88	99	0	7	37	61	4		38
8/24		38	51	81			13	81	23	2		41
8/25				75								
8/26				119								
8/27				70								
8/28				64								
8/29				81								

Note: Date with no data indicates day when the project was not operational.

Appendix E2.–Historical cumulative mean tidal catch per unit effort for coho salmon catches in the Bethel test fishery, 2001–2011.

Date	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average 2001-2010
7/8	0	0	1	0	0	0	5	0	0	0	0	1
7/9	0	0	2	9	0	0	5	0	0	0	0	2
7/10	0	2	2	11	0	0	5	0	0	0	0	2
7/11	1	2	5	16	0	3	5	6	5	0	0	4
7/12	7	2	11	16	0	18	5	6	8	0	0	7
7/13	7	3	16	23	0	18	5	6	10	0	0	9
7/14	7	4	41	27	0	18	20	8	10	0	3	13
7/15	7	5	78	30	2	19	26	16	10	0	16	19
7/16	14	7	99	33	2	26	39	30	14	3	16	27
7/17	17	9	116	56	7	48	63	52	14	3	22	38
7/18	21	11	166	78	13	98	82	68	35	3	26	57
7/19	24	11	217	120	26	148	120	93	51	5	39	82
7/20	28	11	316	173	41	226	148	127	80	7	50	116
7/21	28	12	429	228	44	280	169	167	141	13	60	151
7/22	36	21	473	337	51	320	219	231	265	30	68	198
7/23	46	32	534	385	57	352	235	285	356	40	95	232
7/24	55	49	616	447	74	365	286	365	436	64	106	276
7/25	59	95	841	539	90	382	368	480	491	79	142	342
7/26	67	148	1,001	645	110	408	478	550	606	103	200	411
7/27	131	244	1,229	692	156	445	550	596	721	124	240	489
7/28	131	351	1,389	828	185	563	605	785	931	170	296	594
7/29	196	478	1,479	1,093	219	742	697	1,020	1,037	229	378	719
7/30	219	605	1,596	1,354	262	885	790	1,216	1,112	374	437	841
7/31	305	794	1,838	1,720	344	985	936	1,393	1,418	421	578	1,015
8/1	336	1,129	1,936	2,034	486	1,047	1,008	1,616	1,593	488	802	1,167
8/2	382	1,192	2,001	2,173	561	1,158	1,171	1,837	1,777	531	1,126	1,278
8/3	393	1,405	2,067	2,389	622	1,250	1,519	2,030	2,000	580	1,252	1,426
8/4	422	1,483	2,112	2,599	715	1,344	1,975	2,253	2,190	634	1,454	1,573
8/5	532	1,572	2,147	2,819	892	1,447	2,234	2,560	2,418	713	1,749	1,733
8/6	726	1,768	2,197	2,982	1,112	1,560	2,491	2,806	2,595	804	1,932	1,904
8/7	887	1,959	2,272	3,255	1,466	1,668	2,506	3,032	2,762	1,011	2,177	2,082
8/8	1,184	2,215	2,483	3,594	1,783	1,767	2,590	3,163	2,946	1,242	2,276	2,297
8/9	1,640	2,489	2,711	3,740	1,994	1,827	2,719	3,373	3,132	1,371	2,489	2,500
8/10	1,968	2,553	2,782	4,294	2,174	2,019	2,762	3,402	3,266	1,616	2,691	2,684
8/11	2,294	2,831	2,877	4,505	2,286	2,193	2,821	3,573	3,363	1,762	2,758	2,850
8/12	2,501	3,207	3,074	4,694	2,406	2,369	2,850	3,801	3,485	1,831	2,832	3,022
8/13	2,537	3,351	3,375	5,057	2,444	2,601	2,931	3,990	3,672	1,840	2,979	3,180
8/14	2,598	3,403	3,581	5,290	2,529	2,707	2,983	4,115	3,865	1,871	3,069	3,294
8/15	2,784	3,585	3,810	5,758	2,610	2,874	3,053	4,334	3,940	1,889	3,109	3,464
8/16	2,826	3,605	4,012	6,026	2,737	2,921	3,077	4,582	4,019	1,901	3,153	3,571
8/17	2,862	3,705	4,266	6,193	2,837	2,984	3,096	4,815	4,115	1,913	3,168	3,678
8/18	2,870	3,925	4,380	6,272	2,963	3,065	3,140	4,995	4,156	1,913	3,212	3,768
8/19	2,887	3,984	4,596	6,385	3,123	3,123	3,197	5,133	4,211	1,951	3,223	3,859
8/20	2,899	4,044	4,663	6,433	3,292	3,142	3,252	5,272	4,256	1,986	3,234	3,924

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Date	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average 2001-2010
8/21	2,907	4,122	4,682	6,497	3,464	3,160	3,291	5,320	4,336	2,016		3,980
8/22	2,914	4,198	4,734	6,602	3,579	3,164	3,307	5,376	4,411	2,018		4,030
8/23	2,914	4,251	4,768	6,690	3,678	3,164	3,314	5,413	4,472	2,022		4,069
8/24		4,289	4,819	6,771			3,328	5,494	4,495	2,024		
8/25				6,846								
8/26				6,965								
8/27				7,035								
8/28				7,099								
8/29				7,180								

Note: Date with no data indicates day when the project was not operational.

Appendix E3.–Historical percent passage of coho salmon at the Bethel test fish site, Bethel test fishery, 2001–2011.

Date	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average 2001-2010
7/8	0	0	0	0	0	0	0	0	0	0	0	0
7/9	0	0	0	0	0	0	0	0	0	0	0	0
7/10	0	0	0	0	0	0	0	0	0	0	0	0
7/11	0	0	0	0	0	0	0	0	0	0	0	0
7/12	0	0	0	0	0	1	0	0	0	0	0	0
7/13	0	0	0	0	0	1	0	0	0	0	0	0
7/14	0	0	1	0	0	1	1	0	0	0	0	0
7/15	0	0	2	0	0	1	1	0	0	0	1	0
7/16	0	0	2	0	0	1	1	1	0	0	1	1
7/17	1	0	2	1	0	2	2	1	0	0	1	1
7/18	1	0	3	1	0	3	2	1	1	0	1	1
7/19	1	0	5	2	1	5	4	2	1	0	1	2
7/20	1	0	7	3	1	7	4	2	2	0	2	3
7/21	1	0	9	3	1	9	5	3	3	1	2	4
7/22	1	0	10	5	1	10	7	4	6	1	2	5
7/23	2	1	11	6	2	11	7	5	8	2	3	5
7/24	2	1	13	7	2	12	9	7	10	3	3	6
7/25	2	2	18	8	2	12	11	9	11	4	4	8
7/26	2	3	21	10	3	13	14	10	14	5	6	10
7/27	5	6	26	10	4	14	17	11	16	6	7	11
7/28	5	8	29	12	5	18	18	15	21	8	9	14
7/29	7	11	31	16	6	23	21	19	23	11	12	17
7/30	8	14	33	20	7	28	24	22	25	18	14	20
7/31	10	19	39	26	9	31	28	26	32	21	18	24
8/1	12	27	41	30	13	33	30	30	36	24	25	28
8/2	13	28	42	32	15	37	35	34	40	26	35	30
8/3	13	33	43	36	17	40	46	37	45	29	39	34
8/4	14	35	44	39	19	42	60	42	49	31	45	38
8/5	18	37	45	42	24	46	67	47	54	35	54	42
8/6	25	42	46	45	30	49	75	52	58	40	60	46
8/7	30	46	48	49	40	53	76	56	62	50	67	51
8/8	41	52	52	54	48	56	78	58	66	61	70	57
8/9	56	59	57	56	54	58	82	62	70	68	77	62
8/10	68	60	58	64	59	64	83	63	73	80	83	67
8/11	79	67	60	67	62	69	85	66	75	87	85	72
8/12	86	75	64	70	65	75	86	70	78	91	88	76
8/13	87	79	71	76	66	82	88	74	82	91	92	80
8/14	89	80	75	79	69	86	90	76	86	93	95	82
8/15	96	84	80	86	71	91	92	80	88	93	96	86
8/16	97	85	84	90	74	92	93	85	90	94	97	88
8/17	98	87	89	93	77	94	93	89	92	95	98	91
8/18	98	92	92	94	81	97	95	92	93	95	99	93
8/19	99	94	96	95	85	99	96	95	94	96	100	95
8/20	99	95	98	96	90	99	98	97	95	98	100	97
8/21	100	97	98	97	94	100	99	98	97	100	100	98
8/22	100	99	99	99	97	100	100	99	99	100	100	99
8/23	100	100	100	100	100	100	100	100	100	100	100	100

Note: The boxes represent the central 50% of the run and the shaded cells represent the median passage date of the run.

APPENDIX F: HISTORICAL CLIMATOLOGICAL DATA

Appendix F1.–Historical daily surface water temperature of the Kuskokwim River at the Bethel test fish site, 2001–2011.

Date	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2001-2010 Summary		
												Mean	Min.	Max.
6/1		10 [a]	13	14	16	12	11 [a]	12 [a]	10	13	11 [a]	12	9	16
6/2	9	10	12	12	12	12	11 [a]	12	10	12	11	11	9	12
6/3	10	16	12	12	13	11	11 [a]	11	10	12	12	12	10	16
6/4	11	11	11	12	13	11	11 [a]	11	10	12	11	11	10	13
6/5	11	9	11	13	10	10	11 [a]	11	10	13	11	11	9	13
6/6	11	10	11	14	12	12	11 [a]	10	10	13	12	11	10	14
6/7	12	10	10	14	11	11	11 [a]	11	10	13	11	11	10	14
6/8	11	9	12	14	11	10	11	11	10	13	12	11	9	14
6/9	11	9	12	14	13	10	11	10	10	13	11	11	9	14
6/10	11	7	10	14	14	11	11	11	11	12	12	11	7	14
6/11	10	9	11	13	11	10	12	11	12	14	12	11	9	14
6/12	10	11	12	14	12	10	13	10	13	12	12	12	10	14
6/13	10	10	12	15	12	9	13	11	14	9	11	11	9	15
6/14	10	14	12	15	12	10	13	12	14	10	11	12	10	15
6/15	10	15	14	14	13	11	12	12	14	9	11	12	9	15
6/16	10	19	14	15	13	12	13	12 [a]	14	11	12	13	10	19
6/17	11	16	16	14	13	13	12	13	15	11	12	13	11	16
6/18	13	10	15	15	13	13	12	12	14	11	13	13	10	15
6/19	15	11	15	14	16	14	12	12	14	12	13	13	11	16
6/20	14	10	14	14 [a]	14	15	14	12	14	12	13	13	10	15
6/21	15	12	13	15	15	14	13	12	14	12	14	13	12	15
6/22	16	10	15	20	16	15	13	13	13	15	11	14	10	20
6/23	16	12	15	21	16	14	14	13	14	15	12	15	12	21
6/24	15	15	11	19	16	14 [a]	13	13	12	13	13	14	11	19
6/25	14	15	11	19 [a]	16	14	14	14	12	15	12	14	11	19
6/26	14	15	13	15	17	15	14	14 [a]	13	16	11	14	13	17
6/27	13	15	13	15 [a]	18	15	14	14	13	14	13	14	13	18
6/28	14	15	15	17	18	15 [a]	13	14 [a]	13 [a]	15	12	15	13	18
6/29	14	15	14	17	17	15 [a]	14	13	12	14	12	14	12	17
6/30	15	15	15	17 [a]	17	14	14	13	14	15	12	15	13	17
7/1	13	15	14	18	17	13	14 [a]	14	13	15	12	15	13	18
7/2	12	15	14 [a]	18	17	14	14	14	17	16	12	15	12	18
7/3	13	15 [a]	12	18	17 [a]	14	14	13	17 [a]	16	13	15	12	18
7/4	13	14	12 [a]	17	17 [a]	14 [a]	14 [a]	13	17 [a]	16 [a]	12 [a]	15	12	17
7/5	12	14 [a]	15	17	17 [a]	16	14	13	17 [a]	15	12	15	12	17
7/6	12	14 [a]	14	17 [a]	19	16	16	15	16	15	12	15	12	19
7/7	13	14 [a]	15	16	19	15	16 [a]	14	16	15	12	15	13	19
7/8	13	13	15 [a]	17	18	17	16	14	16	15	12	15	13	18
7/9	13	14	15	18	18 [a]	17	17	14 [a]	17	15	12	16	13	18
7/10	14	14	15	18	12	17	16	14	17	15	13	15	12	18
7/11	12	14	15	17	16	16	16 [a]	15	18	16	13	15	12	18
7/12	12	15	15	19	16 [a]	18	18	14	17	15	12	16	12	19
7/13	12	15	17	18	16 [a]	20	17	14	19	15	12	16	12	20
7/14	13	16	16	18 [a]	15	19	16	12	17	16	11	16	12	19
7/15	13	15	17	19	14	15	13	11	18	16	11	15	11	19
7/16	13	16	15	19	14	14	15	12	17	15	11	15	12	19

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Appendix F1.–Page 2 of 2.

Date	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2001-2010 Summary		
												Mean	Min.	Max.
7/17	12	16	15	19 [a]	17	15	15	11	17	15	12	15	11	19
7/18	12	16	15 [a]	19 [a]	17	14	15	12	16	15	12	15	12	19
7/19	12	17	15 [a]	18	16	16	16	12 [a]	16	15	13	15	12	18
7/20	13	16	15 [a]	24	14	15	15	12	14	14	13	15	12	24
7/21	13	17	15	18	15	15	15	12	15	13	12	15	12	18
7/22	13 [a]	17	17	19	15 [a]	18	14	12	15	14	11	15	12	19
7/23	13 [a]	17	16	19	15 [a]	16	14	12	15	14	13	15	12	19
7/24	13 [a]	17	15	17	15 [a]	17	14	13	15	13	13 [a]	15	13	17
7/25	13 [a]	16	15	18	15 [a]	16	15	13	16	13	13 [a]	15	13	18
7/26	13 [a]	15	16	17	18	16	15	12	15	13	14	15	12	18
7/27	13 [a]	15	14	17	18	16	16	13	14	13	15	15	13	18
7/28	16	15	14 [a]	17	17	16 [a]	16	12	14	13	15	15	12	17
7/29	15	15	15	14	18	14	16	12	14	13	15	14	12	18
7/30	14	15	15 [a]	17	18	14	15	14	14	13	14	15	13	18
7/31	14 [a]	15	15	19	17	13	15	14	13	13	13	15	13	19
8/1	14 [a]	16	14	13	16	14	15	13	13	14	13	14	13	16
8/2	14 [a]	17	13	16	17	14	14	13	13	14	13	14	13	17
8/3	14 [a]	17	13	12	17	13 [a]	15	13	13	14	12	14	12	17
8/4	13	18	12	16	17	14	14	14	14	14	12	15	12	18
8/5	14	17	13	16	16	14	14	14	13	14	12	14	13	17
8/6	13	17	14	16	16	14	14	14	13	14	12 [a]	14	13	17
8/7	13	15	14 [a]	16	15	13	14	14	14	13	11	14	13	16
8/8	13	15 [a]	14 [a]	16	16	14	14	14	15	13	11 [a]	14	13	16
8/9	13 [a]	14	15	16 [a]	16	13	14	14	15	13	11	14	13	16
8/10	13 [a]	15	15	16 [a]	16	14	14	14	12	12	12	14	12	16
8/11	13 [a]	15	15	16	18	15	14	14	12	12	11	14	12	18
8/12	13 [a]	15	15	16	18	13	14	15	15	11	10	14	11	18
8/13	13 [a]	14	15	16	19	13	14 [a]	15	9	12	10	14	9	19
8/14	13 [a]	14	15	16	19	13	14	14	10	12	10	14	10	19
8/15	13 [a]	13	14	17	19	14	14 [a]	14	15	12	10	14	12	19
8/16	13 [a]	13	13	18	18	13	15	14	10	12	10	14	10	18
8/17	13 [a]	13	12	17	18	13 [a]	15	14	10	12	10	14	10	18
8/18	13 [a]	13	11	17	17	13	14	14	13	12	11	14	11	17
8/19	13 [a]	12	13	19	17	12	15	14	13	11	11	14	11	19
8/20	13 [a]	12	11	19	16	13	14	14	13	12	11	14	11	19
Average	13	14	14	16	16	14	14	13	14	13	12	14	13	16
Min.	9	7	10	12	10	9	11	10	9	9	10	9	7	12
Max.	16	19	17	24	19	20	18	15	19	16	15	18	15	24

Note: Value entered was lowest value for that day.

[a] Indicates an estimate.

Appendix F2.–Historical daily water clarity measurements of the Kuskokwim River at the Bethel test fish site, 2001–2011.

Date	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2001-2010 Summary		
												Mean	Min.	Max.
6/1	0.3	0.3	0.8	0.5	0.5	0.4	0.9	0.5 [a]	0.5	0.5	0.4	0.5	0.3	0.9
6/2	0.2	0.3	0.9	0.4	0.4	0.3	0.8	0.5	0.5	0.4	0.7	0.5	0.2	0.9
6/3	0.3	0.2	0.6	0.4	0.4	0.4	0.7	0.7	0.5	0.5	0.6	0.5	0.2	0.7
6/4	0.3	0.3	0.4	0.4	0.5	0.4	0.9	0.6	0.6	0.5	0.7	0.5	0.3	0.9
6/5	0.5	0.3	0.6	0.3	0.5	0.3	0.8	0.7	0.4	0.5	0.5	0.5	0.3	0.8
6/6	0.4	0.3	0.3	0.2	0.5	0.4	0.8	0.7	0.4	0.6	0.6	0.5	0.2	0.8
6/7	0.4	0.3	0.5	0.4	0.6	0.3	0.9	0.7	0.5	0.7	0.5	0.5	0.3	0.9
6/8	0.3	0.3	0.6	0.4	0.5	0.5	1.0	0.8	0.4	0.7	0.5	0.5	0.3	1.0
6/9	0.5	0.3	0.6	0.5	0.5	0.4	1.0	0.7	0.7	0.7	0.4	0.6	0.3	1.0
6/10	0.3	0.3	0.5	0.5	0.6	0.4	1.0	0.7	0.5	0.7	0.4	0.6	0.3	1.0
6/11	0.3	0.3	0.7	0.4	0.6	0.3	1.0	0.7	0.7	0.7	0.3	0.6	0.3	1.0
6/12	0.3	0.4	0.4	0.5	0.5	0.4	0.9	0.7	0.6	0.6	0.3	0.5	0.3	0.9
6/13	0.3	0.4	0.7	0.4	0.5	0.4	0.8	0.8	0.8	0.7	0.3	0.6	0.3	0.8
6/14	0.4	0.3	1.0	0.6	0.6	0.5	1.0	1.1	0.9	0.6	0.3	0.7	0.3	1.1
6/15	0.3	0.4	0.8	0.9	0.6	0.4	1.2	0.6	0.7	0.4	0.4	0.6	0.3	1.2
6/16	0.4	0.4	0.7	0.6	0.6	0.4	1.1	0.8	0.7	0.5	0.6	0.6	0.4	1.1
6/17	0.3	0.4	0.7	0.4	0.6	0.4	1.1	0.9	0.6	0.6	0.5	0.6	0.3	1.1
6/18	0.4	0.4	0.6	0.4	0.6	0.5	1.1	0.9	0.6	0.5	0.9	0.6	0.4	1.1
6/19	0.5	0.5	0.5	0.3	0.5	0.5	1.0	0.7	0.5	0.5	0.8	0.6	0.3	1.0
6/20	0.4	0.6	0.5	0.3 [a]	0.7	0.6	1.0	0.7	0.5	0.5	0.7	0.6	0.3	1.0
6/21	0.4	0.8	0.3	0.4	0.7	0.5	1.2	0.7	0.5	0.5	1.2	0.6	0.3	1.2
6/22	0.4	0.8	0.2	0.6	0.3	0.7	1.2	0.7	0.5	0.6	1.2	0.6	0.2	1.2
6/23	0.4	0.7	0.2	0.6	0.2	0.6	1.3	0.8	0.4	0.6	1.1	0.6	0.2	1.3
6/24	0.4	0.6	0.2	0.6	0.2	0.6 [a]	1.0	0.9	0.4	0.8	1.2	0.6	0.2	1.0
6/25	0.4	0.5	0.3	0.6 [a]	0.2	0.7	1.1	0.7	0.5	0.8	1.1	0.6	0.2	1.1
6/26	0.3	0.5	0.3	0.6	0.2	0.6	0.7	0.4	0.4	0.8	0.5	0.5	0.2	0.8
6/27	0.3	0.4	0.3	0.6	0.2	0.4	1.0	0.4	0.4	0.7	0.4	0.5	0.2	1.0
6/28	0.3	0.3	0.3	0.6 [a]	0.1	0.4 [a]	0.9	0.4 [a]	0.4	0.9	0.5	0.5	0.1	0.9
6/29	0.2	0.3	0.3	0.4	0.1	0.4 [a]	0.7	0.5	0.5	0.9	0.5	0.4	0.1	0.9
6/30	0.2	0.2	0.3	0.4 [a]	0.1 [a]	0.6	0.7	0.3	0.6	1.2	0.4	0.5	0.1	1.2
7/1	0.2	0.2	0.3	0.3	0.2	0.4	0.7 [a]	0.4	0.5	1.2	0.4	0.4	0.2	1.2
7/2	0.2	0.3	0.3 [a]	0.3	0.2	0.5	0.5	0.4	0.5 [a]	1.0	0.5	0.4	0.2	1.0
7/3	0.2	0.3 [a]	0.3	0.2	0.2 [a]	0.5	0.5	0.4	0.5 [a]	1.1	0.5	0.4	0.2	1.1
7/4	0.2	0.2	0.3	0.2	0.2 [a]	0.5 [a]	0.5 [a]	0.4 [a]	0.5 [a]	1.1 [a]	0.5 [a]	0.4	0.2	1.1
7/5	0.2	0.2 [a]	0.3	0.2	0.2 [a]	0.5	0.5	0.4	0.5 [a]	0.8	0.5	0.4	0.2	0.8
7/6	0.2	0.2 [a]	0.2	0.2 [a]	0.3	0.4	0.5	0.3	0.7	0.8	0.5	0.4	0.2	0.8
7/7	0.2	0.2 [a]	0.3	0.2	0.3	0.5	0.5 [a]	0.4	1.0	0.7	0.4	0.4	0.2	1.0
7/8	0.3	0.5	0.3 [a]	0.2	0.2	0.4	0.5	0.5	1.0	0.7	0.4	0.4	0.2	1.0
7/9	0.2	0.5	0.3	0.1	0.2 [a]	0.4	0.5	0.5 [a]	1.2	0.7 [a]	0.4	0.5	0.1	1.2
7/10	0.2	0.5	0.2	0.1	0.3	0.3	0.8	0.5	1.2	0.4	0.6	0.4	0.1	1.2
7/11	0.2	0.5	0.1	0.2	0.2	0.3	0.8 [a]	0.6	1.0	0.6	0.4	0.4	0.1	1.0
7/12	0.3	0.4	0.1	0.2	0.2 [a]	0.2	0.6	0.6	0.9	0.3	0.4	0.4	0.1	0.9
7/13	0.2	0.4	0.2	0.2	0.2 [a]	0.3	0.6	0.5	1.0	0.4	0.5	0.4	0.2	1.0
7/14	0.2	0.3	0.1	0.2 [a]	0.2	0.3	0.5	0.5	1.2	0.5	0.4	0.4	0.1	1.2
7/15	0.2	0.3	0.2	0.2	0.2	0.2	0.5	0.4	0.4	0.4	0.5	0.3	0.2	0.5
7/16	0.2	0.3	0.2	0.2	0.2	0.2	0.4	0.3	0.4	0.4	0.5	0.3	0.2	0.4

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Date	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2001-2010 Summary		
												Mean	Min.	Max.
7/17	0.3	0.3	0.2	0.2 [a]	0.3	0.3	0.4	0.3	0.3	0.4	0.5	0.3	0.2	0.4
7/18	0.4	0.3	0.2	0.2 [a]	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.3	0.2	0.4
7/19	0.3	0.2	0.2 [a]	0.2	0.2	0.2	0.3	0.3	0.2	0.3	0.4	0.2	0.2	0.3
7/20	0.3	0.2	0.2 [a]	0.2	0.2	0.2	0.3	0.3	0.2	0.5	0.5	0.3	0.2	0.5
7/21	0.4	0.3	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.5	0.5	0.3	0.2	0.5
7/22	0.5	0.3	0.1	0.2	0.3 [a]	0.3	0.5	0.3	0.2	0.3	0.5	0.3	0.1	0.5
7/23	0.4	0.4	0.2	0.2	0.3 [a]	0.3	0.5	0.3	0.2	0.4	0.3	0.3	0.2	0.5
7/24	0.4	0.3	0.2	0.2	0.3 [a]	0.3	0.3	0.3	0.2	0.4	0.3 [a]	0.3	0.2	0.4
7/25	0.5	0.3	0.1	0.2	0.3 [a]	0.3	0.5	0.4	0.2	0.3	0.3 [a]	0.3	0.1	0.5
7/26	0.5	0.4	0.2	0.2	0.3	0.4	0.6	0.4	0.2	0.2	0.3 [a]	0.3	0.2	0.6
7/27	0.3	0.3	0.1	0.2	0.2	0.4	0.6	0.4	0.2	0.1	0.4	0.3	0.1	0.6
7/28	0.3	0.4	0.1 [a]	0.3	0.3	0.4 [a]	0.6	0.4	0.2	0.2	0.4	0.3	0.1	0.6
7/29	0.3	0.3	0.2	0.3	0.4	0.4	0.6	0.4	0.1	0.2	0.4	0.3	0.1	0.6
7/30	0.2	0.2	0.2 [a]	0.3	0.3	0.3	0.6	0.4	0.2	0.2	0.5	0.3	0.2	0.6
7/31	0.2	0.3	0.2	0.2	0.3	0.5	0.6	0.6	0.2	0.2	0.4	0.3	0.2	0.6
8/1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.2	0.2	0.5	0.3	0.1	0.6
8/2	0.1	0.3	0.1	0.3	0.2	0.5	0.4	0.6	0.3	0.2	0.4	0.3	0.1	0.6
8/3	0.1	0.3	0.1	0.3	0.3	0.5 [a]	0.4	0.6	0.3	0.2	0.4	0.3	0.1	0.6
8/4	0.1	0.3	0.1	0.2	0.3	0.4	0.4	0.7	0.3	0.2	0.3	0.3	0.1	0.7
8/5	0.2	0.2	0.2	0.2	0.3	0.5	0.4	0.7	0.3	0.2	0.3	0.3	0.2	0.7
8/6	0.2	0.2	0.1	0.3	0.3	0.3	0.4	0.7	0.3	0.2	0.3 [a]	0.3	0.1	0.7
8/7	0.1	0.3	0.1 [a]	0.3	0.4	0.3	0.4	0.7	0.3	0.2	0.3 [a]	0.3	0.1	0.7
8/8	0.2	0.3 [a]	0.1 [a]	0.2	0.4 [a]	0.4	0.4	0.6	0.3	0.3	0.3 [a]	0.3	0.1	0.6
8/9	0.2 [a]	0.3	0.2	0.2 [a]	0.3	0.5	0.3	0.6	0.3	0.3	0.2	0.3	0.2	0.6
8/10	0.2 [a]	0.3	0.2	0.2 [a]	0.4	0.4	0.3	0.5	0.2	0.3	0.2	0.3	0.2	0.5
8/11	0.2 [a]	0.3	0.2	0.3	0.3	0.4	0.2	0.5 [a]	0.2	0.3	0.2	0.3	0.2	0.5
8/12	0.2 [a]	0.2	0.3	0.3	0.4	0.4	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.4
8/13	0.2 [a]	0.2	0.2	0.3	0.4	0.4	0.2	0.3	0.1	0.2	0.2	0.2	0.1	0.4
8/14	0.2 [a]	0.2	0.1	0.2	0.5	0.5	0.1	0.4	0.2	0.2	0.2	0.2	0.1	0.5
8/15	0.2 [a]	0.2	0.3	0.2	0.4	0.6	0.1	0.4	0.2	0.2	0.2	0.3	0.1	0.6
8/16	0.2 [a]	0.3	0.3	0.2	0.4	0.6	0.1	0.4	0.2	0.2	0.2	0.3	0.1	0.6
8/17	0.2 [a]	0.2	0.3	0.2	0.4	0.6 [a]	0.1	0.3	0.2	0.2	0.2	0.3	0.1	0.6
8/18	0.2 [a]	0.1	0.3 [a]	0.2	0.3	0.5	0.1	0.3	0.2	0.2	0.2	0.2	0.1	0.5
8/19	0.2 [a]	0.2	0.2	0.2	0.4	0.4	0.2	0.5	0.2	0.2	0.2	0.3	0.2	0.5
8/20	0.2 [a]	0.2	0.2	0.2	0.3	0.3	0.1	0.7	0.2	0.2	0.3	0.3	0.1	0.7
Average	0.3	0.3	0.3	0.3	0.3	0.4	0.6	0.5	0.4	0.5	0.5	0.4	0.3	0.6
Min.	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.2
Max.	0.5	0.8	1.0	0.9	0.7	0.7	1.3	1.1	1.2	1.2	1.2	0.9	0.5	1.3

Note: Value entered was lowest value for that day.

[a] Indicates an estimate.

APPENDIX G: HISTORICAL ESCAPEMENT DATA

Appendix G1.–Chinook salmon aerial survey escapement counts in Kuskokwim River spawning tributaries, 1980–2011.

Year	Eek aerial	Kwethluk aerial	Kisaralik aerial	Tuluksak aerial	Aniak aerial	Kipchuk (Aniak) aerial	Salmon (Aniak) aerial	Holokuk aerial	Oskawalik aerial	Holitna aerial	Gagarayah aerial	Cheeneetnuk aerial	Salmon (Pitka) aerial
1980	2,378			1,035			1,186						1,450
1981		2,034	672		9,074								1,439
1982		471	81					42		521			413
1983	188			202	1,909		231	33		1,069			572
1984												1,177	545
1985	1,118	51	63	142				135				1,002	620
1986					424		336	100		650		317	
1987	1,739					193	516	210	193		205		
1988	2,255		869	188	954		244		80				473
1989	1,042	610	152		2,109	994	631						452
1990			631	200	1,255	537	596	157	113				
1991	1,312		217	358	1,564	885	583						
1992					2,284	670	335	64	91	2,022	328	1,050	2,536
1993					2,687	1,248	1,082	114	103	1,573	419	678	1,010
1994			1,243			1,520	1,218				807	1,206	1,010
1995			1,243		3,171	1,215	1,446	181	326	1,887	1,193	1,565	1,911
1996							985	85					
1997					2,187	855	980	165	1,470	2,093		345	
1998	522	126	457		1,930	443	557						
1999								18	98				
2000					714	182	238	42		301			362
2001							598		186	1,130	143		1,033
2002		1,795	1,727			1,615	1,236	186	295	1,578	452		1,255
2003	1,236	2,628	654	94	3,514	1,493	1,242	528	844		1,095	810	1,391
2004	4,653	6,801	5,157	1,196	5,569	1,868	2,177	306	293	4,842	670	918	1,138
2005		5,059	2,206	672		1,944	4,097	268	582	2,795	788	1,155	1,809
2006			4,734		5,639	1,618		365	386	3,924	531	1,015	928
2007			692	173	3,984	2,147	1,458	146			1,035		1,014
2008		487	1,074		3,222	1,061	589	190	213	832	177	290	1,305
2009								390	379		303	323	632
2010			235					108		587	62		135
2011[a]	249		534			116	79	20	26		96	249	767
10-year average (2001-2010)	2,945	3,354	2,060	534	4,386	1,678	1,628	276	397	2,241	526	752	1,064
SEG		580-1,800	400-1,200		1,200-2,300		330-1,200			970-2,100	300-830	340-1,300	470-1,600

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Appendix G2.–Chinook salmon weir escapement counts in Kuskokwim River spawning tributaries, 1980–2011.

Year	Kwethluk weir	Tuluksak weir	George weir	Kogrukluk weir	Tatlawiksuk weir	Takotna weir
1980						
1981				16,655		
1982				10,993		
1983				3,009		
1984				4,928		
1985				4,619		
1986				5,038		
1987						
1988				8,505		
1989				11,940		
1990				10,218		
1991		697		7,850		
1992	9,675	1,083		6,755		
1993		2,218		12,332		
1994		2,917		15,227		
1995				20,630		
1996	7,415		7,716	14,199		422
1997	10,395		7,823	13,286		1,161
1998				12,107		
1999			3,548	5,570	1,490	
2000	3,547		2,960	3,310	817	345
2001		997	3,309	9,298	2,010	721
2002	8,502	1,346	2,444	10,104	2,237	316
2003	14,474	1,064	4,693	11,771	1,683	378
2004	28,605	1,475	5,207	19,503	2,833	461
2005		2,653	3,845	21,993	2,918	499
2006	17,619	1,044	4,357	19,414	1,700	539
2007	13,267	374	4,883	13,029	2,061	418
2008	5,312	665	2,698	9,730	1,071	413
2009	5,710	404	3,663	9,702	1,071	311
2010	1,693	201	1,500	5,690	567	178
2011[a]	4,079	288	1,571	6,891	1,012	136
10-year average (2001-2010)	11,898	1,022	3,660	13,023	1,815	423
SEG	6,000-11,000	1,000-2,100	3,100-7,900	5,300-14,000		

[a] 2011 weir escapements are preliminary and subject to revision.

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Appendix G3.–Kuskokwim River sockeye salmon escapement estimates, 1976–2011.

Year	Kwethluk weir	Tuluksak weir	George weir	Kogrukluk weir	Tatlawiksuk weir	Takotna weir
1976				2,326		
1977				1,637		
1978				1,670		
1979				2,628		
1980					[a]	
1981				18,066		
1982				17,297		
1983				1,176		
1984				4,133		
1985				4,359		
1986				4,244		
1987					[a]	
1988				4,397		
1989				5,811		
1990				8,406		
1991		697		16,455		
1992	1,316	1,083		7,540		
1993		2,218		29,358		
1994		2,917		14,192		
1995				10,996		[a]
1996	1,801		[a]	15,385		0
1997	1,374		445	13,078		0
1998	[a]		[a]	16,773	[a]	[a]
1999	[a]		[a]	5,864	6	[a]
2000	358		22	2,867	0	3
2001	[a]	997	24	8,773	3	1
2002	272	1,346	17	4,050	1	1
2003	2,928	1,064	11	9,138	[a]	3
2004	3,302	1,479	174	6,671	10	17
2005	[a]	2,663	270	37,960	77	34
2006	6,732	985	164	60,807	41	59
2007	5,262	352	74	16,525	27	13
2008	2,451	188	94	19,675	39	12
2009	4,230	686	54	23,785	39	3
2010	4,238	437	115	13,995	33	8
2011[b]	2,031	126	43	8,132	23	1
10-year average (2001-2010)	3,677	938	100	20,138	30	15
SEG				4,400-17,000 [c]		

[a] Field operations incomplete; annual escapement was not determined.

[b] 2011 weir escapements estimates are preliminary and subject to revisions.

Appendix G4.–Kuskokwim River chum salmon escapement estimates, 1976–2011.

Year	Kwethluk weir	Tuluksak weir	Aniak sonar[a]	Kogrukluk weir	George weir	Tatlawiksuk weir	Takotna weir
1976				8,177			
1977				19,443			
1978				48,125			
1979				18,198			
1980			1,600,032		[b]		
1981			649,849	57,365			
1982			529,758	64,063			
1983			166,452	9,407			
1984			317,688	41,484			
1985			273,306	15,005			
1986			219,770	14,693			
1987			204,834		[b]		
1988			485,077	39,540			
1989			295,993	39,549			
1990			246,813	26,765			
1991		7,675	366,687	24,188			
1992	30,595	11,183	87,467	34,105			
1993		13,804	15,278	31,899			
1994		15,724	474,356	46,635			
1995				[b] 31,265			
1996	26,049		402,195	48,495	19,393		2,872
1997	10,659		289,654	7,958	5,907		1,779
1998	[b]		351,792	36,442	[b]	[b]	
1999	[b]		214,429	13,820	11,552	9,599	
2000	11,691		177,384	11,491	3,492	7,044	1,254
2001	[b]	19,321	408,830	30,569	11,601	23,718	5,414
2002	35,854	9,958	472,346	51,570	6,543	24,542	4,399
2003	41,812	11,724	477,544	23,413	33,666	[b]	3,388
2004	38,646	11,796	672,931	24,201	14,409	21,245	1,633
2005	[b]	35,696	1,151,505	197,723	14,828	55,720	6,488
2006	47,490	25,650	1,108,626	180,594	41,467	32,301	12,651
2007	54,913	17,286	696,801	49,505	55,842	83,246	8,873
2008	20,030	12,550	427,911	44,978	29,978	30,896	5,704
2009	32,191	13,671	479,531	84,940	7,941	19,975	2,528
2010	19,233	13,042	429,643	63,583	26,154	36,701	4,057
2011[c]	18,329	9,828	345,630	76,384	44,640	84,202	8,414
10-year average (2001-2010)	36,271	17,069	632,567	75,108	24,243	36,483	5,514
SEG			220,000-480,000	15,000-49,000			

[a] Sonar counts are unapportioned and considered to consist primarily of chum salmon.

[b] Field operations incomplete; annual escapement was not determined.

[c] 2011 weir escapements estimates are preliminary and subject to revisions.

Appendix G5.–Kuskokwim River coho salmon escapement estimates, 1981–2011.

Year	Kwethluk weir	Tuluksak weir	George weir	Kogrukluk weir	Tatlawiksuk weir	Takotna weir
1981				11,455		
1982				37,796		
1983				8,538		
1984				27,595		
1985				16,441		
1986				22,506		
1987				22,821		
1988				13,512		
1989				[a]		
1990				6,132		
1991		4,651		9,964		
1992	45,605	7,501		26,057		
1993		8,328		20,517		
1994		7,952		34,695		
1995				27,861		[a]
1996			[a]	50,555		[a]
1997			9,210	12,237		[a]
1998	[a]		[a]	24,348	[a]	[a]
1999	[a]		8,914	12,609	3,455	[a]
2000	25,610		11,262	33,135	0	3,944
2001	21,596	23,768	14,398	19,387	10,539	2,606
2002	23,298	11,487	6,759	14,516	11,345	3,982
2003	107,789	39,627	31,925	74,754	[a]	7,146
2004	64,216	20,336	12,522	26,993	16,410	3,201
2005	[a]	11,324	8,187	24,113	7,495	2,209
2006	25,664	5,438	11,296	17,011	9,453	[a] 5,556
2007	20,257	2,807	29,317	27,033	8,685	2,837
2008	49,971	7,457	21,931	29,661	11,065	2,807
2009	21,911	8,137	12,464	22,981	10,148	2,704
2010	[a]	1,216	12,961	13,971	3,520	3,217
2011[b]	4,482	92	30,028	24,174	12,928	4,063
10-year average (2001-2010)	37,687	11,972	16,176	27,042	9,851	3,627
SEG	<19,000[c]			13,000-28,000		

[a] Field operations incomplete; annual escapement was not determined.

[b] 2011 weir escapements estimates are preliminary and subject to revisions.

[c] Formally established SEG (ADF&G 2010).