Fishery Management Report No. 11-23

2010 Bristol Bay Area Annual Management Report

by

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

Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the Système International d'Unités (SI), are used without definition in the following reports by the Divisions of Sport Fish and of Commercial Fisheries: Fishery Manuscripts, Fishery Data Series Reports, Fishery Management Reports, and Special Publications. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

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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by

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The Fishery Management Reports series was established in 1989 by the Division of Sport Fish for the publication of an overview of management activities and goals in a specific geographic area, and became a joint divisional series in 2004 with the Division of Commercial Fisheries. Fishery Management Reports are intended for fishery and other technical professionals, as well as lay persons. Fishery Management Reports are available through the Alaska State Library and on the Internet: http://www.sf.adfg.state.ak.us/statewide/divreports/html/intersearch.cfm. This publication has undergone regional peer review.

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ABSTRACT

The 2010 Bristol Bay Area Management Report is the 49th consecutive annual volume reporting on management activities of the Alaska Department of Fish and Game, Division of Commercial Fisheries staff in Bristol Bay. The report emphasizes a descriptive account of the information, decisions, and rationale used to manage the annual Bristol Bay commercial salmon (sockeye *Oncorhynchus nerka*, Chinook *O. tshawytscha*, chum *O. keta*, pink *O. gorbuscha*, and coho *O. kisutch*) and Pacific herring (*Clupea pallasi)* fisheries, and outlines basic management objectives and procedures. We have included all information deemed necessary to fully explain the rationale behind management decisions formulated in 2010. The narrative is constructed beginning with a broad historical perspective followed by annual detail of individual districts. All narrative and data tabulations in this volume are combined in two sections, salmon followed by herring, to aid in the use of this document as a reference source. For long term context, historical data are compiled into appendices following the same format; salmon followed by herring. The extensive set of tables has been updated to record previously unlisted data for easy reference. Fisheries data in this report supersedes information in previous reports. All 2010 harvest data is considered preliminary pending processing of fish tickets. Readers should note that harvest and escapement data are routinely presented throughout the narrative in rounded form for simplicity. Corrections or comments should be directed to the Anchorage office. Attention: Editor Paul Salomone, Eastside Area Management Biologist, 333 Raspberry Rd. Anchorage, AK. 99518.

Key words: Bristol Bay, Naknek, Kvichak, Egegik, Ugashik, Wood, Nushagak, Igushik, Togiak, management, commercial fisheries, Pacific herring, *Clupea pallasi*, sockeye salmon, *Oncorhynchus nerka*, Chinook salmon, *O. tshawytscha*, chum salmon, *O. keta*, coho salmon, *O. kisutch*, pink salmon, *O. gorbuscha*.

INTRODUCTION

MANAGEMENT AREA DESCRIPTION

The Bristol Bay management area includes all coastal and inland waters east of a line from Cape Newenham to Cape Menshikof (Figure 1). The area includes 9 major river systems: Naknek, Kvichak, Alagnak, Egegik, Ugashik, Wood, Nushagak, Igushik, and Togiak. Collectively, these rivers are home to the largest commercial sockeye salmon fishery, *(Oncorhynchus nerka),* in the world. Sockeye salmon are by far the most abundant salmon species that return to Bristol Bay each year, but Chinook *O. tshawytscha*, chum *O. keta*, coho *O. kisutch*, and (in even-years) pink salmon *O. gorbuscha* returns are important to the fishery as well. The Bristol Bay area is divided into 5 management districts (Naknek-Kvichak, Egegik, Ugashik, Nushagak, and Togiak) that correspond to the major river drainages. The management objective for each river is to achieve escapements within established ranges for the major salmon species while harvesting fish in excess of those ranges through orderly fisheries. In addition, regulatory management plans have been adopted for individual species in certain districts.

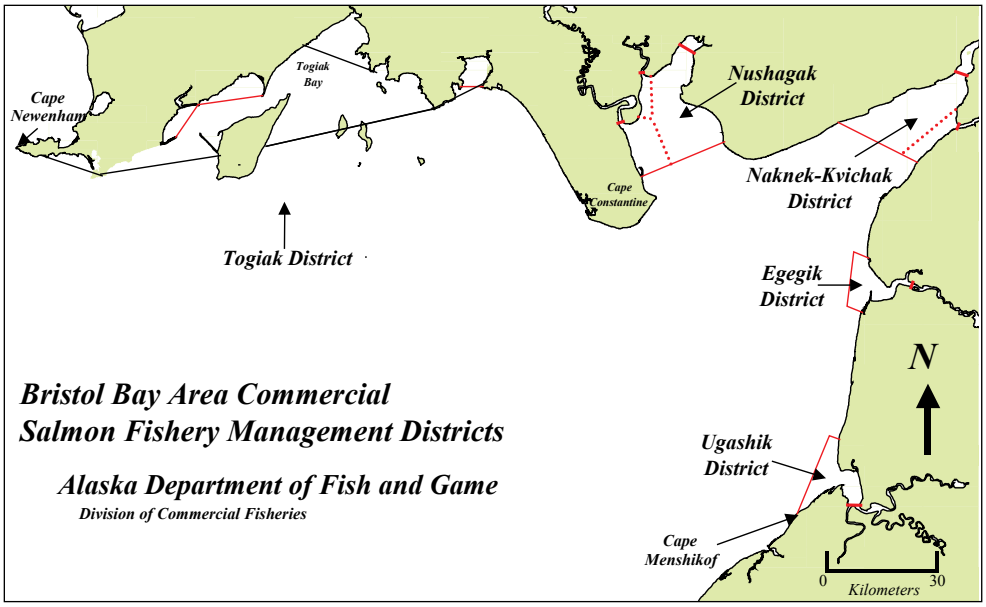

Figure 1.–Bristol Bay area commercial fisheries salmon management districts.

OVERVIEW OF BRISTOL BAY SALMON FISHERIES

The 5 species of Pacific salmon found in Bristol Bay are the focus of major commercial, subsistence, and sport fisheries. Annual commercial catches for the most recent 20-year span (1990–2009) average 25.8 million sockeye, 64,000 Chinook, 1.3 million chum, 88,000 coho, and 182,000 (even-years only) pink salmon (Appendices A3–A7). Since 1990, the value of the commercial salmon harvest in Bristol Bay has averaged $116.7 million, with sockeye salmon being the most valuable, worth an average $114.7 million (Appendix A25). Subsistence catches are comprised primarily of sockeye salmon and average 141,000 fish (Appendix A27). Sport fisheries harvest all species of salmon, with most effort directed toward Chinook and coho salmon stocks.

Management of the commercial fishery in Bristol Bay is focused on discrete stocks with harvests directed at terminal areas around the mouths of major river systems. Each stock is managed to achieve a spawning escapement goal based on sustained yield. Escapement goals are achieved by regulating fishing time and area by emergency order (EO) and/or adjusting weekly fishing schedules. Legal gear for the commercial salmon fishery includes both drift (150 fathoms) and set (50 fathoms) gillnets. However, the Alaska Board of Fisheries (BOF) passed a regulation in 2003 allowing for two drift permit holders to concurrently fish from the same vessel and jointly operate up to 200 fathoms of drift gillnet gear. In 2009 this regulation was modified so that it does not apply when the Naknek Special Harvest Area is in use. Also in 2009, a regulation was adopted that allowed set gillnet permit holders to own and operate two permits with associated legal amounts of gear. Drift gillnet permits are the most numerous at 1,863 in Bristol Bay (Area T), and of those, 1,731 fished in 2010. There are a total of 983 set gillnet permits in Bristol Bay and of those, 861 fished in 2010 (Appendix A2).

2010 COMMERCIAL SALMON FISHERY

RUN STRENGTH INDICATORS

Fishery managers in Bristol Bay have several early indicators of sockeye salmon run size, including the preseason forecast, the False Pass commercial fishery, an offshore test fishery operating from Port Moller, individual district test fishery programs, and the early performance of the commercial fishery. These pieces of information may not give a correct assessment of run size but collectively, they form patterns such as relative strengths of year classes, discrepancies from the forecast (relative to expected year class contributions), or differences in run timing that can be important to successful management of the commercial fishery.

PRESEASON FORECASTS

Total inshore sockeye salmon production for Bristol Bay in 2010 was forecast to be 39.8 million (Table 1). The Bristol Bay sockeye salmon harvest was predicted to reach 30.5 million fish. Runs were expected to meet spawning escapement goals for all river systems in Bristol Bay.

The forecast for the sockeye salmon run to Bristol Bay in 2010 was the sum of individual predictions for 9 river systems (Kvichak, Alagnak, Naknek, Egegik, Ugashik, Wood, Igushik, Nushagak-Mulchatna, and Togiak) and 4 major age classes (ages 1.2, 1.3, 2.2, and 2.3, plus ages 0.3 and 1.4 for Nushagak) (Table 2). Adult escapement and return data from brood years 1977 to 2005 were used in the analyses.

Predictions for each age class returning to a river system were calculated from models based on the relationship between adult returns and spawners, or siblings, from previous years. Tested models included simple linear regression and recent year averages. In addition, univariate and multivariate time series analysis models were examined. The models chosen were those with statistically significant parameters having the greatest past reliability (accuracy and precision) based on mean absolute deviation, mean absolute percent error, and mean percent error between forecasts and actual returns for the years 2007 through 2009.

SOUTH UNIMAK/SHUMAGIN ISLANDS FISHERY

These fisheries were managed under a guideline harvest (quota) specified in 5 AAC 09.365, the South Unimak/Shumagin Islands June Fishery Management Plan initially adopted in 1974 by the Alaska Board of Fisheries. The original intent was to prevent overharvest of sockeye salmon runs bound for river systems in Bristol Bay. In 2001, the BOF reviewed the management plan and concluded that because the fishery was based on interception of stocks bound for Bristol Bay and Arctic-Yukon-Kuskokwim regions, it should be restricted. These restrictions were as follows: from June 10 to June 24 such that: commercial fishing periods may occur only from 6:00 a.m. to 10:00 p.m. and may not be open for more than (A) 3 days in any 7-day period, (B) 16-hours per day; (C) 48-hours in any 7-day period; (D) 2 consecutive 16-hour fishing periods in any 7-day period. The BOF removed previous regulations based on a chum salmon cap and a percentage of the Bristol Bay preseason sockeye salmon forecast.

Preliminary catch information for 2010 indicates that the June Shumagin Islands fishery landed 331,000 sockeye salmon, and the June South Unimak fishery landed 488,000 sockeye salmon (Appendix A26). The June South Unimak sockeye and chum salmon harvests were 47% below and 60% below the 20-year average, respectively. In the June Shumagin Islands fishery, sockeye

salmon harvest was 26% less than the 20-year average and chum salmon harvest was 1% less than the 20-year average. This equates to an overall sockeye salmon harvest 40% below the 20-year average and a chum salmon harvest 35% below the 20-year average.

PORT MOLLER TEST FISHERY

From 1967 to 1985, the Alaska Department of Fish and Game (ADF&G) operated a test fishery program based near the community of Port Moller. A large vessel fished gillnets at specific coordinates on transect lines perpendicular to the migration path of sockeye salmon returning to Bristol Bay. Collected data was used to estimate strength, timing, age, and size composition of the run. Although forecasting performance of the project was often inaccurate, the project was very popular with salmon processors because it gave an additional indication of run size, which influenced production capacity and price paid to fishermen. The project did not operate in 1986, but through voluntary funding from industry and support from ADF&G and the Fisheries Research Institute (FRI), the Port Moller test fishery project operated from 1987 through 2003. Beginning in 2004, the FRI contribution to the project was replaced by Bristol Bay Science and Research Institute (BBSRI), which operated the project and performed the bulk of daily inseason analysis.

GENETICS

Over the last 11 years, ADF&G has built and tested a genetic baseline capable of identifying stock compositions of mixed-fishery samples from within Bristol Bay. The genetics program has two primary objectives: 1) Provide managers with an advanced estimate of stock compositions of fish returning to Bristol Bay through the Port Moller test fishery; and 2) Provide researchers with stock composition estimates by year within fishing districts for potential use in the development of brood tables. It is important to note that multiple-years of data will need to be collected before within- and between-year variation can be assessed. Only after that analysis has been completed can migration patterns among fishing districts be examined.

Genetic sampling was added to the Port Moller test fishery project starting in 2004 and continued through 2010. The intent was to use inseason genetic analysis to identify components of the annual run in time to assist management decisions for individual stocks. ADF&G genetics staff has the ability to complete analysis and deliver results in 3 to 5 days depending on several factors (e.g. timing of airline flights, weather on the fishing grounds, etc.). The travel time for fish from Port Moller to Bristol Bay is approximately 7 days depending on several factors (e.g. water temperature, wind, etc). Therefore, results from genetic sampling should be available before those fish reach the fishing districts of Bristol Bay.

ECONOMICS AND MARKET PRODUCTION

In 2010, exvessel value of the inshore commercial salmon harvest was estimated at $153.1 million. The 2000 to 2009 average exvessel value of Bristol Bay commercial salmon fisheries was $84.1 million (Appendix A25).

During the 2010 season, 6 companies canned, 23 companies exported fresh product, 27 companies froze, and 3 companies cured salmon in Bristol Bay. In addition, 27 companies exported fish by air. A total of 36 processors/buyers reported that they processed fish from Bristol Bay in 2010 (Table 25).

RUN AND HARVEST PERFORMANCE BY SPECIES

Sockeye Salmon

The 2010 inshore sockeye salmon run of approximately 40.2 million fish exceeded the preseason forecast of 39.8 million (Tables 1 and 4). Run performance by river system varied in relation to forecasts, but aggregate runs were above forecast in all districts except Egegik and Togiak. Sockeye salmon dominated the inshore commercial harvest, totaling 28.6 million fish (Table 18). Sockeye salmon escapement goals were met or exceeded in all systems where spawning requirements have been defined.

Chinook Salmon

Chinook salmon harvests in 2010 were below the recent 20-year averages in all districts. The 2010 baywide commercial harvest of 31,000 Chinook salmon was well below the 20-year average of 64,000 fish. The largest producer of Chinook salmon in the Bay, the Nushagak District, achieved a harvest of 26,000 compared to the 20-year average of 53,000 fish (Appendix A4).

Chum Salmon

In 2010, the commercial harvest of 1.1 million chum salmon was 17% less than the 20-year average of 1.3 million fish. Chum salmon catches were below 20-year averages in all districts except Naknek/Kvichak and Ugashik (Appendix A5).

Pink Salmon

Bristol Bay has a dominant even-year pink salmon cycle, but in recent years there has been little interest from processors. In 2010 market interest increased, especially in Nushagak District, resulting in a harvest of 1.3 million fish. The recent 20-year average (using only even years) is 182,000 fish (Appendix A6).

Coho Salmon

The 2010 baywide coho salmon commercial harvest of 104,000 was above the recent 20-year average of 88,000 fish (Appendix A7).

SEASON SUMMARY BY DISTRICT

Naknek/Kvichak

The 2010 forecast for the Naknek/Kvichak District projected a total run of 13.0 million sockeye salmon; 4.0 million for escapement and 9.0 million for harvest (Table 1). The forecast by river system was 3.8 million for Kvichak River, 1.8 million for Alagnak River, and 7.4 million for Naknek River (Table 2). Escapement goals by river system were as follows: 1) minimum 2.0 million for Kvichak River, 2) minimum 320,000 for Alagnak River and 3) a range of 800,000 to 1.4 million for Naknek River. The actual total inshore run to the district for 2010 was 17.5 million sockeye salmon. Commercial catch was 10.7 million sockeye salmon. The Naknek River Special Harvest Area (NRSHA) did not open in 2010.

ADF&G does not forecast Chinook, chum, coho, or pink salmon for systems in Naknek/Kvichak District. Commercial harvest of Chinook salmon has remained relatively small due to current mesh size restrictions that have been in effect since the early 1990s. Mesh restrictions are set by EO and prohibit gillnets with a mesh size larger than 5.5 inches until July 23 (Table 8).

For the commercial fishery to begin in the full Naknek/Kvichak District, the preseason sockeye salmon forecast for the Kvichak River must be 30% greater than the minimum sustainable escapement goal (SEG). Should the forecast be below that level, fishing will begin in special harvest areas of Naknek, Egegik and Ugashik rivers (5 AAC 06.360 (h)). Based on the 2010 sockeye salmon forecast for the Kvichak River, these restrictions were not implemented on June 1. However, fishing with drift gillnets was restricted to the Naknek Section when the fishery first opened while the set gillnet fleet was allowed to fish the whole district. Fishing periods during the first 3 weeks of June were from 9:00 a.m. Monday to 9:00 a.m. Friday, beginning 9:00 a.m. Tuesday, June 1 and ending 9:00 a.m. Wednesday, June 23.

The Naknek-Kvichak District opened at 9:00 a.m. Monday, June 1, with the first deliveries occurring June 15 (Table 9). During the week of June 14, a total of 1,359 sockeye salmon were harvested. During the 48-hour period that began at 9:00 a.m. Monday, June 21, a total of 73,000 sockeye salmon were harvested. Following the closure at 9:00 a.m. June 23, subsequent fishing periods were based on escapement into Naknek River.

Escapement counting towers for Naknek, Kvichak, and Alagnak rivers were all operational during the 2010 season. The Naknek River tower began counting on June 20 and Kvichak and Alagnak River towers were operational on June 21 (Table 19). Escapement objectives were met or exceeded in all 3 systems. At the end of the weekly fishing schedule on June 23, sockeye salmon passage rates were slightly less than anticipated for Naknek River based on historical run timing curves. Expected escapement through June 23 for Naknek River was 11,000 sockeye salmon while actual escapement past the tower was 10,000 fish. For Kvichak River, only 108 sockeye salmon had passed the tower through June 23 and even fewer for the Alagnak River. With escapement to the Naknek River close to projected levels, a commercial fishing period was scheduled for June 24, and again only set gillnets were allowed to fish in the Kvichak Section. Daily escapement rates past Naknek tower continued at expected levels, thus a continuation of one fishing period per day occurred through June 26. Harvest for the three periods from June 24 through June 26 was 33,000, 46,000 and 156,000 sockeye salmon.

Sockeye salmon escapement to Kvichak River remained below anticipated levels and was more than one day behind historical escapement curves on June 27. When this occurs, Naknek-Kvichak District closes and special harvest areas open to commercial fishing in order to minimize harvest of Kvichak bound sockeye salmon. By June 27, projected cumulative escapement past the Kvichak tower was 27,000 while actual escapement past the tower through midnight June 27 was 1,842 fish. However, genetic information collected from the Port Moller test fishery indicated a greater than forecasted run to Kvichak River. Based on the genetic information, the district remained open with the drift gillnet fleet still confined to the Naknek Section.

During the week of June 27, commercial harvest by day varied significantly from a high of 500,000 on June 27 to a low of 140,000 on June 30. Fishing throughout the week included both tides each day with continued restrictions for drift gillnet permit holders to Naknek Section. By July 3, escapement to the Kvichak River was 343,000 sockeye salmon; based on normal run timing an escapement of 922,000 fish was anticipated. Genetic information from the Port Moller test fishery, which began on June 10, indicated from the beginning a greater than forecasted run to Kvichak River was likely.

During the week of July 4, harvest and escapement increased considerably with minimum escapement goals met in both the Naknek and Alagnak rivers. Slightly more than 51% of the cumulative escapement to the three systems of Naknek-Kvichak District occurred during that week. Slightly more than 41% of harvest occurred during the same period. As in the previous week, both tides were fished each day with several days approaching 20 hours of fishing time. On July 9 the minimum escapement goal of 2.0 million sockeye had passed Kvichak River tower. The Kvichak River is the only system in Bristol Bay with an escapement goal that is adjusted inseason according to run strength. With a significantly larger run than the preseason projection of 3.8 million sockeye, on July 10 an inseason run projection of 7.0 million sockeye salmon was estimated. With this change in total run, the escapement goal was increased to 3.5 million sockeye salmon.

The area open for drift gillnet fishing was expanded to the entire Naknek/Kvichak District at 9:00 a.m. Sunday, July 11 and remained open to drift gillnet gear for the rest of the season. An aerial survey estimate of nearly 1.5 million fish on July 12 in the Kvichak River below the counting towers pushed total escapement to over 4.0 million sockeye salmon. This information was announced at 6:00 p.m. July 12, and by regulation, the 48-hour waiting period to transfer into Naknek/Kvichak District was waived immediately. The Naknek/Kvichak District opened until further notice to both drift and set gillnet gear from 1:30 p.m. July 14 until 9:00 a.m. Friday July 23. On July 26, the district went on the fall schedule of 9:00 a.m. Monday to 9:00 a.m. Friday until September 30, when it closed for the 2010 season.

The total harvest in Naknek/Kvichak District was 10,659,115 sockeye salmon, more than the 10-year average of 6.1 million (Appendix A3). The Chinook salmon total harvest was 369 (Appendix A4), which is less than 10-year average of 1,230 fish. The chum salmon harvest totaled 330,342, which is more than 10-year average of 171,000 fish (Appendix A5). There was a reported commercial harvest of 8,237 pink salmon and 1,006 coho salmon (Appendices A6 and A7).

Egegik District

With an inshore total of 5.9 million sockeye salmon to the Egegik District, the 2010 run ranks sixteenth over the most recent 20 years and was 45% below the forecast of 10.6 million fish (Appendix A13). The most recent 20-year average for the Egegik run was 10.3 million sockeye salmon. The harvest of 5.0 million fish ranks sixteenth for the most recent 20-year period (Appendix A13). The escapement of 927,000 fish was within the SEG range of 800,000 to 1.4 million (Appendix A1).

The midpoint of the Egegik District sockeye salmon run coincided with the most recent 20-year (1990–2009) average of July 4. Based on colder than average ocean water temperatures, inseason expectations were for run timing that was later than average. This did not prove to be the case for Egegik.

The 2010 preseason projection for a Kvichak River run at least 30% greater than the minimum escapement of 2.0 million sockeye salmon allowed commercial fishing to begin in the full Egegik District. The 2010 projected Egegik District harvest of 9.2 million sockeye salmon was 30% of the predicted total Bristol Bay harvest of 30.5 million fish (Table 1).

Egegik District opened to commercial salmon fishing on June 1. Recently, fishing has been managed by use of a 3 day per week schedule early in the season. However, because the 2008

Bristol Bay run was expected to be large, the schedule was expanded to 4 days per week for the first 2 weeks of June (9:00 a.m. Monday to 9:00 a.m. Friday). This expanded early schedule was continued in 2010.

The schedule was in place until Tuesday June 15, with first landings occurring June 9 (Table 10). Run assessment information on Friday June 11 indicated low abundance within the district which remained closed over the weekend of June 12–13.

Daily inriver test fishing, which provides estimates of sockeye salmon passage into the lower Egegik River, began on June 15 at established sites just upstream of Wolverine Creek. The Egegik River counting tower, which provides daily estimates of sockeye salmon passage into Becharof Lake, became operational at midnight on June 18 and finished the day with a passage estimate of 1,146 sockeye salmon (Table 23).

Management of the fishery switched to a tide by tide basis (active management) on June 16. A 9-hour period on the morning tide of Wednesday, June 16, produced a harvest of 11,000 sockeye salmon, indicative of low abundance within the district. Preseason management strategy was to allow fishing every other day for both gear groups while the run developed. This strategy allows permit holders an opportunity to fish early in the run while minimizing risk to escapement. Considering harvest on June 16, the alternate day fishing strategy was implemented with a 24-hour subsistence period beginning June 17 followed by a 9-hour commercial period on June 18. Catch on June 18 was 27,000 sockeye salmon, near the long-term average of 21,000 fish for the date but well short of the recent 10- and 20-year averages (both ~75,000).

Continuing with the alternate day schedule but recognizing low levels of abundance in the district were likely, the next period was scheduled for the night tide on June 20 for set gillnet gear only, followed by a period for both gear groups on the morning tide of June 21. The reason for back to back set gillnet openings was to guard against a large escapement on the subsequent tide. Combined catch on June 20 and 21 was 70,000 and cumulative escapement was 7,740 fish. Although this was less than the anticipated escapement, it was too early in the run for the information to be significant. On the evening of June 20, inriver test fishery indices increased suggesting an increase in abundance within the district, but keeping with the alternate day strategy, the district stayed closed on June 22.

On June 23, a 4-hour drift/8-hour set gillnet opening produced a catch of 104,000 fish. The increase in test fish indices and catches once again were within expected ranges for the early part of the season.

Early season indicators continued to follow expected patterns until June 29. On June 25, harvest was 259,000 fish and on June 26 harvest increased to 405,000 fish; both periods were 4-hour drift/8-hour set gillnet opportunities. Average harvest from June 25 to 28 was 258,000 fish (with two days over 400,000) while escapements were also increasing. Management strategy was to allow fishing on a daily basis with short openers for the drift gillnet fleet (4 to 5 hours) beginning one hour after the set gillnet fleet (8 hours) to provide fish additional opportunity to escape the fishery. However, low flow and water temperature difference between river (mid 50s^{o}F) and estuary (low 40s^{o}F) may have delayed fish movement into the river. Upriver set gillnet fishermen commented on the number of backout fish being caught in their nets during this time period, suggesting that while fish were getting past the majority of the fleet they were not committing to the river and were being caught while going back downstream.

On June 28, inriver test fishing indices were the largest of the season to date. Escapement improved over the next 2 days but actual counts were still less than the anticipated daily counts. Cumulative escapement was 180,000 fish through July 1, or approximately 2 to 3 days behind the anticipated cumulative count for this date. Up to this point in the season, management allowed for both groups to fish one tide per day; 8-hours for set gillnets and a 4-hour flood tide only period for drift gillnet gear.

Catch on June 28 was 426,000 fish; the biggest of the season to date and still supportive of a normally timed run that was close to forecast. On June 29 harvest fell to 141,000 fish, and was less than 200,000 for the next 2 days.

Because escapement was lagging and catch volume dropped off appreciably, no commercial fishing occurred for 2 consecutive tides; on the evening of July 1 and the daytime tide July 2. Consecutive periods for both gear groups were allowed beginning with the evening tide on July 2. If the run was approaching forecast with average run timing, the break in fishing should have produced escapement in the range of 300,000 to 500,000 fish. Allowing both gear groups to fish consecutive tides immediately after the closure is a guarding strategy to avoid allowing a large escapement until assessment could be made of the escapement that occurred during the closure.

The closure produced an escapement of approximately 140,000 fish spread over 2 days. Harvest on July 3 was 536,000, illustrating the need for a guarding strategy. Escapement on July 2 was 7,578 fish but on July 3 increased to 70,000 and averaged over 75,000 for the following 3 days.

The catch on July 3 once again supported that the run was still close to forecast, but subsequent catches on July 4 and 5 were 290,000 and 112,000. If the run was as big as forecasted, catches on those dates should have been similar to that of July 3.

Cumulative escapement was 408,000 through July 5 and daily escapement counts for July 4 and 5, the historical peak of the Egegik run, were less than anticipated. Again it was necessary to close for 2 tides and then allow fishing for both gear groups to guard until assessment of the escapement could be made. Two-tide breaks occurred on July 6 and 10. Through July 10 cumulative escapement was approximately 662,000 fish and daily counts were still less than anticipated.

By July 12, having exhausted options to attain escapement, little choice was left but to close the fishery until escapement goals were met. Escapement averaged almost 50,000 for the next 4 days and the lower end of the escapement goal of 800,000 was surpassed on July 14 with a daily escapement of 88,000, the largest single day escapement for the year.

Fishing was reopened on the afternoon of July 16 and over the next 6 days 511,000 fish were harvested. Fishing was allowed continuously until Friday July 30.

The 2010 run was below forecast but exhibited nearly average run timing, with catches continuing into the third week of July. By the end of the EO period on July 17, the total harvest was 4,963,049 and cumulative escapement was 926,904 sockeye salmon.

According to regulation, the fall fishing schedule of 9:00 a.m. Monday to 9:00 a.m. Friday begins on July 17, but because of low abundance and effort, fishing was allowed to remain open continuously until 9:00 a.m. Friday, July 30. After a closure over the weekend of July 31 to August 1, the normal Monday to Friday schedule began at 9:00 a.m. Monday, August 2.

The 2010 Egegik sockeye salmon run was mostly 2- and 3-ocean fish, which came from the 2005 and 2006 escapements of 1.6 and 1.5 million fish, respectively. Commercial fishermen harvested approximately 84% of the Egegik inshore sockeye salmon run in 2010, which is the average for the most recent 20-year period. Peak tower counts occurred July 7 and July 14, when 83,000 and 88,000 sockeye salmon were counted, respectively. During the EO period from June 16 to July 17 in 2010, a total of 152.75 hours were fished by the drift gillnet group (166 hours less than 2009) and 232.25 hours were fished by the set gillnet gear group (191.5 hours less than in 2009), equating to 20% and 30%, respectively, of the 768 available hours. By the end of the EO period, harvest percentages were 84% drift and 16% set gillnet (Appendix A9). Allocation as specified in regulation is 86% drift and 14% set gillnet.

While the run did not meet preseason expectations, at nearly 6 million fish it is close to the long-term average for the district. The escapement achieved is notable because much of the escapement was pulsed and unfished and the latter part of the run was very well represented. Recently, escapement trends have tended toward significant escapement early in the run followed by hard fishing until the run is over. This strategy typically results in lower proportional harvest early in the run and proportionally higher harvest later in the run as managers put fish in the "bank" and then fish hard to keep escapements within the range. In 2010 the trend was reversed with a high exploitation rate early and relatively low exploitation rate later in the run as fishing time was adjusted inseason to levels of abundance.

Commercial harvest of other salmon species in the Egegik District was approximately 71,000 fish, or about 1.4% of the total. The reported Chinook salmon harvest was 56 fish, 94% below the 20-year average of 939 fish (Appendix A4). The district chum salmon harvest of 58,979 fish was 23% below the recent 20-year average of 79,000 fish (Appendix A5). The pink salmon harvest was reported as 1,655 fish. Historical pink salmon harvest information is presented in Appendix A6. The coho salmon harvest of 9,984 fish was 64% below the recent 20-year average (Appendix A7).

In summary, the 2010 harvest of 5.9 million sockeye salmon in the Egegik District ranks sixteenth out of the most recent 20 years, was 49% lower than the most recent 20-year average of 10.2 million fish, and was 45% below forecast. The fishery harvested 84% of the run into the district compared to the 20-year average of 84%. The midpoint of the run was July 4, which is the 20-year average. Peak effort occurred on June 27 when 447 drift gillnet vessels were registered to fish in the district (Table 8). There were 12 processors registered to purchase fish in the Egegik District this season (Table 25).

Ugashik District

The 2010 inshore sockeye salmon run to the Ugashik District of 4.8 million fish ranks ninth in the last 20 years (1990–2009) and was 7% above forecast (Table 1). The midpoint of the run was July 7, four days earlier than the most recent 20-year average of July 11. The commercial sockeye salmon catch of approximately 4.0 million fish was 50% above average and ranks fifth for the same period. Sockeye salmon escapement to the Ugashik River was 806,000 and within the escapement goal range of 500,000 to 1.2 million fish. For the first time in several years market availability was not an issue in the Ugashik District.

The district was opened to a fishing schedule of 4 days per week (9:00 a.m. Monday to 9:00 a.m. Friday) on June 1 by EO with initial landings June 14 (Table 11). Since the preseason forecast for the Kvichak River allowed all fishing districts to start the season in their full areas, the 4 day

per week schedule was continued until June 18, when fishery management switched to a tide by tide basis.

The preseason forecast for the Ugashik District projected a harvest of 3.5 million sockeye salmon. Accordingly, commercial fishermen were advised that fishing time after June 18 would depend on inriver test fishing results, tower escapement levels, and fishery performance.

Catch through June 18 was 8,282 fish, well below the historical average and indicative of low abundance within the district. With no escapement assessment and indicators suggesting low levels of abundance, further commercial fishing was not warranted and the district was opened to subsistence fishing only from 6:00 p.m. on June 18 until 12:00 p.m. June 20.

With low effort expected, an 8-hour period for both gear groups was announced for Monday, June 21. Commercial catch from the period was 12,000 fish from 81 drift and 8 set gillnet deliveries. This number of deliveries represents a strong level of effort for this portion of the season. The low level of harvest from this fleet size supported the assessment of low abundance.

With low levels of harvest on June 21 only subsistence fishing occurred on June 22. Similar to Egegik, the preseason strategy for the district was to allow fishing periods on alternating days until the run developed and keeping with that plan, an 8-hour period for both gear groups was announced for June 23. Catch from this period was 28,000 fish.

Initial information from the inriver test fishery became available on June 24 with low passage indices suggesting fish were not moving into the river in volume. Inriver test fishing, which occurs about 3 miles upstream of Ugashik Village, provided a daily estimate of sockeye salmon passage into the lower part of the Ugashik River. The counting tower project, operating about 24 miles upstream of Ugashik Village, started counting at midnight on July 1 and ended the day with an estimated passage of 9,096 fish (Table 24).

Through June 24, the catch from the commercial fishery continued to suggest low levels of abundance in the district. At the 2009 BOF meeting, a new regulation was adopted that allowed free transfer between eastside districts until June 25. Because of this, it was desirable to keep the openings in individual districts aligned concurrently to discourage the full mobility of the fleet between eastside districts with offset opening schedules. Since Egegik was open on June 24, a 6-hour period for both gear groups was allowed in Ugashik resulting in a catch of 12,000 fish.

Inriver test fishery indices were increasing slowly and some anecdotal reports from upriver residents suggested fish were already moving into Ugashik Lake in small numbers. This information prompted the announcement of an 8-hour drift/10-hour set gillnet period on June 25 which resulted in a harvest of 55,000 fish.

Indices in the inriver test fishery continued to increase on June 28 trending upward for several days. Based on the inriver test fishery, commercial fishing continued to be permitted on a one tide per day basis with harvests continuing to build. Through July 1, cumulative harvest was 890,000 fish. Cumulative escapement was 22,000 after just two days of counting at the tower site.

Escapement and inriver test fishery information indicated steady and moderate levels of passage into the Ugashik River at levels that allowed commercial fishing to continue at the one tide per day pace, but an unknown factor was travel time between the test fishery and the counting tower project. An aerial survey on July 1 with excellent conditions revealed an estimated 200,000 fish distributed from the mouth of Ugashik Lagoon several miles downstream. They were

progressing upriver slowly and it was eventually estimated that early season travel time was approximately 7 days; 3 to 5 days is more usual. With a week of escapement inriver and stable test fishery indices, fishing continued at a one tide per day pace until July 5 when the district was rested for the day. Cumulative catch through July 5 was approximately 1.4 million fish. Escapement was 71,000, and matched the historic curve with roughly a week of uncounted fish en route to the escapement project.

From June 28 to July 5 catches averaged 115,000 fish per opener and from July 1 to July 5 escapement averaged 14,000 fish per day.

Recognizing that travel time was unusually long, and considering that the test fishery was indicating consistent passage into the river, fishing continued on the one tide per day pace for the rest of the season with the exception of July 14, when the district was rested for a day to allow additional passage of fish. Escapement continued to climb as fish inriver moved past the escapement project. From July 5 to July 14 daily passage averaged 44,000 fish per day and by July 15 the minimum escapement of 500,000 fish was surpassed. During the same period commercial catch averaged 211,000 fish per day and by July 15 the cumulative catch was 3.3 million.

Sockeye salmon landings remained above 100,000 fish per opening until July 20 then decreased rapidly. The preliminary total harvest of all species was 4,062,478 fish (Table 11). The final Ugashik River sockeye salmon escapement was 805,686 fish when counting ended on July 27. This is within the escapement goal range of 500,000 to 1.2 million. Additionally, about 25,000 sockeye salmon were observed during postseason aerial surveys of the Ugashik system (Appendix A14).

By regulation, the fall fishing schedule of 9:00 a.m. Monday to 9:00 a.m. Friday is implemented on July 17. However, because of low abundance and effort, fishing was allowed on a continuous basis until 9:00 a.m. Friday July 30. Another regulation specific to Ugashik was adopted at the 2009 BOF meeting that adjusted the fall schedule in Ugashik to 9:00 a.m. Thursday to 9:00 a.m. Monday beginning August 1. The result was that after a one day break on July 31, the new fall schedule in Ugashik was implemented on Sunday, August 1, and continued for the rest of the season.

By the end of the EO period (July 17), set gillnet fishermen caught 10% of the sockeye salmon harvest and drift gillnet fishermen caught 90% (Appendix A9). The allocation specified in regulation is 10% set gillnet and 90% drift gillnet. Between June 23 and July 17, set gillnetters were permitted to fish a total of 273 hours, or 127.5 hours less fishing time than in 2009, while drift gillnetters were permitted to fish a total of 231 hours, or 139.5 hours less than in 2009.

Commercial harvest of other salmon species was approximately 69,000 or 1.7% of the total district harvest. The harvest of 314 Chinook salmon was 77% below the recent 20-year average of 1,402 (Appendix A4). Chinook escapement is assessed by aerial surveys in the Dog Salmon and King Salmon rivers, the major tributaries of the Ugashik River and biggest producers of this species in the district. In 2010, partial surveys were flown on August 3, 6, and 13 because of weather conditions with an observed escapement of 245 Chinook salmon. All of these surveys were likely past peak spawning for the year.

The chum salmon harvest of 68,617 fish was 6% above the 20-year average of 65,000 (Appendix A5). Chum salmon escapement was assessed on the same survey flights as Chinook salmon and hampered by the same conditions. Observed chum salmon escapement totaled 2,502 fish.

The coho salmon harvest of 467 fish was 95% below the 20-year average of 10,000 but there was very little directed commercial effort for Ugashik coho salmon in 2010 (Appendix A7). Weather conditions in 2010 precluded any aerial surveys for coho salmon so there was no assessment of coho escapement.

In summary, the 2010 Ugashik District fishery harvested approximately 83% of the sockeye salmon run to the district compared to the 20-year average exploitation rate of 68%. Days of peak catch occurred on July 9, 10, and 11 when 278,333, 259,941, and 331,418 fish were harvested, respectively. The midpoint of the run was July 7, four days early compared to the 20-year average of July 11. Days of peak escapement were July 13, 14, and 16, when 72,258, 72,192 and 75,942 sockeye salmon, respectively, passed the counting tower. Peak effort was on July 15 when 205 vessels with drift gillnet permits were registered to fish in the district. There were 13 buyers registered in the district during the season (Table 25).

Environmental Conditions

An unusual event occurred in the Mother Goose Lake drainage during the spring or early summer of 2005 which introduced acidic water into the drainage that lowered the pH enough to affect the ability of the system to support aquatic life. ADF&G has monitored the event via aerial surveys (Westing et al. 2006; Salomone et al. 2007; Sands et al. 2008; Morstad et al. 2010) with affects lessening but continuing into 2010.

Aerial surveys conducted in early August, were flown under mixed conditions. As a result information on escapement and distribution is of limited utility. Mother Goose Lake appeared "normal" in color, and plant growth that was present in the outlet in 2008 and 2009 remained and appeared to be more diverse.

No salmon were observed in Painter Creek, which formerly hosted a significant portion of the spawning Chinook salmon in the Ugashik District. The area between the confluences of Painter and Old Creeks with the King Salmon River was heavy with silt from high water, as were the lowest two tributaries of the King Salmon River, Old and Pumice Creeks.

Postseason information from a resident of the area provided better insight as to levels of escapement as well as distribution again in 2010. The resident described traveling the drainage and seeing fish distributed throughout, including sockeye salmon in Mother Goose Lake, a concentration of spawning chum salmon in the mainstem of King Salmon River and fish of mixed species in Painter Creek for the second consecutive year. The individual also reported bird use of Mother Goose Lake had risen. It is not certain at this time if this increased biodiversity can be attributed to seasonal rains diluting acidic water or if the geologic conditions causing the acidic water have abated. Regardless, it is encouraging to see the return of the biota to impacted areas.

Nushagak District

The 2010 Nushagak District total inshore sockeye salmon run was approximately 11.1 million fish, 5% over the preseason forecast of 10.6 million fish (Table 1). Commercial sockeye salmon harvest in Nushagak District reached 8.3 million, 1% below the preseason projected harvest of

8.4 million fish. Total escapement in the district's 3 major river systems was 2.8 million, which was above the combined escapement goal range of 1.2 million to 2.6 million. Chinook salmon escapement into Nushagak River was 36,625, 51% below the 75,000 inriver goal. Harvest was 25,580 Chinook salmon in Nushagak District.

Peak Chinook salmon production in the early 1980s resulted in record commercial harvests and growth of the sport fishery. Declining run sizes and the question of how to share the burden of conservation among users precipitated the development of a management plan for Nushagak Chinook salmon. Since the plan was adopted in 1992, the Nushagak-Mulchatna Chinook Salmon Management Plan (NMCSMP) has governed management of Nushagak Chinook salmon fisheries (5 AAC 06.361). The plan was amended in 1995, 1997, and 2003.

The purpose of this management plan is to ensure an adequate spawning escapement of Chinook salmon into the Nushagak River system. The plan directs ADF&G to manage the commercial fishery for an inriver goal of 75,000 Chinook salmon past the sonar site at Portage Creek. The inriver goal provides: (1) a biological escapement goal of 65,000 spawners, (2) a reasonable opportunity for inriver subsistence harvest, and (3) a guideline sport harvest of 5,000 fish. The plan addresses poor run scenarios by specifying management actions to be taken in commercial, sport, and subsistence fisheries, depending on the severity of the shortfall. Management decisions are heavily dependent upon the estimates of inriver Chinook salmon escapement provided by the sonar project located near Portage Creek on lower Nushagak River.

The 2010 Nushagak District Chinook salmon forecast was 117,000 fish. Considering escapement goals and upriver uses allowed under the management plan, 36,000 Chinook salmon would potentially be available for commercial harvest. In 2010, a meeting with stakeholders determined the fishing schedule prior to the season. The preset schedule allowed stakeholders to plan ahead for marketing purposes, while also allowing the schedule to be suspended if escapement was less than expected. The preseason schedule allowed for two 8-hour periods based on the preseason forecast and subsequent periods based on escapement. The first 2 openings occurred on June 7 and June 10, resulting in a total harvest of 103 Chinook salmon.

The sonar escapement enumeration project at Portage Creek was operational on June 5. Early Chinook salmon counts were below expectations and continued to be below the historical average until June 15 (Table 21). Two days of increased fish passage on June 15 and 16 brought cumulative escapement above the expected level. The increase in escapement was sufficient to warrant an additional directed Chinook salmon opening for 5 hours on June 17. Chinook salmon harvest from this period was 1,041 fish from 57 deliveries. By June 25 sockeye salmon abundance increased and management focus moved from Chinook to sockeye salmon. Total Chinook salmon harvest from three directed openings was 1,147 fish. An additional 24,000 Chinook salmon were harvested during directed sockeye openings bringing the preliminary Nushagak District 2010 Chinook salmon harvest to 25,580 fish (Table 12).

Final Chinook salmon escapement past the Nushagak River sonar station was 36,625 (Table 21). This was below the 40,000 minimum spawning escapement called for in the NMCSMP. The poor Chinook salmon escapement triggered the most severe restrictions called for in the management plan; closure of the sport fishery, while subsistence fishing in the Nushagak River drainage was reduced to 3 days per week until August 1 for the conservation of Chinook salmon.

The preseason forecast for the inshore sockeye salmon run to the Nushagak District totaled 10.6 million fish (Table 1), 34% greater than the 20-year average run of 7.9 million fish (Appendix

A16). The forecasted Wood River sockeye salmon run (6.2 million) was 29% above the 1990–2009 average run and the forecasted Nushagak River sockeye salmon run (2.3 million) was also expected to be 29% above the 20-year average actual run. The forecasted run to Igushik River (2.1 million) was 60% greater than the 1990–2009 average run of 1.3 million fish (Appendix A16).

On the morning of June 25, with increasing sockeye salmon escapement in the Wood River, an 8-hour set gillnet period was announced for the Nushagak Section from 12:00 p.m. until 8:00 p.m. Commercial fishing with drift gillnets was also opened for 4 hours. The cumulative escapement through June 25 was 168,000 fish.

While Wood River escapement was ahead of the historical run timing curve, sockeye salmon escapement into the Nushagak was behind historical curves. On July 5, projections for the Nushagak River fell below the 340,000 minimum escapement called for in the Wood River Sockeye Salmon Special Harvest Area management plan. Based on this information, ADF&G closed commercial fishing in the Nushagak Section of the Nushagak District and opened the Wood River Special Harvest Area (WRSHA) beginning at 7:00 a.m. July 6. Management strategy was to minimize low tide fishing and generally split fishing time around the high tide. In theory not fishing the first half of the flood tide should allow fish to push into the district and distribute.

With the Nushagak Section of the Nushagak District closed to commercial fishing, sockeye salmon escapement to the Nushagak River increased after a 24 hour lag. Sockeye escapement in the Nushagak on July 7 was 30,000, bringing the total to 203,000 salmon. Based on the estimates of additional fish en route to the escapement project as a result of the closure, fishing was reopened in the Nushagak Section of the commercial district at 11:00 p.m. July 8. By July 9, cumulative escapement at the sonar project was estimated at 320,000 sockeye and projecting to exceed the minimum goal of 340,000 salmon.

On July 8, when the Nushagak Section of the commercial district reopened, the WRSHA closed. The WRSHA was reopened, however, based on new regulations adopted during the 2009 BOF meeting (5 AAC 06.358.(c)(3) Wood River Sockeye Salmon Special Harvest Area Management Plan). Under this new provision, the department may open the WRSHA if the sockeye salmon escapement in the Wood River has exceeded 1.1 million and is projected to exceed 1.4 million. Through July 8, the Wood River sockeye salmon escapement was over 1.3 million. Fishing continued in the WRSHA to provide opportunity to harvest sockeye salmon that were past the main portion of the commercial district and surplus to escapement needs in the Wood River system. These special harvest area openings differed from those occurring July 6 to July 8 in that they were concurrent with Nushagak Section openings and the allocation plan did not apply.

After July 8, commercial fishing in the Nushagak District and WRSHA continued with openings of 6 to 8 hours per tide with an occasional tide off in the WRSHA as a consideration for quality of escapement in the Wood River and for the protection of Chinook salmon bound for the Muklung River. The set gillnet fishery in the Nushagak Section was extended until further notice on July 12 and the drift gillnet fishery was opened until further notice on July 15 (Tables 7 and 12).

Commercial fishing with set gillnet gear began in the Igushik Section of the Nushagak District on June 16, when a market became available. In recent years, with extended fishing time in the Nushagak Section, Igushik fish stocks have been subject to an uncertain degree of harvest during Nushagak Section drift gillnet openings. This may have played a part in some recent years of

poor escapement to the Igushik River. In 2010 however, there was a large forecast for sockeye salmon returning to the Igushik River. Based on the 2010 forecast of 2.1 million sockeye salmon, the Igushik Section set gillnet fishery was open for 8 hours per day. On June 28, total sockeye salmon escapement into the Igushik River was 3,000 through 6:00 a.m. On the morning of June 29, cumulative escapement through 6:00 a.m. had increased to 11,000 fish. Based on this increase, the set gillnet fishery opening in the Igushik Section was increased to 25 hours. On June 30, cumulative sockeye salmon escapement in the Igushik River was 81,000. As a result the set gillnet fishery was extended until further notice; drift gillnet fishing was allowed for 2 consecutive openings of 7 and 9 hours on July 1. By July 3, Igushik River cumulative sockeye escapement passed 205,000 salmon and the section opened to fishing with drift gillnets until further notice (Table 20).

The final Nushagak River sockeye salmon escapement was 468,696 fish. The escapement goal range for Nushagak sockeye salmon is 340,000 to 760,000 (Table 1). The final escapement in the Igushik River was 518,040 fish, exceeding the upper end of the escapement goal range of 300,000 for the sixth consecutive year (Appendix Table A1). The final escapement in the Wood River was 1.8 million, exceeding the 1.5 million upper end of the escapement goal range. The total Nushagak District sockeye salmon harvest for 2010 was 8.3 million and ranks as the third largest harvest since 1893.

The harvest percentages by gear group for sockeye salmon were 17% Nushagak Section set gillnet, 78% drift gillnet and 6% Igushik Section set gillnet. It should be noted that there was significant harvest by the drift gillnet fleet in the Igushik Section of the Nushagak District between July 6 and 8 when the Nushagak Section set gillnet fishery was closed. This contributed to the disparity between allocation and goals specified in regulation: 74% drift gillnet, 20% for Nushagak Section set gillnet and 6% Igushik Section set gillnet. The WRSHA harvest percentages where 71% drift and 29% set gillnet compared to 74% drift gillnet and 26% set gillnet percentages specified in regulation. Since the WRSHA was only open for five tides and there is a 24-hour lag in receiving harvest information, it was difficult to make any meaningful decisions to balance allocation in this short time period.

The Nushagak Coho Salmon Management Plan (5 AAC 06.368) established spawning and inriver escapement goals as well as providing guidance to ADF&G in managing, subsistence, commercial and sport fisheries that harvest coho salmon. The plan directs ADF&G to manage the commercial fishery in the Nushagak District to achieve an inriver escapement goal of 100,000 coho salmon in the Nushagak River. The inriver goal specified in the management plan provides for an escapement of 90,000 spawners and 10,000 additional fish for upriver sport and subsistence harvests. ADF&G no longer operates the sonar project on the Nushagak River for coho salmon enumeration. Although there is no forecast for coho salmon, even-year returns to the Nushagak District are historically much larger than odd-year returns. Similarly, pink salmon returns to the Nushagak District are also stronger in even years.

In the fall of 2009, processors expressed interest in buying pink salmon in the Nushagak District during the 2010 season. With no escapement enumeration and uncertain participation, ADF&G staff set a preliminary schedule based on stakeholder input. The preseason schedule called for commercial fishing 6 days per week for 15 hours each day. On alternate days, fishing gear would be restricted to pink salmon mesh (4.75 inches or smaller) for the conservation of coho salmon. The alternate gear openings would provide an opportunity to determine if the smaller

mesh resulted in lower coho salmon catches. Fishing time would be adjusted inseason based on effort and harvest.

The department's goal was to achieve escapement for coho and pink salmon while providing a harvest opportunity for fish surplus to escapement needs. Fishing was closed in the Nushagak District on July 24 and July 25 and the transition to pink and coho salmon management occurred on July 26. There was some concern about poor sport fishing for coho salmon in the Wood River but other reports indicated sport fishing for coho salmon was good despite high water on the Nushagak River. However, because of community concerns regarding coho salmon escapement, fishing time on unrestricted mesh days was reduced beginning July 29. With no measure of escapement available and high water preventing any meaningful aerial surveys, fishing time was reduced as the number of deliveries increased. On August 5, all future openings were restricted to 4.75 inch mesh or smaller and periods were limited to 10 hours per day. The final period occurred on August 10 for 8 hours.

The total pink salmon harvest was 1.3 million fish, 26 times more than the average harvest since 1990 and more than the total pink salmon harvest in the Nushagak District in the last 20 years combined (Appendix A6). The 69,186 coho salmon harvested in 2010 was double the latest 10-year average harvest of 39,000 (Appendix A7).

Togiak District

The 2010 inshore sockeye salmon run of 858,289 fish was the ninth largest run to Togiak District in the last 20 years (Appendix A17) and was 20% below the preseason forecast (Table 1). The harvest for the Togiak District was 669,991 sockeye salmon, the sixth largest since 1990. Escapement into Togiak Lake was 188,298 which is within the escapement goal range of 120,000 to 270,000 sockeye salmon.

Togiak District is managed differently than other districts in Bristol Bay. This district uses a fixed fishing schedule of 60 hours per week in Kulukak Section (reduced from 72 hours per week at the December 2009 BOF meeting), 4 days per week in Togiak River Section, and 5 days per week in Osviak, Matogak, and Cape Peirce Sections. This schedule is adjusted by emergency order, as necessary, to achieve desired escapement objectives. In addition, transferring into Togiak District is prohibited if the permit holder has fished in any of the other 4 Bristol Bay districts prior to July 27 (changed from July 24 at the December 2009 BOF meeting). Conversely, it prohibits permit holders that have fished in Togiak District from fishing in any other Bristol Bay district until July 27.

The 2010 inshore run to Togiak River was forecasted at 1.0 million sockeye salmon (Table 1), of which 80% were projected to be 3-ocean fish and the remaining 20% 2-ocean fish (Table 2). With an escapement goal range of 120,000 to 270,000 sockeye salmon for Togiak Lake, approximately 850,000 fish would potentially be available for harvest in Togiak River Section (Table 1). Smaller sockeye salmon runs to other drainages in the district (primarily the Kulukak River) occur, but these are not included in the preseason forecast because age composition and escapement data are not complete. Unofficially, a contribution of 50,000 sockeye salmon to district harvest was projected from drainages other than Togiak River.

Management strategy for Chinook salmon the last 9 years has been to reduce the weekly fishing schedule in sections of Togiak District during the last 2 weeks of June. Chinook salmon concerns around Bristol Bay and the state prompted a more conservative management approach

in 2010. The weekly fishing schedule in Togiak River Section was reduced by a combination of 24 and 48 hours in June for Chinook salmon conservation. Although Kulukak Section early season fishing schedule reductions have become common over the past several years to protect Chinook salmon, 2010 marked the first season with a reduced, 60-hour weekly Kulukak Section schedule in regulation, eliminating the need for reductions by EO. Western sections (Cape Peirce, Osviak, and Matogak) remained open for regularly scheduled periods.

Commercial fishing opened in Togiak District on June 1. However, first landings of the 2010 season were not made until June 21 (Table 14). Although the Togiak District Salmon Management Plan (TDSMP) provides for targeting Chinook salmon early, seasonal effort largely focuses on sockeye salmon. By June 30, district sockeye salmon harvest was 18,000 fish, near the 10-year average for this date.

With the reduced schedule in place commercial harvest and effort for this week was far below average with 263 Chinook salmon and 112 deliveries reported at close of fishing on June 24.

The fishery reopened on June 28 and was reduced by 48 hours in Togiak River Section for Chinook salmon conservation. Midnight, June 30 marked the end of active management for Chinook salmon and on Thursday, July 1, the focus shifted to sockeye salmon management. Cumulative Chinook salmon harvest through the week of June 28 was 540 fish.

Total Chinook salmon harvest for Togiak River Section was 4,684 fish (Table 14), with an additional 398 caught in the remainder of Togiak District (Table 15). The total number of Chinook salmon caught in Togiak District was 75% of the 10-year average. Weather and pilot availability issues prevented aerial surveys to assess escapement. Therefore, districtwide Chinook salmon escapement is not available (Appendix A20). As of this writing estimates are not yet available for sport or subsistence harvests.

Operation of Togiak River counting towers began on July 2 with a partial day count of 462 sockeye salmon. At this time, daily harvest increased but cumulative harvest remained below expected levels likely due to low early season participation. Daily harvests continued to increase and exceeded averages on July 7 through July 9, bringing the Togiak District total harvest to 181,000 sockeye salmon at the close of fishing for the week on July 10. Although relatively early in the season for Togiak District, cumulative escapement past the counting towers was below expected levels at 13,000 fish (Table 21), suggesting sockeye run timing might be 2 or 3 days late and/or that run strength might be weaker than forecast.

During the week of July 12, the second half of the 'peak season' fishing schedule, effort and harvest were slightly above average, bringing the cumulative harvest to 328,000 sockeye salmon at the close of fishing on July 16. Cumulative harvest and cumulative escapement, 54,000 fish, remained below preseason expectations. Participation continued to be above average and harvest increased to well above historical averages throughout the week of July 19. After July 21, cumulative escapement into Togiak Lake was 80,000 sockeye salmon, relatively close to the lower end of the escapement goal. Because this date is near the historical midpoint of the Togiak sockeye salmon run, escapement was at expected levels, and due to the strength of this portion of the run, Togiak River Section was extended for the maximum allowable time of 48 hours until July 25. Cumulative harvest was 527,000 and cumulative escapement was 115,000 salmon.

By regulation, Togiak District opens to all Bristol Bay Commercial Fisheries Entry Commission (CFEC) salmon permit holders on July 27. This marked the first season when the district was

not open to all Bristol Bay permit holders until July 27, instead of July 24 because of a change made by the BOF at the December 2009 meeting. Although the addition of 3 days of exclusivity for Togiak District suggested that there would be diminished interest in late season fishing there, a large preseason forecast suggested otherwise. Since there are no requirements for registration after July 27, increased effort is difficult to assess. Additionally, some permit holders are finishing their season while others are moving into Togiak District. Ultimately, there was diminished inquiry from recent years into late season fishing in Togiak from outside the district and only July 27 saw a noticeable increase in participation attributed to an influx of effort from other districts, with a record harvest for this day of 29,000 fish. The following day, participation returned to levels similar to those prior to July 27 and most of the effort from outside Togiak was thought to be over. Catches and participation remained at average levels, with a cumulative harvest of 631,000 sockeye at the close of fishing on July 29 and a cumulative escapement of 128,000 sockeye salmon, exceeding the lower end of the escapement goal range.

Togiak District fished the regular weekly schedule for the week of August 2 with effort, harvest, and catches per delivery dropping off to average late season levels. This week marked the last week of reported effort in the Kulukak Section, the only other subdistrict besides Togiak River Section that recorded harvest in 2010. Counting towers ceased operations August 5 after counting a season total of 188,298 sockeye salmon.

Similar to 2009, there was strong market interest in fishing for coho salmon in Togiak District in 2010. Coho salmon began to appear in catches in the last week of July and focus shifted to coho salmon management. Participation and harvest was at historical averages for August. A small group of permit holders continued to fish with above average coho salmon fishing into the beginning of September. Buying ceased for the season on September 3 with a cumulative coho salmon harvest of 23,730 fish.

The 2010 sockeye salmon harvest in Togiak District was 669,991 fish, 21% below the preseason forecasted harvest and the sixth largest in the most recent 20 years (Appendix A3). Total escapement at Togiak River counting towers was 188,298 sockeye salmon. Due to late season rain and high water conditions, Togiak District was not surveyed to assess salmon escapement in 2010. Although escapement information is incomplete, the total sockeye salmon run ranked 18th among the most recent 20 years (Appendix A17). Commercial Chinook salmon harvest was 56% of the 20-year average, while harvests of chum and coho salmon were 112% and 175%, respectively, of the 20-year averages (Appendices A20, A21, and A22).

2009 SUBSISTENCE SALMON FISHERY

Subsistence fishing for salmon and other fish species has taken place in the Bristol Bay area for thousands of years, and continues to be an important source of food for residents of local communities. Subsistence harvests still provide important nutritional, economic, social, and cultural benefits to most Bristol Bay households. All 5 species of Pacific salmon are utilized for subsistence purposes in Bristol Bay, but the most popular are sockeye, Chinook, and coho salmon. Many residents continue to preserve large quantities of fish through traditional methods such as drying and smoking, and fish are also frozen, canned, salted, pickled, fermented, and eaten fresh.

Final information about subsistence salmon harvests for the Bristol Bay area for 2010 was not available when this report was published. This information will be included in future annual

management reports. Tables in this report include final subsistence harvest data for 2009 that were not available for the 2009 annual management report.

REGULATIONS

Permits are required to harvest salmon for subsistence purposes in Bristol Bay. Since 1990, under state regulations, all Alaska residents have been eligible to participate in subsistence salmon fishing in all Bristol Bay drainages, except the Lake Clark area. Prior to 2007, with a few exceptions, only gillnets were recognized as legal subsistence gear. In the Togiak District, spear fishing was also allowed. In portions of Naknek Lake in the Naknek District, spears and dip nets, in addition to gillnets, could be used during designated periods, primarily to harvest spawning sockeye salmon ("redfish"). In the Bristol Bay area, gillnet lengths were limited to 10 fathoms in the Naknek, Egegik, and Ugashik rivers, Dillingham beaches, and within the Nushagak commercial fishing district during openings regulated by EO. Up to 25 fathoms could be used in the remaining areas, except that nets were limited to 5 fathoms in the special "redfish" harvest areas in the Naknek District. In December 2009 the Alaska Board of Fisheries changed subsistence regulations to allow 25 fathoms of set gill net on the Nushagak and Wood rivers upstream of a line from Nushagak Point to Snag Point.

At its regulatory meeting in Dillingham in December 2006, the BOF made 3 changes to the subsistence salmon fishing regulations that affected portions of the Bristol Bay area. The first change allowed salmon to be taken with a drift gillnets no more than 10 fathoms in length in the Togiak River between the mouth of the river and upstream approximately 2 miles. The second change allowed spears to be used to take salmon in Lake Clark. The third change allowed beach seines and gillnets to be used to take salmon in Iliamna Lake, Six Mile Lake, and Lake Clark.

In Nushagak, Togiak, Naknek, Egegik, and Ugashik Districts, subsistence fishing is permitted in all commercial districts during commercial openings. In addition, all commercial districts were open for subsistence fishing in May and October, from Monday to Friday. In the late 1990s and early 2000s, declining Chinook and coho salmon stocks resulted in longer commercial closures and some residents had difficulty obtaining fish for home use. In 2004 abundance of all species improved and has generally remained steady. Additional opportunity can be allowed by EO in all commercial districts, if necessary, to provide opportunity for subsistence users to meet their needs.

ADF&G issues Bristol Bay subsistence salmon permits to any Alaska resident who requests one. In 2001, the superintendent of Lake Clark National Park and Preserve, announced that the National Park Service (NPS) was prohibiting subsistence fishing with nets in the park and preserve, including all of Lake Clark, except by federally qualified residents. This prohibition was a new enforcement action of a NPS regulation and applied to anyone who was not a permanent resident of Iliamna, Lime Village, Newhalen, Nondalton, Pedro Bay, or Port Alsworth, or who did not have a Section 13.44 subsistence use permit issued by the park superintendent. ADF&G informs Bristol Bay subsistence salmon permit applicants that they need to take this NPS closure into account if they intend to subsistence fish in waters of the park and preserve.

PERMIT SYSTEM AND ANNUAL SUBSISTENCE HARVEST

A permit system was gradually introduced throughout the Bristol Bay region in the late 1960s to document the harvest of salmon for subsistence. Much of the increase in the number of permits

issued during these years reflects: 1) a greater compliance with the permitting and reporting requirements, 2) an increased level of effort expended by ADF&G in making permits available (including a local system of vendors), contacting individuals, and reminding them to return the harvest forms, and 3) a growing regional population. Most fishermen are obtaining permits and reporting their catches, and overall permit returns have averaged between 85% and 90% annually. However, fish removed for home use from commercial catches are not included in most reported subsistence harvest totals. Also, fish caught later in the season, such as coho and spawning salmon are probably not documented as consistently as Chinook and sockeye salmon.

Table 27 provides final data for Bristol Bay subsistence salmon harvests in 2009. As noted, final subsistence harvest estimates for 2010 were not available when this report was published. Appendix A27, A28, and A29 provide harvest estimates by district and species for the 20-year period from 1990 through 2009 plus the recent 5-year average harvests prior to 2010.

2010 BRISTOL BAY HERRING FISHERY

The Bristol Bay area includes all waters south of a line, extending west from Cape Newenham, east of the International Date Line in the Bering Sea and north of a line extending west from Cape Menshikof. The Bristol Bay area is divided into 3 herring fishing districts. The Bay District; including all waters east of the longitude of Cape Constantine, the Togiak District; including all waters between the longitude of Cape Newenham and the longitude of Cape Constantine, and the General District; including all waters west of the longitude of Cape Newenham. Togiak District spans approximately 119 miles (Figure 2). Togiak village lies at the center of the district, 67 miles west of Dillingham.

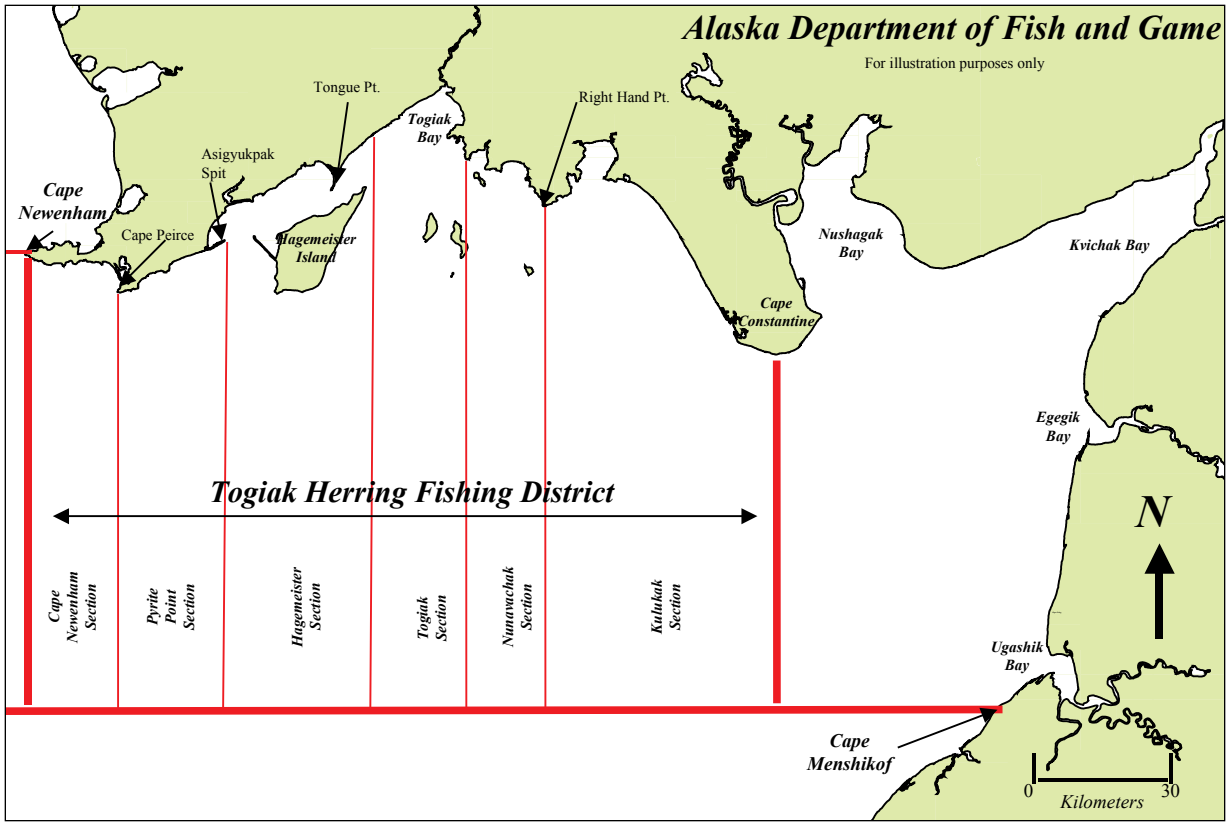

Figure 2.–Togiak Herring District, Bristol Bay.

The Togiak herring fishery is the largest in Alaska. From 1990 to 2009, sac roe harvests averaged approximately 21,000 tons, worth an average of $5.4 million annually (Appendices B2 and B6). Spawn-on-kelp harvests have occurred only once in the last decade. Given current market conditions, historic harvests and value are of limited utility when contemplating future harvest or value. In 2010, sac roe harvests brought $2.1 million to permit holders, 77% of the most recent 10-year average. No spawn-on-kelp fishery occurred in 2010.

STOCK ASSESSMENT

Since 1978, ADF&G has conducted aerial surveys throughout the herring spawning migration to estimate abundance, timing, and distribution of Pacific herring in the Togiak District. Surveys are conducted regularly from mid April through May each year. Once herring are observed, surveys are conducted daily, weather permitting, until commercial fishing is completed.

Fundamental aerial survey techniques used in Togiak have remained largely unchanged since 1978 and are described in Lebida and Whitmore (1985). Herring school surface area is estimated through a handheld tube with a measured grid and a known focal length from a known altitude. Standard conversion factors of 1.52 tons (water depths of 16 ft. or less), 2.58 tons (water depths between 16 and 26 ft.) and 2.83 tons (water depths greater than 26 ft.) per 538 ft^2 of surface area is applied to herring school surface areas to estimate the total biomass observed during each flight. Over the last 6 years, ADF&G has been converting aerial survey data collection to use Geographic Information Systems (GIS) performing "real-time" data entry and analysis.

The Togiak herring population is considered stable. Annual biomass estimates have ranged from 83,000 tons in 1991 to 194,000 tons estimated in 1993 (Appendix B5). Abundance was estimated to be high in the late 1970s, declined in the mid 1980s and remained relatively low and stable through 1991. Biomass levels from 1992 to 1994 increased from 157,000 to 185,000 tons and estimates since 1995 range from 115,000 to 176,000 tons estimated after the 2006 season.

Herring, ages 2 through 20, have been observed in the Togiak District but herring generally recruit into the fishery at age 5. Herring abundance is related to year class survival. Recent recruitment events have occurred in 1997, 2001, and 2002, appearing as age-13, -9, and -8 herring, respectively, in the 2010 season.

SAC ROE HERRING FISHERY OVERVIEW

Fishing and Industry Participation

In 2010, processor participation involved 6 companies, including one company that has historically operated as 2 distinct entities. Processing capacity on the grounds has also declined from a high of 4,850 tons per day in 1996, to a low in 2007 of 1,420 tons per day, to 2,690 tons per day in 2010.

Harvest and Management Performance

The average inseason management exploitation rate for the last 20 years was 19.2% but for the last 10 years has been 17.1% (Appendix B2). Annual inseason management exploitation has ranged from 32.0% to 13.5% and has not exceeded 20% since 2005.

Although controlling harvest used to be the major concern for managers, the last 6 years have been quite different from the derby style openings of the early 1990s. The seine fleet is now

divided into processor controlled cooperative fleets that harvest just enough herring to keep the processing lines full from day to day. This has allowed managers to open large areas of the district for up to 72 hours at a time without concern over having more fish harvested than processing capacity can handle in a short time. This is true for most of the fishery, but as the quota is approached, managers guard against large harvests that could exceed the fishery exploitation rate by reducing the duration of open fishing periods.

Cooperative seine fleets allow the participants to maximize the value of the fishery by reducing operating costs and allowing processors to control harvest, enforce a maximum set size and be highly selective in the fish they choose to harvest. This has led to higher inseason estimates of roe quality, although postseason estimates have not necessarily increased.

2010 SEASON SUMMARY

Biomass Estimation

Aerial surveys of the Togiak District began April 28, 2010. Herring were first reported in the district on May 8 when fishermen observed fish on their depth sounders. On May 10, ADF&G staff flew a survey under very poor conditions due to cloud cover; a large volume of herring was entering the district between Hagemeister and High Islands and offshore of Anchor Point just outside of Togiak Bay. Due to survey conditions staff were unable to adequately document the biomass that was present. Poor weather precluded a survey on May 11, but based on the amount of time that herring had been on the grounds and the amount of biomass estimated (20,000 tons on May 10) the department concluded that the threshold biomass was present. On May 14, staff flew another survey under good conditions and documented 79,000 tons of herring present in the Togiak District. Another survey on May 18 documented 98,000 tons of herring. Additional surveys were flown on May 21, May 25, and June 2. These surveys documented 72,000, 53,000 and 37,000 tons of herring respectively.

AGE COMPOSITION

Approximately 8,130 herring harvested between 10 and 22 May and sampled between 13 and 23 May were examined for age, size, and sex information. Samples were taken from the commercial purse seine and gillnet fisheries.

Age-5 through age-7 herring dominated the Togiak commercial purse seine fishery (65.9%) while the gillnet harvest was dominated by age-7 through age-9 fish (62.7%). The mean weight of sampled herring was 340 g; 338 g in the purse seine fishery and 394 g in the gillnet fishery. The sex composition was 49.0% male and 51.0% female in the commercial fishery.

The estimates of age, size, and sex composition are based on inseason analysis and all estimates should be considered preliminary. Postseason analysis will be completed this fall and included in the 2010 Togiak herring Fisheries Data Series (FDS) report.

Fishery Overview

The Togiak District herring fisheries are managed in accordance with the Bristol Bay Herring Management Plan (5 AAC 27.865), which was modified by the BOF in December 2006. The plan specifies a maximum allowable exploitation rate of 20% and allocates the harvestable surplus among all fisheries harvesting the Togiak herring stock. The 2010 preseason forecasted biomass was 146,775 tons. The projected harvest guideline for each fishery was as follows:

1,500 tons herring equivalent or 350,000 lbs. of product for the spawn-on-kelp fishery, 1,950 tons for the Dutch Harbor food and bait fishery, and the remaining 25,905 tons to the sac roe fishery. The management plan specifies that ADF&G will manage the sac roe fishery so that 70% of the removal is taken by purse seines (18,134 tons in 2010) and 30% of the removal is taken by gillnets (7,772 tons in 2010).

The Bristol Bay Herring Management Plan and other regulations direct ADF&G to conduct an orderly, manageable fishery and strive for the highest level of product quality with a minimum of waste. In recent years, the seine fleet has been comprised of processor-organized cooperatives. For the 2010 season, management staff again planned to allow long duration seine openings over a large area of the district and to let processors limit harvest for their individual fleets based on processing capacity. Input from the fleet and industry has indicated that this slows the "race for fish" and allows for improved quality and value.

To predict spawn timing for Togiak herring, ADF&G used a temperature model based on sea surface temperatures from Unimak Pass. These temperatures predicted the first spawn would be May 11, with the first harvest occurring on May 11. Although air temperature in April seemed warmer than the previous few years, the sea surface remained ice covered and water temperatures were colder than average.

ADF&G staff polled processing companies prior to the season to assess processing capacity for the 2010 season and to inquire about additional concerns or issues. The poll indicated that, as in 2009, 6 companies would be participating in the 2010 Togiak herring fishery. As previously mentioned, the merging of 2 companies that historically operated separately represented an increase in capacity and participation in 2010. The processing capacity for 2010 was estimated to be 2,600 tons per day. There were no major concerns preseason and no need for a preseason teleconference.

Purse Seine

The Togiak purse seine fishery opened at 6:00 p.m. on May 11. The first purse seine opening was 76 hours in duration, but the first reported harvest did not occur until May 14. The purse seine fishery was extended for 72 hours on May 14. Due to weather affecting the gillnet fishery, the area for the purse seine fishery was changed several times to accommodate the gillnet fleet over the course of the fishery beginning on Sunday, May 16. These changes consisted of reducing the purse seine area in Nunavachak Bay when the wind precluded gillnet fishing east of Right Hand Point and then restoring the original purse seine area when the wind did not affect gillnet fishing east of Right Hand Point. The first harvest occurred on May 14 when 1,744 tons of herring were harvested. Fishing continued steadily until May 22, with the daily harvest ranging from a low of 1,606 tons to a high of 4,630 tons of herring. The cumulative harvest after fishing on May 20 was 15,046 tons with approximately 4,000 tons remaining on the quota. On May 21, staff extended the purse seine period until noon on May 22. Processors were surveyed and conveyed that capacity was potentially available to harvest the remaining quota by that time. Harvest information was received on the morning of May 22 for fishing that occurred on May 21. The harvest on May 21 was 1,606 tons, bringing the total to 16,651 with approximately 2,000 tons remaining. Estimating that capacity was available to harvest the remaining fish on the quota in a short time, the purse seine fishery was extended for 12 hours. Staff were concerned that if additional fishing time were allowed after May 22, a significant amount of capacity would be available, risking a harvest exceeding the remaining quota. Another concern was the

decreasing fish size and increasing number of released sets. If herring that were available on May 22 were not of commercially desirable size or quality, then fish available after May 22 would likely be of similar or lesser quality. For these reasons, it was determined that fishing would close for the season at 11:59 p.m. on May 22. The harvest on May 22 was 1,886 tons, bringing the total season harvest to 18,816 tons or 104% of the preseason quota. The average weight of herring harvested by the purse seine fleet was 338 g and the average roe percentage was 9.7%.

Gillnet

The Togiak gillnet fishery was opened at 6:00 p.m. May 11 until further notice with no prior test fishing allowing individuals to work with their companies to determine when fish were of suitable quality. The first harvest in the gillnet fishery was reported late on May 14. On May 16, the gillnet area was expanded to include some area west of Right Hand Point. This action was necessary because strong winds made fishing in the Egg Island Subsection impossible. The area west of Right Hand Point was opened and closed for gillnet fishing depending on weather conditions and fishing effort in that area. If the gillnet fleet could not fish in the Egg Island Subsection, then area was provided west of Right Hand Point. If no gillnet effort was using the area west of Right Hand Point, then that area was closed to the gillnet fleet and reopened for the purse seine fleet.

The first gillnet harvest was 59 tons on May 14. The harvest on May 15 was 653 tons but some companies reported that fish were still not of marketable quality. May 16 fishing was hampered by the wind and the area west of Right Hand Point was opened in the afternoon yielding a harvest of 644 tons. The majority of fishing effort shifted back to the Egg Island Subsection on May 17 but the wind again hampered fishing and the harvest was 378 tons. On May 18, weather and fish quality were good and the harvest increased to 1,585 tons. The next three days of fishing were similar with between 830 to 919 tons harvested. After fishing on May 21, the total gillnet harvest was 5,922 with approximately 1,700 tons remaining on the quota. On May 22, department staff announced that the gillnet fishery would close at 11:59 p.m. on May 23 with the possibility of reopening on May 24 if necessary to allow ample time to harvest the remaining quota.

The harvest dropped dramatically on May 22 to 227 tons. The harvest on May 23 was also lower than expected at 424 tons, bringing the total gillnet harvest to 6,837 and leaving approximately 900 tons of the quota available for harvest. The gillnet fishery was reopened at 11:00 a.m. on May 24 for 25 hours. The harvest continued at a slow but consistent pace, with the department extending fishing in 24-hour increments until May 27. On May 27, fishing was extended for an additional 12 hours until 11:59 p.m. May 27. There was a small amount of fish remaining on the quota and processors indicated the 12-hour extension would provide adequate time to harvest the remaining quota. At the close of fishing, the total harvest for the gillnet fleet was 7,540 tons of herring. The average weight of herring harvested by the gillnet fleet was 394 g with an average roe percent of 10.1%.

Spawn on Kelp

No companies registered to buy herring spawn-on-kelp in 2010, therefore there were no openings and no commercial harvest.

EXPLOITATION

The 2010 herring fisheries were managed for a maximum exploitation rate of 20% of the preseason biomass estimate. The purse seine harvest was 18,816 tons, with an average weight of 338 grams and an average roe percentage of 9.7%. The gillnet harvest was 7,540 tons, with an average weight of 394 grams and an average roe percentage of 10.1%, making the combined harvest 26,355 tons with an average weight of 353 grams and an average roe percentage of 9.8%. The Dutch Harbor food and bait fishery harvest was 1,941, making the total harvest for 2010 28,296 tons. Based on the preseason biomass estimate of 146,775 tons, the 2010 exploitation rate was approximately 19.3%.

EXVESSEL VALUE

The projected exvessel value of the 2010 Togiak herring fishery was approximately $3.8 million. This is based on a grounds price estimate of $150 per ton for seine caught fish and $150 per ton for gillnet caught fish and does not include any postseason adjustments.

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TABLES

Table 1.–Comparison of inshore sockeye salmon forecast versus actual run, escapement goals versus actual escapements, and projected versus actual commercial catch, by river system and district, in thousands of fish, Bristol Bay, 2010.

District and River System [a]		Inshore Run			Escapement		Inshore Catch		
		Forecast	Actual	Percent Deviation [b]	Range	Actual	Projected Harvest	Actual	Percent Deviation [b]
NAKNEK-KVICHAK DISTRICT									
Kvichak River		3,840	9,225	58	2,000–10,000	4,207	1,720	5,018	66
Alagnak River		1,790	2,584	31	320 minimum	1,188	800	1,396	43
Naknek River		7,370	5,709	-29	800–1,400	1,464	6,040	4,245	-42
	Total	13,000	17,518	26	3,120–11,720	6,859	8,560	10,659	20
EGEGIK DISTRICT		10,630	5,890	-80	800–1,400	927	9,200	4,963	-85
UGASHIK DISTRICT		4,500	4,824	7	500–1,200	831	3,510	3,993	12
NUSHAGAK DISTRICT									
Wood River		6,190	7,618	19	700–1,500	1,804	4,890	5,814	16
Igushik River		2,100	1,355	-55	150–300	518	1,820	837	-117
Nushagak-Mulchatna		2,314	2,127	-9	340–760	469	1,700	1,659	-2
	Total	10,604	11,100	4	1,190–2,560	2,791	8,410	8,310	-1
TOGIAK DISTRICT		1,030	858	-20	120–270	188	850	670	-27
TOTAL BRISTOL BAY		39,764	40,191	1	5,730–17,150	11,596	30,530	28,595	-7

[a] The Bristol Bay inshore forecast does not include several minor river systems, including the Snake River drainage in Nushagak District, and the Kulukak, Osviak, Matogak, and Slug River systems in Togiak District. Catch, escapement, and total run for these smaller systems are not included in this table so that forecast efficacy may be gauged. Totals may not equal column sums due to rounding.

[b] Percent deviation = (Actual - Forecast) / Actual.

Table 2.–Inshore forecast of sockeye salmon returns by age class, river system and district, in thousands of fish, Bristol Bay, 2010.

District and	2-Ocean			3-Ocean			
River System	1.2 (2006)	2.2 (2005)	Total	1.3 (2005)	2.3 (2004)	Total	Total
NAKNEK-KVICHAK DISTRICT							
Kvichak River	1,740	650	2,390	980	470	1,450	3,840
Alagnak River	480	100	580	1,100	110	1,210	1,790
Naknek River	1,720	820	2,540	3,870	960	4,830	7,370
Total	3,940	1,570	5,510	5,950	1,540	7,490	13,000
EGEGIK DISTRICT	1,350	4,020	5,370	1,340	3,920	5,260	10,630
UGASHIK DISTRICT	2,290	450	2,740	1,330	430	1,760	4,500
NUSHAGAK DISTRICT							
Wood River	3,060	230	3,290	2,830	70	2,900	6,190
Igushik River	650	20	670	1,410	20	1,430	2,100
Nushagak River	290	10	300	1,840	30	1,870	2,314
Total	4,000	260	4,260	6,080	120	6,200	10,600
TOGIAK DISTRICT	150	60	210	780	40	820	1,030
TOTAL BRISTOL BAY [a]							
Number	11,730	6,360	18,090	15,480	6,050	21,530	39,760
Percent	29	16	45	39	15	54	99

[a] Sockeye salmon of several minor age classes are expected to contribute an additional 1–2% to the total return.

Table 3.–Inshore run of sockeye salmon by age class, river system, and district, in thousands of fish, Bristol Bay, 2010.

District and River System [a]		1.2	2.2	2-Ocean	1.3	2.3	3-Ocean	1.4	Total [b]
NAKNEK-KVICHAK DISTRICT									
Kvichak River									
	Number	3,005	3,981	6,987	1,688	549	2,237	0	9,225
	Percent	32.6	43.2	75.7	18.3	6.0	24.2	0.0	100.0
Alagnak River									
	Number	517	60	577	1,782	202	1,984	21	2,584
	Percent	20.0	2.3	22.3	69.0	7.8	76.8	0.8	99.9
Naknek River									
	Number	1,527	1,259	2,989	2,094	759	2,853	17	5,709
	Percent	26.7	22.1	52.4	36.7	13.3	50.0	0.3	99.1
Total	Number	5,049	5,300	10,553	5,564	1,510	7,074	38	17,518
	Percent	28.8	30.3	60.2	31.8	8.6	40.4	0.2	99.7
EGEGIK DISTRICT									
	Number	585	2,868	3,453	801	1,471	2,272	1	5,890
	Percent	9.9	48.7	58.6	13.6	25.0	38.6	0.0	97.2
UGASHIK DISTRICT									
	Number	732	1,495	2,227	2,044	483	2,527	4	4,824
	Percent	15.2	31.0	46.2	42.4	10.0	52.4	0.1	98.6
NUSHAGAK DISTRICT									
Wood River									
	Number	4,285	231	4,516	2,979	99	3,078	12	7,618
	Percent	56.2	3.0	59.3	39.1	1.3	40.4	0.2	99.8
Igushik River									
	Number	183	35	218	1,110	23	1,133	1	1,355
	Percent	13.5	2.6	16.1	81.9	1.7	83.6	0.1	99.8
Nushagak River									
	Number	198	38	236	1,718	57	1,775	85	2,127
	Percent	9.3	1.8	11.1	80.8	2.7	83.5	4.0	98.5
Total	Number	4,666	304	4,970	5,807	179	5,986	98	11,100
	Percent	42.0	2.7	44.8	52.3	1.6	53.9	0.9	99.6
TOGIAK DISTRICT [c]									
	Number	302	77	379	431	45	476	1	858
	Percent	35.2	9.0	44.2	50.2	5.2	55.5	0.1	99.8
TOTAL BRISTOL BAY [d]									
	Number	11,334	10,044	21,582	14,647	3,688	18,335	142	40,191
	Percent	28.2	25.0	53.7	36.4	9.2	45.6	0.4	99.2

[a] The inshore run data does not include the South Peninsula catch of Bristol Bay sockeye salmon or immature high seas bycatch.

[b] Totals include minor age classes not listed in this table however, minor rivers and creeks are not included.

[c] Does not include rivers other than Togiak River.

[d] Totals may not equal column sums due to rounding.

Table 4.–Inshore commercial catch and escapement of sockeye salmon, in numbers of fish, Bristol Bay, 2010.

District and River System		Catch	Escapement		Total Run
NAKNEK-KVICHAK DISTRICT					
Kvichak River		5,018,048	4,207,410		9,225,458
Alagnak River		1,396,339	1,187,730		2,584,069
Naknek River		4,244,728	1,463,928		5,708,656
	Total	10,659,115	6,859,068		17,518,183
EGEGIK DISTRICT		4,963,049	927,054	[a]	5,890,103
UGASHIK DISTRICT		3,993,080	830,886	[b]	4,823,966
NUSHAGAK DISTRICT					
Wood River		5,813,715	1,804,344		7,618,059
Igushik River		836,767	518,040		1,354,807
Nushagak-Mulchatna		1,658,801	468,696		2,127,497
	Total	8,309,283	2,791,080		11,100,363
TOGIAK DISTRICT					
Togiak Lake			188,298		188,298
Togiak River/Tributaries					0
Kulukak System					0
Other Systems [c]		0			
	Total	669,991	188,298		858,289
TOTAL BRISTOL BAY		28,594,518	11,596,386		40,190,904

Note: Blank cells indicate no data.

[a] Egegik River Tower count and King Salmon River aerial survey estimate.

[b] Includes Ugashik River Tower and aerial survey estimates from King Salmon and Dog Salmon Rivers.

[c] Includes Negukthlik, Ungalikthluk, Osviak, Matogak, Quigmy, and Slug Rivers.

Table 5.–Summary of sockeye salmon test fishing indices in the Naknek/Kvichak District, by index area and date, Bristol Bay, 2010.

	Naknek	Pederson	Cutbank &	Gravel	Half	Middle	Johnston	Division	Ships	Deadmans
Date	R. Mouth	Point	Graveyard	Spit	Moon Bay	Naknek	Hill	Buoy	Anchorage	Sands
28 Jun		267	390	36					25	
29 Jun		22	40						4	
8 Jul		20	103	449	310				153	0

Note: Blank cells indicate no data.

Table 6.–Summary of sockeye salmon test fishing indices in the Nushagak District, by index area and date, Bristol Bay, 2010.

Date	Hanson Point	Across Hanson Pt	Tule Point	Picnic Point	Grassy Island
6/18	122	125	0	0	0
	122	0	133	-	-
6/19	401	0	0	0	0
	370	0	0	-	-
6/20	266	124	0	0	0
	126	133	132	-	-
6/21	0	0	0	0	0
	0	0	0	-	-
6/22	131	0	248	0	1,038
	0	0	0	-	-
6/23	395	0	1,973	0	125
	0	4,054	2,535	-	-
6/24	255	1,674	7,458	0	3,343
	258	3,638	8,335	-	-
6/25	6,632	2,586	1,196	0	0
	8,058	780	0	-	-
6/25	331	2,848	4,337	0	494
	336	2,230	5,708	-	-
6/26	1,872	4,418	246	0	0
	2,228	6,373	114	-	-
6/26	0	1,062	1,254	0	0
	0	1,970	1,907	-	-
6/27	906	670	128	0	766
	1,186	800	1,200	-	-
6/27	1,576	111	2,842	0	2,463
	1,537	255	3,827	-	-
6/28	1,018	1,595	3,600	0	0
	1,997	2,928	3,535	-	-

Note: All indices expressed in number of fish/100 fathoms-hours to the nearest full index point. Indices listed first for each station were recorded using 5 1/8 inch mesh gear; second with 4 3/4 inch gear. The first set of indices for each date occurred during morning tide; the second during night tide. Blank cells indicate no data.

Table 7.–Commercial fishing emergency orders, by district and statistical area, Bristol Bay, 2010.

Number[a]	Start Date	Start Time		End Date	End Time	Effective time	
Naknek/Kvichak District							
Drift Net							
AKN.68	12 Jul	12:00 a.m.	to	12 Jul	8:00 p.m.	20.0 hours	
AKN.70	13 Jul	1:00 a.m.	to	13 Jul	9:00 p.m.	20.0 hours	
AKN.71	12 Jul	6:00 p.m.					[d]
AKN.72	14 Jul	1:30 a.m.	to	23 Jul	9:00 a.m.		[b]
Set Net							
AKN.01	1 Jun	9:00 a.m.	to	23 Jun	9:00 a.m.		[b,c]
AKN.16	24 Jun	10:00 a.m.	to	24 Jun	5:30 p.m.	7.5 hours	
AKN.19	25 Jun	11:00 a.m.	to	25 Jun	6:30 p.m.	7.5 hours	
AKN.22	26 Jun	12:00 p.m.	to	26 Jun	8:00 p.m.	8.0 hours	
AKN.25	27 Jun	1:30 a.m.	to	27 Jun	10:30 a.m.	9.0 hours	
AKN.25	27 Jun	1:00 p.m.	to	27 Jun	9:00 p.m.	8.0 hours	
AKN.29	28 Jun	2:00 a.m.	to	28 Jun	11:30 a.m.	9.5 hours	
AKN.29	28 Jun	2:00 p.m.	to	28 Jun	9:00 p.m.	7.0 hours	
AKN.32	29 Jun	2:30 a.m.	to	29 Jun	12:00 p.m.	9.5 hours	
AKN.32	29 Jun	3:00 p.m.	to	29 Jun	10:00 p.m.	7.0 hours	
AKN.35	30 Jun	3:00 a.m.	to	30 Jun	12:30 p.m.	9.5 hours	
AKN.35	30 Jun	4:00 p.m.	to	30 Jun	11:00 p.m.	7.0 hours	
AKN.38	1 Jul	3:30 a.m.	to	1 Jul	1:00 p.m.	9.5 hours	
AKN.38	1 Jul	4:30 p.m.	to	1 Jul	11:30 p.m.	7.0 hours	
AKN.40	2 Jul	4:30 a.m.	to	2 Jul	1:30 p.m.	9.0 hours	
AKN.40	2 Jul	5:30 p.m.	to	3 Jul	1:00 a.m.	7.5 hours	
AKN.42	3 Jul	5:00 a.m.	to	3 Jul	2:00 p.m.	9.0 hours	
AKN.42	3 Jul	6:00 p.m.	to	4 Jul	2:30 a.m.	8.5 hours	
AKN.45	4 Jul	5:30 a.m.	to	4 Jul	2:00 p.m.	8.5 hours	
AKN.45	4 Jul	7:00 p.m.	to	5 Jul	3:30 a.m.	8.5 hours	
AKN.48	5 Jul	6:00 a.m.	to	5 Jul	2:30 p.m.	8.5 hours	
AKN.48	5 Jul	8:00 p.m.	to	6 Jul	5:00 a.m.	9.0 hours	
AKN.52	6 Jul	6:30 a.m.	to	6 Jul	3:00 p.m.	8.5 hours	
AKN.52	6 Jul	8:30 p.m.	to	7 Jul	5:00 a.m.	8.5 hours	
AKN.55	7 Jul	7:00 a.m.	to	7 Jul	3:00 p.m.	8.0 hours	
AKN.55	7 Jul	9:30 p.m.	to	8 Jul	6:30 a.m.	9.0 hours	
AKN.58	8 Jul	6:30 a.m.	to	8 Jul	3:30 p.m.	9.0 hours	
AKN.58	8 Jul	10:00 p.m.	to	9 Jul	8:00 a.m.	10.0 hours	
AKN.61	9 Jul	8:00 a.m.	to	9 Jul	4:30 p.m.	8.5 hours	
AKN.61	9 Jul	11:00 p.m.	to	10 Jul	9:00 a.m.	10.0 hours	
AKN.63	10 Jul	9:00 a.m.	to	10 Jul	5:00 p.m.	8.0 hours	
AKN.63	11 Jul	12:00 a.m.	to	11 Jul	9:00 a.m.	9.0 hours	
AKN.65	11 Jul	9:00 a.m.	to	11 Jul	6:00 p.m.	9.0 hours	
AKN.65	12 Jul	12:30 a.m.	to	12 Jul	9:00 a.m.	8.5 hours	
AKN.68	12 Jul	9:00 a.m.	to	12 Jul	7:00 p.m.	10.0 hours	
AKN.70	13 Jul	1:00 a.m.	to	13 Jul	9:00 p.m.	20.0 hours	

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Table 7.–Page 2 of 10.

Number[a]	Start Date	Start Time		End Date	End Time	Effective time
AKN.72	14 Jul	1:30 a.m.	to	23 Jul	9:00 a.m.	
Naknek Section						
Drift Net						
AKN.01	1 Jun	9:00 a.m.	to	23 Jun	9:00 a.m.	[b,c]
AKN.16	24 Jun	11:00 a.m.	to	24 Jun	5:30 p.m.	6.5 hours
AKN.19	25 Jun	12:00 p.m.	to	25 Jun	6:30 p.m.	6.5 hours
AKN.22	26 Jun	1:00 p.m.	to	26 Jun	8:00 p.m.	7.0 hours
AKN.25	27 Jun	1:00 p.m.	to	27 Jun	9:00 p.m.	8.0 hours
AKN.29	28 Jun	3:00 a.m.	to	28 Jun	9:00 a.m.	6.0 hours
AKN.29	28 Jun	2:00 p.m.	to	28 Jun	9:00 p.m.	7.0 hours
AKN.32	29 Jun	2:30 a.m.	to	29 Jun	12:00 p.m.	9.5 hours
AKN.32	29 Jun	3:00 p.m.	to	29 Jun	10:00 p.m.	7.0 hours
AKN.35	30 Jun	3:00 a.m.	to	30 Jun	12:30 p.m.	9.5 hours
AKN.35	30 Jun	4:00 p.m.	to	30 Jun	11:00 p.m.	7.0 hours
AKN.38	1 Jul	2:30 a.m.	to	1 Jul	1:00 p.m.	10.5 hours
AKN.38	1 Jul	3:30 p.m.	to	1 Jul	11:30 p.m.	8.0 hours
AKN.40	2 Jul	3:30 a.m.	to	2 Jul	1:30 p.m.	10.0 hours
AKN.40	2 Jul	4:30 p.m.	to	3 Jul	1:00 a.m.	8.5 hours
AKN.42	3 Jul	4:00 a.m.	to	3 Jul	2:00 p.m.	10.0 hours
AKN.42	3 Jul	5:00 p.m.	to	4 Jul	2:30 a.m.	9.5 hours
AKN.45	4 Jul	5:30 a.m.	to	4 Jul	2:00 p.m.	8.5 hours
AKN.45	4 Jul	7:00 p.m.	to	5 Jul	3:30 a.m.	8.5 hours
AKN.48	5 Jul	6:00 a.m.	to	5 Jul	2:30 p.m.	8.5 hours
AKN.48	5 Jul	8:00 p.m.	to	6 Jul	5:00 a.m.	9.0 hours
AKN.52	6 Jul	6:30 a.m.	to	6 Jul	3:00 p.m.	8.5 hours
AKN.52	6 Jul	8:30 p.m.	to	7 Jul	5:00 a.m.	8.5 hours
AKN.55	7 Jul	7:00 a.m.	to	7 Jul	3:00 p.m.	8.0 hours
AKN.55	7 Jul	9:30 p.m.	to	8 Jul	6:30 a.m.	9.0 hours
AKN.58	8 Jul	6:30 a.m.	to	8 Jul	5:00 p.m.	10.5 hours
AKN.58	8 Jul	9:00 p.m.	to	9 Jul	8:00 a.m.	11.0 hours
AKN.61	9 Jul	8:00 a.m.	to	9 Jul	7:00 p.m.	11.0 hours
AKN.61	9 Jul	10:00 p.m.	to	10 Jul	9:00 a.m.	11.0 hours
AKN.63	10 Jul	9:00 a.m.	to	10 Jul	8:00 p.m.	11.0 hours
AKN.63	10 Jul	11:00 p.m.	to	11 Jul	9:00 a.m.	10.0 hours
AKN.65	11 Jul	9:00 a.m.	to	11 Jul	8:00 p.m.	11.0 hours
AKN.65	12 Jul	12:00 a.m.	to	12 Jul	9:00 a.m.	9.0 hours
Egegik District						
Drift Net						
AKN.02	1 Jun	12:00 a.m.	to	16 Jun	12:00 p.m.	
AKN.05	16 Jun	2:45 p.m.	to	16 Jun	11:45 p.m.	8.0 hours
AKN.07	18 Jun	4:45 p.m.	to	19 Jun	1:45 a.m.	8.0 hours
AKN.10	21 Jun	7:30 a.m.	to	18 Jun	12:30 p.m.	5.0 hours

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Number[a]	Start Date	Start Time		End Date	End Time	Effective time
AKN.14	23 Jun	9:00 a.m.	to	23 Jun	1:00 p.m.	4.0 hours
AKN.17	24 Jun	10:00 a.m.	to	24 Jun	2:00 p.m.	4.0 hours
AKN.20	25 Jun	11:00 a.m.	to	25 Jun	3:00 p.m.	4.0 hours
AKN.23	26 Jun	11:30 a.m.	to	26 Jun	3:30 p.m.	4.0 hours
AKN.26	26 Jun	3:30 p.m.	to	26 Jun	5:30 p.m.	2.0 hours
AKN.27	27 Jun	1:30 p.m.	to	27 Jun	6:30 p.m.	5.0 hours
AKN.30	28 Jun	1:45 p.m.	to	28 Jun	6:45 p.m.	5.0 hours
AKN.33	29 Jun	2:30 p.m.	to	29 Jun	6:30 p.m.	4.0 hours
AKN.36	30 Jun	3:30 p.m.	to	30 Jun	8:00 p.m.	4.5 hours
AKN.41	1 Jul	4:30 p.m.	to	1 Jul	8:30 p.m.	4.0 hours
AKN.43	3 Jul	4:00 a.m.	to	3 Jul	9:00 a.m.	5.0 hours
AKN.46	3 Jul	5:30 p.m.	to	3 Jul	9:30 p.m.	4.0 hours
AKN.46	4 Jul	5:30 a.m.	to	4 Jul	9:30 a.m.	4.0 hours
AKN.50	4 Jul	6:30 p.m.	to	5 Jul	10:30 p.m.	4.0 hours
AKN.50	5 Jul	6:30 a.m.	to	5 Jul	10:30 a.m.	4.0 hours
AKN.53	6 Jul	7:30 p.m.	to	7 Jul	12:30 a.m.	5.0 hours
AKN.53	7 Jul	7:30 a.m.	to	7 Jul	12:30 p.m.	5.0 hours
AKN.56	8 Jul	8:30 a.m.	to	8 Jul	1:30 p.m.	5.0 hours
AKN.59	8 Jul	8:30 p.m.	to	9 Jul	12:30 a.m.	4.0 hours
AKN.59	9 Jul	9:00 a.m.	to	9 Jul	2:00 p.m.	5.0 hours
AKN.66	10 Jul	10:30 p.m.	to	11 Jul	2:30 a.m.	4.0 hours
AKN.66	11 Jul	10:30 a.m.	to	11 Jul	4:30 p.m.	6.0 hours
AKN.75	16 Jul	3:45 p.m.	to	23 Jul	9:00 a.m.	
AKN.76	23 Jul	9:00 a.m.	to	30 Jul	6:00 a.m.	
Set Net						
AKN.02	1 Jun	12:00 a.m.	to	16 Jun	12:00 p.m.	
AKN.05	16 Jun	2:45 p.m.	to	16 Jun	11:45 p.m.	8.0 hours
AKN.07	18 Jun	4:45 p.m.	to	19 Jun	1:45 a.m.	8.0 hours
AKN.10	20 Jun	8:45 p.m.	to	21 Jun	4:45 a.m.	8.0 hours
AKN.10	21 Jun	6:30 a.m.	to	21 Jun	2:30 p.m.	8.0 hours
AKN.14	23 Jun	8:00 a.m.	to	23 Jun	4:00 p.m.	8.0 hours
AKN.17	24 Jun	9:00 a.m.	to	24 Jun	5:00 p.m.	8.0 hours
AKN.20	25 Jun	10:00 a.m.	to	25 Jun	6:00 p.m.	8.0 hours
AKN.23	26 Jun	11:00 a.m.	to	26 Jun	7:00 p.m.	8.0 hours
AKN.27	26 Jun	11:45 p.m.	to	27 Jun	7:45 a.m.	8.0 hours
AKN.27	27 Jun	12:30 p.m.	to	27 Jun	8:30 p.m.	8.0 hours
AKN.30	28 Jun	12:45 p.m.	to	28 Jun	8:45 p.m.	8.0 hours
AKN.33	29 Jun	1:30 p.m.	to	29 Jun	9:30 p.m.	8.0 hours
AKN.36	30 Jun	2:45 p.m.	to	30 Jun	10:45 p.m.	8.0 hours
AKN.41	1 Jul	3:30 p.m.	to	1 Jul	11:30 p.m.	8.0 hours
AKN.43	3 Jul	3:45 a.m.	to	3 Jul	11:45 p.m.	8.0 hours
AKN.46	3 Jul	4:30 p.m.	to	4 Jul	12:30 a.m.	8.0 hours
AKN.46	4 Jul	4:30 a.m.	to	4 Jul	12:30 p.m.	8.0 hours

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Number[a]	Start Date	Start Time		End Date	End Time	Effective time	
AKN.50	4 Jul	5:30 p.m.	to	5 Jul	1:30 a.m.	8.0 hours	
AKN.50	5 Jul	5:00 a.m.	to	5 Jul	1:00 p.m.	8.0 hours	
AKN.53	6 Jul	7:15 p.m.	to	7 Jul	3:15 a.m.	8.0 hours	
AKN.53	7 Jul	6:30 a.m.	to	7 Jul	2:30 p.m.	8.0 hours	
AKN.56	7 Jul	8:00 p.m.	to	8 Jul	4:00 a.m.	8.0 hours	
AKN.56	8 Jul	7:30 a.m.	to	8 Jul	3:30 p.m.	8.0 hours	
AKN.59	9 Jul	8:30 a.m.	to	9 Jul	4:30 p.m.	8.0 hours	
AKN.66	10 Jul	10:30 p.m.	to	11 Jul	6:30 a.m.	8.0 hours	
AKN.66	11 Jul	10:15 a.m.	to	11 Jul	6:15 p.m.	8.0 hours	
AKN.75	16 Jul	3:45 p.m.	to	23 Jul	9:00 a.m.		
AKN.76	23 Jul	9:00 a.m.	to	30 Jul	96:00 a.m.		
Ugashik District							
Drift Net							
AKN.03	1 Jun	12:00 a.m.	to	18 Jun	9:00 a.m.		[b]
AKN.11	21 Jun	4:30 a.m.	to	21 Jun	12:30 p.m.	8.0 hours	
AKN.15	23 Jun	6:30 a.m.	to	23 Jun	2:30 p.m.	8.0 hours	
AKN.18	24 Jun	7:30 a.m.	to	24 Jun	1:30 p.m.	6.0 hours	
AKN.21	25 Jun	9:30 a.m.	to	25 Jun	5:30 p.m.	8.0 hours	
AKN.24	26 Jun	10:30 a.m.	to	26 Jun	6:30 p.m.	8.0 hours	
AKN.28	27 Jun	11:30 a.m.	to	27 Jun	7:30 p.m.	8.0 hours	
AKN.31	28 Jun	12:00 p.m.	to	28 Jun	8:00 p.m.	8.0 hours	
AKN.34	29 Jun	1:00 p.m.	to	29 Jun	9:00 p.m.	8.0 hours	
AKN.37	30 Jun	1:30 p.m.	to	30 Jun	8:30 p.m.	7.0 hours	
AKN.39	1 Jul	1:30 p.m.	to	2 Jul	1:30 p.m.	24.0 hours	
AKN.44	2 Jul	3:00 p.m.	to	2 Jul	11:00 p.m.	8.0 hours	
AKN.47	3 Jul	5:30 p.m.	to	3 Jul	11:30 p.m.	6.0 hours	
AKN.51	4 Jul	5:30 p.m.	to	4 Jul	11:30 p.m.	6.0 hours	
AKN.54	6 Jul	6:00 p.m.	to	6 Jul	11:00 p.m.	5.0 hours	
AKN.54	7 Jul	5:00 a.m.	to	7 Jul	10:00 a.m.	5.0 hours	
AKN.57	8 Jul	8:00 a.m.	to	8 Jul	1:00 p.m.	5.0 hours	
AKN.60	9 Jul	8:00 a.m.	to	9 Jul	4:00 p.m.	8.0 hours	[d]
AKN.62	10 Jul	9:00 a.m.	to	10 Jul	5:00 p.m.	8.0 hours	
AKN.63	11 Jul	9:30 a.m.	to	11 Jul	5:30 p.m.	8.0 hours	[b]
AKN.67	12 Jul	10:30 a.m.	to	12 Jul	6:30 p.m.	8.0 hours	
AKN.67	13 Jul	12:30 a.m.	to	13 Jul	6:30 a.m.	6.0 hours	
AKN.69	13 Jul	12:00 p.m.	to	13 Jul	5:00 p.m.	5.0 hours	
AKN.73	15 Jul	12:00 a.m.	to	16 Jul	12:00 a.m.	24.0 hours	
Set Net							
AKN.03	1 Jun	12:00 a.m.	to	18 Jun	9:00 a.m.		
AKN.11	21 Jun	4:30 a.m.	to	21 Jun	12:30 p.m.	8.0 hours	
AKN.15	23 Jun	6:30 a.m.	to	23 Jun	2:30 p.m.	8.0 hours	[b]
AKN.18	24 Jun	7:30 a.m.	to	24 Jun	1:30 p.m.	6.0 hours	
AKN.21	25 Jun	8:30 a.m.	to	25 Jun	6:30 p.m.	10.0 hours	

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Table 7.–Page 5 of 10.

Number[a]	Start Date	Start Time		End Date	End Time	Effective time	
AKN.24	26 Jun	9:30 a.m.	to	26 Jun	7:30 p.m.	10.0 hours	
AKN.28	27 Jun	10:30 a.m.	to	27 Jun	8:30 p.m.	10.0 hours	
AKN.31	28 Jun	11:00 a.m.	to	28 Jun	9:00 p.m.	10.0 hours	
AKN.34	29 Jun	12:30 p.m.	to	29 Jun	10:00 p.m.	10.0 hours	
AKN.37	30 Jun	12:30 p.m.	to	30 Jun	10:30 p.m.	10.0 hours	
AKN.39	1 Jul	1:30 p.m.	to	2 Jul	1:30 p.m.	24.0 hours	
AKN.44	2 Jul	2:00 p.m.	to	3 Jul	12:00 a.m.	10.0 hours	
AKN.47	3 Jul	2:30 p.m.	to	4 Jul	12:30 a.m.	10.0 hours	
AKN.51	4 Jul	3:30 p.m.	to	5 Jul	1:30 a.m.	10.0 hours	
AKN.54	6 Jul	4:30 p.m.	to	7 Jul	12:30 p.m.	20.0 hours	
AKN.57	8 Jul	6:30 a.m.	to	8 Jul	4:30 p.m.	10.0 hours	
AKN.60	9 Jul	7:00 a.m.	to	9 Jul	5:00 p.m.	10.0 hours	
AKN.62	10 Jul	8:00 a.m.	to	10 Jul	6:00 p.m.	10.0 hours	
AKN.63	11 Jul	8:30 a.m.	to	11 Jul	6:30 p.m.	10.0 hours	d
AKN.67	12 Jul	9:30 a.m.	to	12 Jul	5:30 p.m.	8.0 hours	
AKN.67	12 Jul	10:30 p.m.	to	13 Jul	9:30 a.m.	11.0 hours	
AKN.73	15 Jul	12:00 a.m.	to	16 Jul	12:00 a.m.	24.0 hours	
AKN.74	16 Jul	12:00 a.m.	to	23 Jul	9:00 a.m.		
AKN.77	23 Jul	9:00 a.m.	to	30 Jul	9:00 a.m.		
Nushagak District							
Nushagak Section							
Drift Net							
DLG.02	7 Jun	2:00 p.m.	to	7 Jun	10:00 p.m.	8.0 hours	e,f
DLG.04	10 Jun	5:00 a.m.	to	10 Jun	1:00 p.m.	8.0 hours	e,f
DLG.08	17 Jun	2:00 p.m.	to	17 Jun	7:00 p.m.	5.0 hours	e,f
DLG.16	25 Jun	3:00p.m.	to	25 Jun	7:00 p.m.	4.0 hours	c
DLG.18	25 Jun	7:00 p.m.	to	25 Jun	10:00 p.m.	3.0 hours	g
DLG.18	26 Jun	4:00 a.m.	to	26 Jun	10:00 a.m.	6.0 hours	
DLG.19	26 Jun	3:00 p.m.	to	26 Jun	9:00 p.m.	6.0 hours	
DLG.21	28 Jun	4:00 a.m.	to	28 Jun	11:00 a.m.	7.0 hours	
DLG.22	28 Jun	4:00 p.m.	to	29 Jun	1:00 a.m.	9.0 hours	
DLG.22	29 Jun	5:00 a.m.	to	29 Jun	12:00 p.m.	7.0 hours	
DLG.23	29 Jun	5:00 p.m.	to	30 Jun	2:00 a.m.	9.0 hours	
DLG.23	30 Jun	6:00 a.m.	to	30 Jun	1:00 p.m.	7.0 hours	
DLG.24	30 Jun	1:00 p.m.	to	30 Jun	9:00 p.m.	8.0 hours	g
DLG.24	1 Jul	7:00 a.m.	to	1 Jul	2:00 p.m.	7.0 hours	
DLG.24	1 Jul	6:00 p.m.	to	2 Jul	3:00 a.m.	9.0 hours	
DLG.25	2 Jul	3:00 a.m.	to	2 Jul	6:00 a.m.	3.0 hours	g
DLG.25	2 Jul	10:00 a.m.	to	2 Jul	5:00 p.m.	7.0 hours	
DLG.26	2 Jul	9:00 p.m.	to	3 Jul	5:00 a.m.	8.0 hours	
DLG.26	3 Jul	9:00 a.m.	to	3 Jul	4:00 p.m.	7.0 hours	
DLG.27	3 Jul	7:00 p.m.	to	4 Jul	2:00 a.m.	7.0 hours	
DLG.27	4 Jul	10:00 a.m.	to	4 Jul	3:00 p.m.	5.0 hours	

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Table 7.–Page 6 of 10.

Number[a]	Start Date	Start Time		End Date	End Time	Effective time	
DLG.28	4 Jul	8:30 p.m.	to	5 Jul	3:30 a.m.	7.0 hours	
DLG.28	5 Jul	9:00 a.m.	to	5 Jul	5:00 p.m.	8.0 hours	
DLG.34	9 Jul	1:00 a.m.	to	9 Jul	6:00 a.m.	5.0 hours	
DLG.34	9 Jul	12:00 p.m.	to	9 Jul	5:00 p.m.	5.0 hours	
DLG.35	10 Jul	12:30 a.m.	to	10 Jul	6:30 a.m.	6.0 hours	
DLG.35	10 Jul	12:00 p.m.	to	10 Jul	5:00 p.m.	5.0 hours	
DLG.36	11 Jul	1:00 a.m.	to	11 Jul	8:00 a.m.	7.0 hours	
DLG.36	11 Jul	12:00 p.m.	to	11 Jul	6:00 p.m.	6.0 hours	
DLG.37	11 Jul	6:00 p.m.	to	11 Jul	9:00 p.m.	3.0 hours	g
DLG.37	12 Jul	2:30 a.m.	to	12 Jul	11:30 a.m.	9.0 hours	
DLG.38	12 Jul	4:00 p.m.	to	13 Jul	1:00 a.m.	9.0 hours	
DLG.38	13 Jul	4:00 a.m.	to	13 Jul	12:00 p.m.	8.0 hours	
DLG.39	13 Jul	4:00 p.m.	to	14 Jul	1:00 a.m.	9.0 hours	
DLG.39	14 Jul	4:00 a.m.	to	14 Jul	1:00 p.m.	9.0 hours	
DLG.40	14 Jul	6:00 p.m.	to	15 Jul	1:00 a.m.	7.0 hours	
DLG.40	15 Jul	6:00 a.m.	to				h
DLG.47			to	24 Jul	12:00 p.m.	222.0 hours	
DLG.47	26 Jul	2:00 a.m.	to	26 Jul	5:00 p.m.	15.0 hours	
DLG.47	27 Jul	2:30 a.m.	to	27 Jul	5:30 p.m.	15.0 hours	i
DLG.48	28 Jul	3:00 a.m.	to	28 Jul	6:00 p.m.	15.0 hours	
DLG.48	29 Jul	4:00 a.m.	to	29 Jul	7:00 p.m.	15.0 hours	i
DLG.49	30 Jul	5:00 a.m.	to	30 Jul	5:00 p.m.	12.0 hours	
DLG.49	31 Jul	5:30 a.m.	to	31 Jul	8:30 p.m.	15.0 hours	i
DLG.49	2 Aug	6:30 a.m.	to	2 Aug	4:30 p.m.	10.0 hours	
DLG.50	3 Aug	7:00 a.m.	to	3 Aug	7:00 p.m.	12.0 hours	i
DLG.50	4 Aug	8:00 a.m.	to	4 Aug	4:00 p.m.	8.0 hours	
DLG.51	5 Aug	8:30 a.m.	to	5 Aug	6:30 p.m.	12.0 hours	i
DLG.51	7 Aug	10:00 a.m.	to	7 Aug	8:00 p.m.	10.0 hours	i
DLG.51	9 Aug	12:00 p.m.	to	9 Aug	10:00 p.m.	10.0 hours	i
DLG.52	10 Aug	1:00 p.m.	to	10 Aug	9:00 p.m.	8.0 hours	i
Nushagak Section							
Set Net							
DLG.02	7 Jun	9:00 a.m.	to	7 Jun	5:00 p.m.	8.0 hours	e
DLG.04	10 Jun	11:00 a.m.	to	10 Jun	7:00 p.m.	8.0 hours	e
DLG.08	17 Jun	5:30 p.m.	to	17 Jun	10:30 p.m.	5.0 hours	e
DLG.16	25 Jun	12:00 p.m.	to	25 Jun	8:00 p.m.	8.0 hours	c
DLG.18	25 Jun	8:00 p.m.	to	26 Jun	12:00 p.m.	16.0 hours	g
DLG 19	26 Jun	12:00 p.m.	to	26 Jun	9:00 p.m.	9.0 hours	g
DLG.20	27 Jun	2:00 a.m.	to	27 Jun	11:00 a.m.	9.0 hours	
DLG.21	27 Jun	2:00 p.m.	to	28 Jun	11:00 a.m.	21.0 hours	
DLG.22	28 Jun	3:00 p.m.	to	29 Jun	4:00 p.m.	25.0 hours	
DLG.23	29 Jun	4:00 p.m.	to	30 Jun	5:00 p.m.	25.0 hours	

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Table 7.–Page 7 of 10.

Number[a]	Start Date	Start Time		End Date	End Time	Effective time	
DLG.24	30 Jun	5:00 p.m.	to	30 Jun	9:00 p.m.	4.0 hours	g
DLG.24	1 Jul	5:00 a.m.	to	2 Jul	6:00 a.m.	25.0 hours	
DLG.25	2 Jul	6:00 a.m.	to	2 Jul	6:00 p.m.	12.0 hours	g
DLG.26	2 Jul	6:00 p.m.	to	3 Jul	7:00 p.m.	25.0 hours	g
DLG.27	3 Jul	7:00 p.m.	to	4 Jul	2:00 a.m.	7.0 hours	g
DLG.27	4 Jul	7:00 a.m.	to	5 Jul	8:00 a.m.	25.0 hours	
DLG.28	5 Jul	8:00 a.m.	to	5 Jul	8:00 p.m.	12.0 hours	g
DLG.29	5 Jul	8:00 p.m.	to	5 Jul	11:59 p.m.	4.0 hours	g
DLG.34	8 Jul	11:00 p.m.	to	9 Jul	7:00 a.m.	8.0 hours	
DLG.34	9 Jul	10:30 a.m.	to	9 Jul	5:30 p.m.	7.0 hours	
DLG.35	9 Jul	11:30 p.m.	to	10 Jul	7:30 a.m.	8.0 hours	
DLG.35	10 Jul	11:00 a.m.	to	10 Jul	6:00 p.m.	7.0 hours	
DLG.36	11 Jul	12:30 a.m.	to	11 Jul	4:30 p.m.	16.0 hours	
DLG.37	11 Jul	4:30 p.m.	to	12 Jul	5:30 p.m.	25.0 hours	
DLG.38	12 Jul	5:30 p.m.	to				h
DLG.47			to	24 Jul	12:00 p.m.	282.5 hours	
DLG.47	26 Jul	2:00 a.m.	to	26 Jul	5:00 p.m.	15.0 hours	
DLG.47	27 Jul	2:30 a.m.	to	27 Jul	5:30 p.m.	15.0 hours	i
DLG.48	28 Jul	3:00 a.m.	to	28 Jul	6:00 p.m.	15.0 hours	
DLG.48	29 Jul	4:00 a.m.	to	29 Jul	7:00 p.m.	15.0 hours	i
DLG.49	30 Jul	5:00 a.m.	to	30 Jul	5:00 p.m.	12.0 hours	
DLG.49	31 Jul	5:30 a.m.	to	31 Jul	8:30 p.m.	15.0 hours	i
DLG.49	2 Aug	6:30 a.m.	to	2 Aug	4:30 p.m.	10.0 hours	
DLG.50	3 Aug	7:00 a.m.	to	3 Aug	7:00 p.m.	12.0 hours	i
DLG.50	4 Aug	8:00 a.m.	to	4 Aug	4:00 p.m.	8.0 hours	
DLG.51	5 Aug	8:30 a.m.	to	5 Aug	6:30 p.m.	12.0 hours	i
DLG.51	7 Aug	10:00 a.m.	to	7 Aug	8:00 p.m.	10.0 hours	i
DLG.51	9 Aug	12:00 p.m.	to	9 Aug	10:00 p.m.	10.0 hours	i
DLG.52	10 Aug	1:00 p.m.	to	10 Aug	9:00 p.m.	8.0 hours	i
Igushik Section							
Drift Net							
DLG.02	7 Jun	2:00 p.m.	to	7 Jun	10:00 p.m.	8.0 hours	e,f
DLG.04	10 Jun	5:00 a.m.	to	10 Jun	1:00 p.m.	8.0 hours	e,f
DLG.08	17 Jun	2:00 p.m.	to	17 Jun	7:00 p.m.	5.0 hours	e,f
DLG.27	3 Jul	7:00 p.m.	to				h,
DLG.47			to	24 Jul	12:00 p.m.		
DLG.47	26 Jul	2:00 a.m.	to	26 Jul	5:00 p.m.	15.0 hours	
DLG.47	27 Jul	2:30 a.m.	to	27 Jul	5:30 p.m.	15.0 hours	i
DLG.48	28 Jul	3:00 a.m.	to	28 Jul	6:00 p.m.	15.0 hours	
DLG.48	29 Jul	4:00 a.m.	to	29 Jul	7:00 p.m.	15.0 hours	i
DLG.49	30 Jul	5:00 a.m.	to	30 Jul	5:00 p.m.	12.0 hours	
DLG.49	31 Jul	5:30 a.m.	to	31 Jul	8:30 p.m.	15.0 hours	i

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Table 7.–Page 8 of 10.

Number[a]	Start Date	Start Time		End Date	End Time	Effective time	
DLG.49	2 Aug	6:30 a.m.	to	2 Aug	4:30 p.m.	10.0 hours	
DLG.50	3 Aug	7:00 a.m.	to	3 Aug	7:00 p.m.	12.0 hours	i
DLG.50	4 Aug	8:00 a.m.	to	4 Aug	4:00 p.m.	8.0 hours	
DLG.51	5 Aug	8:30 a.m.	to	5 Aug	6:30 p.m.	12.0 hours	i
DLG.51	7 Aug	10:00 a.m.	to	7 Aug	8:00 p.m.	10.0 hours	i
DLG.51	9 Aug	12:00 p.m.	to	9 Aug	10:00 p.m.	10.0 hours	i
DLG.52	10 Aug	1:00 p.m.	to	10 Aug	9:00 p.m.	8.0 hours	i
Igushik Section							
Set Net							
DLG.06	16 Jun	4:00 p.m.	to	17 Jun	12:00 a.m.	8.0 hours	c
DLG.06	17 Jun	5:00 p.m.	to	18 Jun	1:00 a.m.	8.0 hours	
DLG.10	18 Jun	6:00 p.m.	to	19 Jun	2:00 a.m.	8.0 hours	
DLG.10	19 Jun	7:00 p.m.	to	20 Jun	3:00 a.m.	8.0 hours	
DLG 12	20 Jun	8:30 p.m.	to	21 Jun	4:30 a.m.	8.0 hours	
DLG.12	21 Jun	9:00 p.m.	to	22 Jun	5:00 a.m.	8.0 hours	
DLG.13	22 Jun	5:00 a.m.	to	22 Jun	3:00 p.m.	10.0 hours	g
DLG.13	23 Jun	10:30 a.m.	to	23 Jun	6:30 p.m.	8.0 hours	
DLG.14	24 Jun	11:30 a.m.	to	24 Jun	7:30 p.m.	8.0 hours	
DLG.14	25 Jun	12:00 p.m.	to	25 Jun	8:00 p.m.	8.0 hours	
DLG.16	26 Jun	1:00 p.m.	to	26 Jun	9:00 p.m.	8.0 hours	c
DLG.21	27 Jun	2:00 p.m.	to	27 Jun	10:00 p.m.	8.0 hours	
DLG.22	28 Jun	3:00 p.m.	to	28 Jun	11:00 p.m.	8.0 hours	
DLG.23	29 Jun	4:00 p.m.	to	30 Jun	5:00 p.m.	25.0 hours	
DLG.24	30 Jun	5:00 p.m.	to				g,h
DLG.47			to	24 Jul	12:00 p.m.		
DLG.47	26 Jul	2:00 a.m.	to	26 Jul	5:00 p.m.	15.0 hours	
DLG.47	27 Jul	2:30 a.m.	to	27 Jul	5:30 p.m.	15.0 hours	i
DLG.48	28 Jul	3:00 a.m.	to	28 Jul	6:00 p.m.	15.0 hours	
DLG.48	29 Jul	4:00 a.m.	to	29 Jul	7:00 p.m.	15.0 hours	i
DLG.49	30 Jul	5:00 a.m.	to	30 Jul	5:00 p.m.	12.0 hours	
DLG.49	31 Jul	5:30 a.m.	to	31 Jul	8:30 p.m.	15.0 hours	i
DLG.49	2 Aug	6:30 a.m.	to	2 Aug	4:30 p.m.	10.0 hours	
DLG.50	3 Aug	7:00 a.m.	to	3 Aug	7:00 p.m.	12.0 hours	i
DLG.50	4 Aug	8:00 a.m.	to	4 Aug	4:00 p.m.	8.0 hours	
DLG.51	5 Aug	8:30 a.m.	to	5 Aug	6:30 p.m.	12.0 hours	i
DLG.51	7 Aug	10:00 a.m.	to	7 Aug	8:00 p.m.	10.0 hours	i
DLG.51	9 Aug	12:00 p.m.	to	9 Aug	10:00 p.m.	10.0 hours	i
DLG.52	10 Aug	1:00 p.m.	to	10 Aug	9:00 p.m.	8.0 hours	i
Wood River Special Harvest Area							
Drift Net							
DLG.29	6 Jul	8:00 a.m.	to	6 Jul	2:00 p.m.	6.0 hours	
DLG.32	6 Jul	11:30 p.m.	to	7 Jul	6:30 a.m.	7.0 hours	

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Table 7.–Page 9 of 10.

Number[a]	Start Date	Start Time		End Date	End Time	Effective time
DLG.32	7 Jul	10:30 a.m.	to	7 Jul	4:30 p.m.	6.0 hours
DLG.33	8 Jul	12:30 a.m.	to	8 Jul	7:30 a.m.	7.0 hours
DLG.33	8 Jul	11:30 a.m.	to	8 Jul	5:30 p.m.	6.0 hours
DLG.34	8 Jul	11:00 p.m.	to	9 Jul	7:00 a.m.	8.0 hours
DLG.34	9 Jul	11:00 a.m.	to	9 Jul	5:00 p.m.	6.0 hours
DLG.35	9 Jul	11:30 p.m.	to	10 Jul	7:30 a.m.	8.0 hours
DLG.35	10 Jul	12:00 p.m.	to	10 Jul	6:00 p.m.	6.0 hours
DLG.36	11 Jul	2:00 a.m.	to	11 Jul	6:00 a.m.	4.0 hours
DLG.36	11 Jul	1:30 p.m.	to	11 Jul	5:30 p.m.	4.0 hours
DLG.37	12 Jul	2:30 a.m.	to	12 Jul	7:30 a.m.	5.0 hours
DLG.38	12 Jul	1:30 p.m.	to	12 Jul	6:30 p.m.	5.0 hours
DLG.38	13 Jul	3:30 a.m.	to	13 Jul	8:30 a.m.	5.0 hours
DLG.39	14 Jul	3:30 a.m.	to	14 Jul	8:30 a.m.	5.0 hours
DLG.39	14 Jul	4:45 p.m.	to	14 Jul	9:45 p.m.	5.0 hours
DLG.40	15 Jul	5:30 a.m.	to	15 Jul	10:30 a.m.	5.0 hours
DLG.41	16 Jul	6:00 a.m.	to	16 Jul	11:00 a.m.	5.0 hours
DLG.41	16 Jul	6:30 p.m.	to	16 Jul	11:30 p.m.	5.0 hours
DLG.43	17 Jul	8:00 a.m.	to	17 Jul	1:00 p.m.	5.0 hours
DLG.43	18 Jul	9:00 a.m.	to	18 Jul	2:00 p.m.	5.0 hours
DLG.43	18 Jul	10:30 p.m.	to	19 Jul	2:30 a.m.	4.0 hours
DLG.43	19 Jul	10:30 a.m.	to	19 Jul	2:30 p.m.	4.0 hours
DLG.45	20 Jul	11:00 a.m.	to	20 Jul	3:00 p.m.	4.0 hours
Wood River Special Harvest Area						
Set Net						
DLG.29	6 Jul	7:00 a.m.	to	6 Jul	2:00 p.m.	7.0 hours
DLG.32	6 Jul	11:00 p.m.	to	7 Jul	6:30 a.m.	7.5 hours
DLG.32	7 Jul	10:00 a.m.	to	7 Jul	4:30 p.m.	6.5 hours
DLG.33	8 Jul	12:00 a.m.	to	8 Jul	7:30 a.m.	7.5 hours
DLG.33	8 Jul	11:00 a.m.	to	8 Jul	5:30 p.m.	6.5 hours
DLG.34	8 Jul	11:00 p.m.	to	9 Jul	7:00 a.m.	8.0 hours
DLG.34	9 Jul	11:00 a.m.	to	9 Jul	5:00 p.m.	6.0 hours
DLG.35	9 Jul	11:30 p.m.	to	10 Jul	7:30 a.m.	8.0 hours
DLG.35	10 Jul	12:00 p.m.	to	10 Jul	6:00 p.m.	6.0 hours
DLG.36	11 Jul	2:00 a.m.	to	11 Jul	6:00 a.m.	4.0 hours
DLG.36	11 Jul	1:30 p.m.	to	11 Jul	5:30 p.m.	4.0 hours
DLG.37	12 Jul	2:30 a.m.	to	12 Jul	7:30 a.m.	5.0 hours
DLG.38	12 Jul	1:30 p.m.	to	12 Jul	6:30 p.m.	5.0 hours
DLG.38	13 Jul	3:30 a.m.	to	13 Jul	8:30 a.m.	5.0 hours
DLG.39	14 Jul	3:30 a.m.	to	14 Jul	8:30 a.m.	5.0 hours
DLG.39	14 Jul	4:45 p.m.	to	14 Jul	9:45 p.m.	5.0 hours
DLG.40	15 Jul	5:30 a.m.	to	15 Jul	10:30 a.m.	5.0 hours
DLG.41	16 Jul	6:00 a.m.	to	16 Jul	11:00 a.m.	5.0 hours
DLG.41	16 Jul	6:30 p.m.	to	16 Jul	11:30 p.m.	5.0 hours

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Table 7.–Page 10 of 10.

Number[a]	Start Date	Start Time		End Date	End Time	Effective time	
DLG.43	17 Jul	8:00 a.m.	to	17 Jul	1:00 p.m.	5.0 hours	
DLG.43	18 Jul	9:00 a.m.	to	18 Jul	2:00 p.m.	5.0 hours	
DLG.43	18 Jul	10:30 p.m.	to	19 Jul	2:30 a.m.	4.0 hours	
DLG.43	19 Jul	10:30 a.m.	to	19 Jul	2:30 p.m.	4.0 hours	
DLG.45	20 Jul	11:00 a.m.	to	20 Jul	3:00 p.m.	4.0 hours	
Togiak District							
Drift and Set Net							
DLG.11	24 Jun	9:00 a.m.	to	25 Jun	9:00 a.m.	24.0 hours	[k]
DLG.17	30 Jun	9:00 a.m.	to	2 Jul	9:00 a.m.	48.0 hours	[k]
DLG.46	23 Jul	9:00 a.m.	to	25 Jul	9:00 a.m.	48.0 hours	[l]

[a] Prefix code on emergency orders indicates where announcement originated. ("AKN" for King Salmon field office and "DLG" for Dillingham field office.)

[b] Weekly schedule: 9:00 a.m. Monday until 9:00 a.m. Friday.

[c] Gillnet mesh size is restricted to 5 and 1/2 inches or less.

[d] The 48-hour waiting period waived.

[e] Gillnet mesh size is restricted to 7 and 1/2 inches or larger.

[f] Includes the Chinook Area.

[g] Extends current fishing period.

[h] Commercial fishing open until further notice.

[i] Gillnet mesh size is restricted to 4 and 3/4 inches or less.

[j] Reduced the weekly fishing schedule in sections of the Togiak District.

[k] Extends the weekly fishing schedule in sections of the Togiak District.

Table 8.–Daily district registration of drift gillnet permit holders by district, Bristol Bay, 2010.

Date	Naknek Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
19 Jun[a]						0
20 Jun[a]						0
21 Jun						0
22 Jun[a]						0
23 Jun[a]						0
24 Jun[a]						0
25 Jun[b]	230	421	70	380	41	1,142
26 Jun	257	444	82	380	41	1,204
27 Jun	277	447	91	437	41	1,293
28 Jun	289	439	91	444	41	1,304
29 Jun	292	436	94	447	42	1,311
30 Jun	306	413	95	448	46	1,308
1 Jul	319	408	102	453	47	1,329
2 Jul	339	404	114	450	48	1,355
3 Jul	341	383	117	444	49	1,334
4 Jul	344	379	127	441	50	1,341
5 Jul	354	369	150	432	50	1,355
6 Jul	355	370	161	423	50	1,359
7 Jul	364	358	175	417	50	1,364
8 Jul	380	342	178	407	54	1,361
9 Jul	388	331	188	405	54	1,366
10 Jul	412	279	190	404	54	1,339
11 Jul	506	268	193	393	54	1,414
12 Jul	484	216	196	360	54	1,310
13 Jul	648	191	189	335	54	1,417
14 Jul	660	186	204	335	54	1,439
15 Jul	718	156	205	335	54	1,468
16 Jul	738	155	197	330	54	1,474
Average	409	336	146	405	49	1,345

Note: Blank cells indicate no data.

[a] Registration information not available.

[b] Registration not required until June 25 in east side districts.

Table 9.–Commercial salmon catch by date and species, in numbers of fish, Naknek-Kvichak District, Bristol Bay, 2010.

Date		Hours fished		Deliveries		Sockeye	Chinook	Chum	Pink	Coho	Total
		Drift	Set	Drift	Set						
15 Jun	[a]	14	14	1	1						
16 Jun	[a]	24	24	4		83	0	1	0	0	84
17 Jun	[a]	24	24	15	1	568	0	14	0	0	582
18 Jun	[a]	24	24	9		668	0	14	0	0	682
19 Jun											
20 Jun											
21 Jun	[a]	9	9	254	12	23,658	19	645	0	0	24,322
22 Jun	[a]	14	14	314	89	36,519	25	634	0	0	37,178
23 Jun	[a]	9	9	64	43	12,989	14	205	0	0	13,208
24 Jun	[a]	7	8	244	129	33,409	8	517	0	0	33,934
25 Jun	[a]	7	8	230	121	45,683	4	542	0	0	46,229
26 Jun	[a]	7	8	257	177	155,977	14	1,866	0	0	157,857
27 Jun	[a]	8	9.0/8.0	287	469	500,289	2	6,281	0	0	506,572
28 Jun	[a]	6.0/7.0	9.5/7.0	517	489	375,407	3	13,434	0	0	388,844
29 Jun	[a]	9.5/7.0	9.5/7.0	471	388	191,909	2	2,738	0	0	194,649
30 Jun	[a]	10.5/8.0	9.5/7.0	505	308	140,054	1	2,854	0	0	142,909
1 Jul	[a]	10.5/8.0	9.5/7.0	561	347	469,977	1	3,237	0	0	473,215
2 Jul	[a]	10.0/8.5	9.0/7.5	603	486	370,354	5	1,713	0	0	372,072
3 Jul	[a]	10.0/9.5	9.0/8.5	495	372	387,687	10	1,787	0	0	389,484
4 Jul	[a]	8.5/8.5	8.5/8.5	620	511	448,687	8	2,376	0	0	451,071
5 Jul	[a]	8.5/9.0	8.5/9.0	474	493	376,023	16	1,699	0	0	377,738
6 Jul	[a]	8.5/8.5	8.5/8.5	623	594	686,428	3	2,144	0	0	688,575
7 Jul	[a]	8.0/10.5	8.0/9.0	648	498	480,059	6	1,685	0	0	481,750
8 Jul	[a]	10.5/11.0	17	638	410	361,171	4	1,975	0	0	363,150
9 Jul	[a]	22	20	646	383	430,790	26	1,426	0	0	432,242
10 Jul	[a]	20	17	680	399	687,407	15	4,061	0	0	691,483
11 Jul		20	18	735	352	935,992	13	14,151	0	0	950,156
12 Jul		20	19	720	406	535,687	32	19,227	0	0	554,946
13 Jul		21	21	846	288	290,523	26	8,617	0	0	299,166
14 Jul		24	24	910	265	994,520	20	19,932	0	0	1,014,472
15 Jul		24	24	1,035	263	656,496	9	22,324	0	0	678,829
16 Jul		24	24	843	179	242,998	9	12,128	0	0	255,135
17 Jul		24	24	569	107	160,460	2	6,914	0	0	167,376
18 Jul		24	24	472	134	166,605	8	38,964	0	0	205,577

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Table 9.–Page 2 of 2.

Date	Hours fished		Deliveries		Sockeye	Chinook	Chum	Pink	Coho	Total
	Drift	Set	Drift	Set						
19 Jul	24	24	424	105	179,397	13	26,728	0	0	206,138
20 Jul	24	24	348	122	100,164	11	17,964	0	0	118,139
21 Jul	24	24	233	77	71,907	7	13,129	0	0	85,043
22 Jul	24	24	243	82	58,815	7	12,443	0	0	71,265
23 Jul	9	9	53	25	17,747	0	3,868	0	0	21,615
24 Jul										
25 Jul										
26 Jul	15	15	112	33	19,138	0	35,624	1,050	152	55,964
27 Jul	24	24	95	68	7,594	14	19,874	2,643	95	30,220
28 Jul	24	24	26	55	3,015	6	5,172	1,711	89	9,993
29 Jul	24	24	14	45	1,300	1	1,433	1,041	116	3,891
30 Jul	9	9	1	3	96	0	0	27	2	125
1 Aug										
2 Aug										
3 Aug	15	15	2	1	353	2	0	971	168	1,494
4 Aug	24	24	2	1	218	0	0	433	220	871
5 Aug [b]	24	24	1	3	235	1	0	361	102	699
6 Aug										
7 Aug										
8 Aug										
9 Aug										
10 Aug [b]	24	24	1	1	19	0	0	0	62	81
Total					10,659,115	369	330,342	8,237	1,006	10,999,069

Note: Blank cells represent days with no data.

[a] Fishery was restricted to the Naknek Section only for drift gillnet gear.

[b] Less than 4 permit holders fished, harvest confidential.

Table 10.–Commercial salmon catch by date and species, in numbers of fish, Egegik District, Bristol Bay, 2010.

Date	Hours fished		Deliveries		Sockeye	Chinook	Chum	Pink	Coho	Total
	Drift	Set	Drift	Set						
9 Jun	24	24		5	83					83
10 Jun	24	24		13	322					322
11 Jun [a]	9	9								
12 Jun										
13 Jun										
14 Jun	15	15	32	25	3,639	2	198			3,839
15 Jun	24	24	46	38	4,485		210			4,695
16 Jun	9	9	83	46	10,644	2	497			11,143
17 Jun										
18 Jun	9	9	233	88	27,198		883			28,081
19 Jun										
20 Jun		3.25		123	10,588		57			10,645
21 Jun	5	10.75	330	121	61,507		1,162			62,669
22 Jun										
23 Jun	4	8	490	199	102,687	1	2,017			104,705
24 Jun	4	8	489	170	112,709	10	2,277			114,996
25 Jun	4	8	421	184	256,845	2	1,957			258,804
26 Jun	4	8.25	444	191	405,061	5	3,695			408,761
27 Jun	5	15.75	407	299	244,824	4	1,746			246,574
28 Jun	5	8	451	244	425,877	7	3,201			429,085
29 Jun	4	8	427	203	140,739		2,068			142,807
30 Jun	4.5	8	399	172	195,597	10	1,359			196,966
1 Jul	4	8	397	141	163,105	1	1,163			164,269
2 Jul										
3 Jul	9	15.5	696	371	535,673	2	2,854			538,529
4 Jul	8	7	772	198	289,055	3	1,844			290,902
5 Jul	8	9.5	309	109	111,583		721			112,304
6 Jul	4.5	4.75	252	155	225,015		659			225,674
7 Jul	5.5	15.25	428	311	290,383		1,424			291,807
8 Jul	8.5	12	571	237	358,060	1	1,756			359,817
9 Jul	5.5	8	356	113	105,570	1	684			106,255
10 Jul	2.5	2.5								
11 Jul	7.5	13.5	422	257	290,117		4,334			294,451
12 Jul										
13 Jul										
14 Jul										
15 Jul										
16 Jul	8.25	8.25	76	161	98,725		734			99,459
17 Jul	24	24	213	152	175,832	1	4,010			179,843
18 Jul	24	24	260	130	108,584		5,262			113,846
19 Jul	24	24	136	126	60,030	1	2,103			62,134
20 Jul	24	24	82	86	36,882	1	1,369			38,252
21 Jul	24	24	67	61	31,157		1,538			32,695

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Table 10.–Page 2 of 2.

Date		Hours fished		Deliveries		Sockeye	Chinook	Chum	Pink	Coho	Total
		Drift	Set	Drift	Set						
22 Jul		24	24	59	45	22,702		2,249			24,951
23 Jul		24	24	31	21	8,242		653			8,895
24 Jul		24	24	42	13	13,629		1,281			14,910
25 Jul		24	24	23	19	5,813		710			6,523
26 Jul		24	24	14	22	3,420		149	24	83	3,676
27 Jul		24	24	16	34	7,865	1	187	84	200	8,337
28 Jul		24	24	19	25	6,883		225	219	265	7,592
29 Jul		24	24	13	22	3,760		112	120	281	4,273
30 Jul		9	9	3	7	740		37	18	46	841
31 Jul											0
1 Aug											0
2 Aug		15	15	15	21	1,990		282	188	869	3,329
3 Aug		24	24	9	14	1,020	1	218	120	450	1,809
4 Aug		24	24	10	12	1,140		263	183	708	2,294
5 Aug		24	24	9	23	981		292	139	706	2,118
6 Aug	[a]	9	9								
7 Aug											0
8 Aug											0
9 Aug		15	15	13	9	396		101	78	632	1,207
10 Aug		24	24	15	13	590		206	175	1,005	1,976
11 Aug		24	24	14	8	338		122	129	728	1,317
12 Aug		24	24	14	13	440		86	147	1,007	1,680
13 Aug		9	9	2	7	93		13	26	300	432
14 Aug											0
15 Aug											0
16 Aug	[a]	15	15								
17 Aug		24	24	3	4	42		4	3	144	193
18 Aug		24	24								0
19 Aug	[a]	24	24								
20 Aug		9	9								0
21 Aug											0
22 Aug											0
23 Aug	[a]	15	15								
24 Aug		24	24	3	2	62				714	776
25 Aug		24	24	2	2	52				641	693
26 Aug	[a]	24	24								
27 Aug		9	9								
28 Aug											
29 Aug											
30 Aug		15	15								
Totals		945	1,024	9,625	5,077	4,963,049	56	58,979	1,655	9,984	5,033,723

Note: Blank cells represent days with no data.

[a] Less than 4 permits; records are confidential.

Table 11.–Commercial salmon catch by date and species, in numbers of fish, Ugashik District, Bristol Bay, 2010.

Date	Hours fished		Deliveries		Sockeye	Chinook	Chum	Pink	Coho	Total
	Drift	Set	Drift	Set						
10 Jun	24	24								
11 Jun	9	9								
12 Jun										
13 Jun										
14 Jun [a]	15	15								
15 Jun	24	24	13		921	11	0			932
16 Jun	24	24	17	1	1,653	26	68			1,747
17 Jun	24	24	23	6	3,789	46	162			3,997
18 Jun	9	9	14		1,437	37	62			1,536
19 Jun										0
20 Jun										0
21 Jun	8	8	81	8	11,476	17	403			11,896
22 Jun										0
23 Jun	8	8	98	15	27,067	25	852			27,944
24 Jun	6	6	106	12	11,786	26	437			12,249
25 Jun	8	10	70	16	55,299	11	757			56,067
26 Jun	8	10	82	26	95,464	9	989			96,462
27 Jun	8	10	90	30	69,087	8	800			69,895
28 Jun	8	10	91	53	134,760	3	1,217			135,980
29 Jun	8	10	94	35	119,276	16	714			120,006
30 Jun	7	10	98	41	141,158	9	1,181			142,348
1 Jul	12	12	125	82	206,647	10	1,112			207,769
2 Jul	8	10	122	43	164,585	4	661			165,250
3 Jul	6	9.5	112	48	183,891	8	776			184,675
4 Jul	6	9	169	44	167,994	2	938			168,934
5 Jul		1.5								0
6 Jul	5	7.5	161	53	223,779	7	831			224,617
7 Jul	5	12.5	182	71	121,422	8	714			122,144
8 Jul	5	10	182	88	200,474	6	1,281			201,761
9 Jul	8	10	189	60	274,658	1	3,674			278,333
10 Jul	8	10	166	76	257,093	2	2,846			259,941
11 Jul	8	10	203	86	326,545	1	4,872			331,418
12 Jul	8	9.5	188	59	121,455	3	2,662			124,120
13 Jul	11	15.5	244	42	143,012	1	2,651			145,664
14 Jul										0
15 Jul	24	24	236	46	179,101	3	6,640			185,744
16 Jul	24	24	194	38	123,355	1	3,514			126,870
17 Jul	24	24	202	32	121,835	1	4,635			126,471
18 Jul	24	24	171	24	117,093	3	4,272			121,368
19 Jul	24	24	185	21	104,199	3	5,277			109,479
20 Jul	24	24	158	17	79,773		2,421			82,194
21 Jul	24	24	142	20	47,398	2	4,950			52,350

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Table 11.–Page 2 of 2.

Date		Hours fished		Deliveries		Sockeye	Chinook	Chum	Pink	Coho	Total
		Drift	Set	Drift	Set						
22 Jul		24	24	79	14	39,066	1	1,476			40,543
23 Jul		24	24	40	4	15,483		1,324			16,807
24 Jul		24	24	44	5	16,069		1,396			17,465
25 Jul		24	24	43	7	20,015	1	468			20,484
26 Jul		24	24	16	3	10,277		329			10,606
27 Jul		24	24	28	4	19,499		624			20,123
28 Jul		24	24	15	3	11,398		221			11,619
29 Jul		24	24	21	1	11,624		225			11,849
30 Jul		24	24	10	3	4,035		78			4,113
31 Jul											0
1 Aug		24	24	13	2	3,476		108			3,584
2 Aug		9	9	9	3	3,046		0			3,046
3 Aug											0
4 Aug											0
5 Aug		15	15	13	2	1,540		0			1,540
6 Aug		24	24								0
7 Aug		24	24								0
8 Aug		24	24								0
9 Aug		9	9								0
10 Aug											0
11 Aug											0
12 Aug	[a]	15	15								
13 Aug		24	24								0
14 Aug		24	24								0
15 Aug	[a]	24	24								
16 Aug		9	9								0
17 Aug											0
18 Aug											0
19 Aug		15	15								0
20 Aug	[a]	24	24								
21 Aug	[a]	24	24								
22 Aug	[a]	24	24								
23 Aug		9	9								0
24 Aug											0
25 Aug											0
26 Aug		15	15								0
27 Aug	[a]	24	24								
28 Aug		24	24								0
29 Aug	[a]	24	24								0
30 Aug		9	9								
Totals		1,089	1,139	4,548	1,246	3,993,080	314	68,617	0	467	4,062,478

Note: Blank cells represent days with no data.

[a] Less than 4 permits; records are confidential.

Table 12.–Commercial salmon catch by date and species, in numbers of fish, Nushagak District, Bristol Bay, 2010.

	Hours fished		Deliveries							
Date	Nushagak	Igushik	Drift	Set	Sockeye	Chinook	Chum	Pink	Coho	Total
7 Jun [a]	8/8 [b]	8/0 [b]	1	0						
8 Jun										
9 Jun										
10 Jun	8/8 [b]	8/0 [b]	8	2	2	102	10	0	0	114
11 Jun										
12 Jun										
13 Jun										
14 Jun										
15 Jun										
16 Jun	0/0	0/8	0	5	180	4	0	0	0	184
17 Jun	5/5 [b]	5/7 [b]	24	33	478	1,041	184	0	0	1,703
18 Jun	0/0	0/7	0	11	180	0	2	0	0	182
19 Jun	0/0	0/7	0	18	873	0	8	0	0	881
20 Jun	0/0	0/6.5	0	22	882	2	5	0	0	889
21 Jun	0/0	0/7.5	24	30	1,226	3	29	0	0	1,258
22 Jun	0/0	0/15	67	19	1,576	28	34	0	0	1,638
23 Jun	0/0	0/8	256	48	2,244	11	17	0	0	2,272
24 Jun	0/0	0/8	363	51	1,937	23	25	0	0	1,985
25 Jun	7/12	0/8	360	300	256,819	5,873	96,816	3	0	359,511
26 Jun	12/21	0/8	769	324	390,377	6,721	72,773	2	0	469,873
27 Jun	7/19	0/8	348	536	446,562	1,858	40,398	5	1	488,824
28 Jun	15/20	0/8	793	591	729,274	2,121	56,520	9	1	787,925
29 Jun	15/24	0/24	763	419	357,797	1,644	26,858	9	0	386,308
30 Jun	17/21	0/24 [c]	764	410	338,171	1,295	25,346	10	1	364,823
1 Jul	13/19	0/24 [c]	552	453	449,609	1,533	23,695	16	1	474,854
2 Jul	16/24	0/24 [c]	794	389	379,982	776	19,948	7	3	400,716
3 Jul	17/24	5/24 [c]	738	334	309,448	416	17,045	8	0	326,917
4 Jul	13.5/19	24/24 [c]	683	330	601,424	297	19,118	2	0	620,841
5 Jul	11.5/16	24/24 [c]	666	443	462,746	406	17,695	8	0	480,855
6 Jul	0/0	24/24 [c]	347	303	272,889	137	7,223	2	0	280,251
7 Jul	0/0	24/24 [c]	589	301	387,259	135	4,134	4	0	391,532
8 Jul	0/1	24/24 [c]	554	303	285,493	111	2,482	0	0	288,086
9 Jul	10/14.5	24/24 [c]	708	458	623,146	233	13,588	20	0	636,987

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Table 12.–Page 2 of 3.

Date	Hours fished Nushagak	Hours fished Igushik	Deliveries Drift	Deliveries Set	Sockeye	Chinook	Chum	Pink	Coho	Total
10 Jul	11/14	24/24 [c]	566	431	526,463	92	10,793	29	0	537,377
11 Jul	16/23.5	24/24 [c]	499	391	311,391	98	6,286	25	0	317,800
12 Jul	17/24 [c]	24/24 [c]	428	385	216,418	78	5,383	89	2	221,970
13 Jul	17/24 [c]	24/24 [c]	429	330	213,380	97	6,188	502	4	220,171
14 Jul	16/24 [c]	24/24 [c]	381	345	197,454	106	8,129	522	7	206,218
15 Jul	12/24 [c]	24/24 [c]	337	323	197,186	68	7,789	1,854	36	206,933
16 Jul	24/24 [c]	24/24 [c]	298	262	108,453	44	4,513	2,491	43	115,544
17 Jul	24/24 [c]	24/24 [c]	173	143	60,444	40	2,421	4,049	53	67,007
18 Jul	24/24 [c]	24/24 [c]	132	197	61,578	70	3,174	7,173	574	72,569
19 Jul	24/24 [c]	24/24 [c]	105	173	46,253	39	3,783	6,910	1,260	58,245
20 Jul	24/24 [c]	24/24 [c]	57	140	24,120	21	2,665	8,912	2,045	37,763
21 Jul	24/24 [c]	24/24 [c]	39	120	14,763	9	1,402	8,007	1,101	25,282
22 Jul	24/24 [c]	24/24 [c]	57	127	16,975	16	2,050	14,949	621	34,611
23 Jul	24/24 [c]	24/24	15	82	6,532	9	485	4,624	1,773	13,423
24 Jul	12/12	12/12	4	38	2,214	1	73	1,688	313	4,289
25 Jul										
26 Jul	15/15	15/15	50	101	2,432	8	108	92,361	3,579	98,488
27 Jul	15/15	15/15	43	66	924	2	83	83,478	1,216	85,703
28 Jul	15/15	15/15	61	67	848	2	150	109,109	7,295	117,404
29 Jul	15/15	15/15	54	58	292	1	95	87,469	6,798	94,655
30 Jul	12/12	12/12	78	50	115	3	52	49,673	5,318	55,161
31 Jul	15/15	15/15	65	55	122	0	24	158,619	4,293	163,058
1 Aug										
2 Aug	10/10	10/10	93	65	134	2	10	199,620	9,746	209,512
3 Aug	12/12	12/12	109	75	98	1	10	173,949	9,190	183,248
4 Aug	8/8	8/8	104	56	67	1	5	104,722	3,864	108,659
5 Aug	12/12	12/12	93	41	25	2	1	98,111	4,377	102,516
6 Aug										
7 Aug	10/10	10/10	68	7	17	0	3	51,215	1,991	53,226
8 Aug										
9 Aug	10/10	10/10	43	2	5	0	0	15,328	2,714	18047
10 Aug	10/10	10/10	16	1	6	0	0	4,387	966	5359
Total [d]	614/748	660/877	14,567	10,264	8,309,283	25,580	509,628	1,289,970	69,186	10,203,647

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Table 12.–Page 3 of 3.

	Wood River Special Harvest Area[e]									
	Hours fished		Deliveries							
Date	Drift	Set	Drift	Set	Sockeye	Chinook	Chum	Pink	Coho	Total
6 Jul	6.5	8.0	195	77	78,626	82	922	2	0	79,632
7 Jul	12.5	13.0	299	189	232,418	100	1,271	4	0	233,793
8 Jul	14.0	15.0	291	184	196,438	66	983	0	0	197,487
9 Jul	13.5	13.5	187	133	252,330	19	1,232	1	0	253,582
10 Jul	13.5	13.5	198	96	169,201	25	1,096	1	0	170,323
11 Jul	8.0	8.0	212	75	93,503	15	433	7	0	93,958
12 Jul	10.0	10.0	137	58	50,022	12	185	13	0	50,232
13 Jul	5.0	5.0	30	24	9,284	0	25	7	0	9,316
14 Jul	10.0	10.0	29	42	12,808	13	150	39	0	13,010
15 Jul	5.0	5.0	11	15	8,196	8	28	14	0	8,246
16 Jul	10.0	10.0	18	32	6,009	4	223	167	6	6,409
17 Jul	5.0	5.0	4	12	1,949	2	43	99	1	2,094
18 Jul	6.5	6.5	3	7	1,483	7	65	149	1	1,705
19 Jul	6.5	6.5	8	9	2,438	7	220	499	11	3,175
20 Jul	4.0	4.0	6	7	1,782	0	31	580	53	2,446
Total	130	133	1,628	960	1,116,487	360	6,907	1,582	72	1,125,408

Note: Blank cells represent days with no data.

[a] Less than 4 permits; records are confidential.

[b] Includes the Chinook area.

[c] Fishing extended until further notice.

[d] Includes effort and harvest in the WRSHA.

[e] Daily summary of effort and harvest in the WRSHA.

Table 13.–Commercial salmon catch by date and species, in numbers of fish, Togiak District, Bristol Bay, 2010.

Date [a]	Sockeye	Chinook	Chum	Pink	Coho	Total
21 Jun	994	77	558	0	0	1,629
22 Jun	1,172	102	1,233	0	0	2,507
23 Jun	1,476	74	1,089	0	0	2,639
24 Jun	357	16	312	0	0	685
28 Jun	6,489	296	3,435	0	0	10,220
29 Jun	16,078	243	5,211	0	0	21,532
30 Jun	9,917	175	3,284	0	0	13,376
1 Jul						
2 Jul	7,474	333	2,515	3	0	10,325
3 Jul	10,607	266	2,943	10	0	13,826
4 Jul						
5 Jul	16,342	464	3,893	3	1	20,703
6 Jul	19,132	334	4,533	0	0	23,999
7 Jul	33,951	313	5,215	6	0	39,485
8 Jul	18,323	329	5,639	7	0	24,298
9 Jul	20,975	194	3,759	6	0	24,934
10 Jul	15,836	206	2,904	0	0	18,946
11 Jul	97	0	0	0	0	97
12 Jul	32,662	155	5,376	12	0	38,205
13 Jul	35,578	278	11,156	13	0	47,025
14 Jul	32,287	191	5,855	27	0	38,360
15 Jul	18,919	171	5,786	23	0	24,899
16 Jul	27,775	91	5,373	9	0	33,248
17 Jul						
18 Jul						
19 Jul	35,349	123	4,192	118	0	39,782
20 Jul	32,198	110	4,602	146	0	37,056
21 Jul	34,177	93	4,174	432	2	38,878
22 Jul	28,607	97	5,564	383	0	34,651
23 Jul	20,648	38	2,207	388	0	23,281
24 Jul	35,542	37	3,395	899	0	39,873

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Table 13.–Page 2 of 2.

Date [a]	Sockeye	Chinook	Chum	Pink	Coho	Total
25 Jul	14,044	10	1,061	832	0	15,947
26 Jul	32,179	44	2,389	1,318	8	35,938
27 Jul	34,115	70	6,404	7,008	6	47,603
28 Jul	17,826	36	3,288	4,766	12	25,928
29 Jul	19,843	17	3,430	4,614	18	27,922
30 Jul	8,142	9	592	3,596	17	12,356
1 Aug						
2 Aug	8,049	13	912	6,134	386	15,494
3 Aug	8,538	26	632	5,790	439	15,425
4 Aug	6,463	19	426	2,434	524	9,866
5 Aug	3,091	5	149	679	185	4,109
6 Aug	306	0	27	0	19	352
7 Aug						
8 Aug						
9 Aug						
10 Aug	393	0	5	0	108	506
11 Aug	865	2	17	0	200	1,084
12 Aug	864	6	27	0	349	1,246
13 Aug	253	4	6	0	90	353
14 Aug						
15 Aug						
16 Aug	137	0	4	0	271	412
17 Aug	317	1	25	0	404	747
18 Aug	403	1	25	0	662	1,091
19 Aug	590	2	13	0	1,261	1,866
20 Aug	128	0	2	0	143	273
23 Aug	65	4	7	4	1,396	1,476
24 Aug	77	2	9	4	2,324	2,416
25 Aug	105	2	11	12	3,164	3,294
26 Aug	96	1	14	16	4,544	4,671
27 Aug	14	0	2	4	218	238
30 Aug	18	0	4	16	1,325	1,363
31 Aug	62	0	12	12	2,359	2,445
1 Sep	27	1	5	1	1,214	1,248
2 Sep	19	1	2	9	1,999	2,030
3 Sep	0	0	0	0	82	82
Total	669,991	5,082	123,703	39,734	23,730	862,240

Note: Blank cells indicate no data.

[a] See Table 7 for inseason adjustments to the regular weekly fishing schedule.

[b] Less than 4 permits; records are confidential.

Table 14.–Commercial salmon catch by date and species, in numbers of fish, Togiak River Section, Bristol Bay, 2010.

Date[a]	Deliveries		Sockeye	Chinook	Chum	Pink	Coho	Total
	Drift	Set						
21 Jun	9	17	898	77	464	0	0	1,439
22 Jun	6	25	932	96	1,047	0	0	2,075
23 Jun	9	27	1,236	68	903	0	0	2,207
24 Jun	2	13	357	16	312	0	0	685
25 Jun								
26 Jun								
27 Jun								
28 Jun	24	50	3,054	283	2,310	0	0	5,647
29 Jun	33	41	8,118	210	3,552	0	0	11,880
30 Jun	25	29	3,778	166	2,340	0	0	6,284
1 Jul								
2 Jul	49	68	7,474	333	2,515	3	0	10,325
3 Jul	57	73	10,607	266	2,943	10	0	13,826
4 Jul								
5 Jul	46	63	9,998	373	2,579	2	0	12,952
6 Jul	33	81	9,101	291	2,506	0	0	11,898
7 Jul	70	98	20,213	279	3,768	5	0	24,265
8 Jul	83	118	18,323	329	5,639	7	0	24,298
9 Jul	61	74	20,975	194	3,759	6	0	24,934
10 Jul	35	67	15,836	206	2,904	0	0	18,946
11 Jul [b]								
12 Jul	54	116	25,205	110	3,680	12	0	29,007
13 Jul	74	141	23,334	234	8,958	13	0	32,539
14 Jul	59	101	13,086	167	4,134	26	0	17,413
15 Jul	73	115	18,919	171	5,786	23	0	24,899
16 Jul	69	117	27,775	91	5,373	9	0	33,248
17 Jul								
18 Jul								
19 Jul	77	102	28,270	114	3,128	118	0	31,630
20 Jul	68	102	22,533	97	3,542	146	0	26,318
21 Jul	76	104	23,964	84	3,213	430	2	27,693
22 Jul	87	113	28,607	97	5,564	383	0	34,651
23 Jul	36	109	20,648	38	2,207	388	0	23,281
24 Jul	54	117	35,542	37	3,395	899	0	39,873
25 Jul	21	37	14,044	10	1,061	832	0	15,947
26 Jul	51	107	29,958	40	2,306	1,191	3	33,498
27 Jul	90	134	29,229	66	6,320	6,699	2	42,316
28 Jul	70	88	15,998	36	3,274	4,707	10	24,025
29 Jul	63	64	19,843	17	3,430	4,614	18	27,922
31 Jul	28	39	8,142	9	592	3,596	17	12,356

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Table 14.–Page 2 of 2.

Date[a]	Deliveries		Sockeye	Chinook	Chum	Pink	Coho	Total
	Drift	Set						
1 Aug								
2 Aug	58	52	6,860	11	807	5,795	336	13,809
3 Aug	44	57	6,399	21	571	5,642	417	13,050
4 Aug	41	44	4,832	19	400	1,980	431	7,662
5 Aug	14	31	3,091	5	149	679	185	4,109
6 Aug	1	5	306	0	27	0	19	352
7 Aug								
8 Aug								
9 Aug								
10 Aug	2	5	393	0	5	0	108	506
11 Aug	8	10	865	2	17	0	200	1,084
12 Aug	7	13	864	6	27	0	349	1,246
13 Aug	3	3	253	4	6	0	90	353
14 Aug								
15 Aug								
16 Aug	3	3	137	0	4	0	271	412
17 Aug	6	9	317	1	25	0	404	747
18 Aug	8	11	403	1	25	0	662	1,091
19 Aug	11	14	590	2	13	0	1,261	1,866
20 Aug	0	5	128	0	2	0	143	273
21 Aug								
22 Aug								
23 Aug	4	12	24	0	7	4	574	609
24 Aug	11	24	58	2	7	4	1,637	1,708
25 Aug	8	33	103	2	11	12	2,113	2,241
26 Aug	12	31	96	1	14	16	4,544	4,671
27 Aug	4	3	14	0	2	4	218	238
28 Aug								
29 Aug								
30 Aug	9	14	18	0	4	16	1,164	1,202
31 Aug	7	22	62	0	12	12	1,936	2,022
1 Sep	6	20	27	1	5	1	1,214	1,248
2 Sep	10	15	19	1	2	9	1,999	2,030
3 Sep	0	4	0	0	0	0	82	82
Total			541,953	4,684	105,646	38,293	20,409	710,985

Note: Blank cells indicate no data.

[a] Less than 4 permits; records are confidential.

[b] Information is confidential; less than four permit holders involved in fishery.

Table 15.–Commercial salmon catch by date and species, in numbers of fish, Kulukak Section, Bristol Bay, 2010.

	Deliveries							
Date[a]	Drift	Set	Sockeye	Chinook	Chum	Pink	Coho	Total
21 Jun			[b]					
22 Jun			[b]					
23 Jun			[b]					
24 Jun								
25 Jun								
26 Jun								
27 Jun								
28 Jun	9	22	3,435	13	1,125	0	0	4,573
29 Jun	23	25	7,960	33	1,659	0	0	9,652
30 Jun	11	21	6,139	9	944	0	0	7,092
1 Jul								
2 Jul								
3 Jul								
4 Jul								
5 Jul	17	40	6,344	91	1,314	1	1	7,751
6 Jul	26	52	10,031	43	2,027	0	0	12,101
7 Jul	15	46	13,738	34	1,447	1	0	15,220
8 Jul								
9 Jul								
10 Jul								
11 Jul								
12 Jul	11	32	7,457	45	1,696	0	0	9,198
13 Jul	20	43	12,244	44	2,198	0	0	14,486
14 Jul	26	42	19,201	24	1,721	1	0	20,947
15 Jul								
16 Jul								
17 Jul								
18 Jul								
19 Jul	14	24	7,079	9	1,064	0	0	8,152
20 Jul	17	33	9,665	13	1,060	0	0	10,738
21 Jul	17	22	10,213	9	961	2	0	11,185
22 Jul								
23 Jul								
24 Jul								

-continued-

Table 15.–Page 2 of 2.

Date[a]	Deliveries		Sockeye	Chinook	Chum	Pink	Coho	Total
	Drift	Set						
25 Jul								
26 Jul	1	5	2,221	4	83	127	5	2,440
27 Jul	4	9	4,886	4	84	309	4	5,287
28 Jul	2	1	1,828	0	14	59	2	1,903
1 Aug								
2 Aug	6	1	1,189	2	105	339	50	1,685
3 Aug	6	1	2,139	5	61	148	22	2,375
4 Aug	5	1	1,631	0	26	454	93	2,204
5 Aug								
6 Aug								
7 Aug								
8 Aug								
9 Aug								
10 Aug								
11 Aug								
12 Aug								
13 Aug								
14 Aug								
15 Aug								
16 Aug								
17 Aug								
18 Aug								
19 Aug								
20 Aug								
21 Aug								
22 Aug								
23 Aug	7	0	41	4	0	0	822	867
24 Aug	5	0	19	0	2	0	687	708
25 Aug	6	0	2	0	0	0	1,051	1,053
26 Aug								
27 Aug								
28 Aug								
29 Aug								
30 Aug			[b]					
31 Aug			[b]					
Total	254	420	128,038	398	18,057	1,441	3,321	151,255

Note: Blank cells indicate no data unless otherwise noted.

[a] Kulukak Section is open 3 days per week by regulation. See Table 7 for inseason adjustments to the weekly fishing schedule.

[b] Less than 4 permits; records are confidential.

Table 16.–Commercial salmon catch by date and species, in numbers of fish, Matogak Section, Bristol Bay, 2010.

Date [a]	Sockeye	Chinook	Chum	Pink	Coho	Total
	No Commercial Fishing Effort Occurred					
Total						

[a] Matogak Section is open 5 days per week by regulation. See Table 7 for inseason adjustments to the weekly fishing schedule.

Table 17.–Commercial salmon catch by date and species, in numbers of fish, Osviak Section, Bristol Bay, 2010.

Date [a]	Sockeye	Chinook	Chum	Pink	Coho	Total
	No Commercial Fishing Effort Occurred					
Total						

[a] Osviak Section is open 5 days per week by regulation. See Table 7 for inseason adjustments to the weekly fishing schedule.

Table 18.–Commercial salmon catch by district and species, in number of fish, Bristol Bay, 2010.

District and River System		Sockeye	Chinook	Chum	Pink	Coho	Total
NAKNEK-KVICHAK DISTRICT							
Kvichak River		5,018,048					
Alagnak River		1,396,339					
Naknek River		4,244,728					
	Total	10,659,115	369	330,342	8,237	1,006	10,999,069
EGEGIK DISTRICT		4,963,049	56	58,979	1,655	9,984	5,033,723
UGASHIK DISTRICT		3,993,080	314	68,617	0	467	4,062,478
NUSHAGAK DISTRICT							
Wood River		5,813,715					
Igushik River		836,767					
Nushagak River		1,658,801					
	Total	8,309,283	25,580	509,628	1,289,970	69,186	10,203,647
TOGIAK DISTRICT							
Togiak Section		541,953	4,684	105,646	38,293	20,409	710,985
Kulukak Section		128,038	398	18,057	1441	3321	151,255
Matogak Section		0	0	0	0	0	0
Osviak Section		0	0	0	0	0	0
	Total	669,991	5,082	123,703	39,734	23,730	862,240
TOTAL BRISTOL BAY		28,466,480	31,003	1,073,212	1,338,155	101,052	31,009,902

Note: Species other than sockeye salmon are not apportioned to individual rivers. Blank cells indicate no data.

Table 19.–Daily sockeye salmon escapement tower counts by river system, east side Bristol Bay, 2010.

	Kvichak River		Naknek River		Alagnak River		Egegik River		Ugashik River	
Date	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
18 Jun							1,146	1,146		
19 Jun							1,308	2,454		
20 Jun			138	138			5,286	7,740		
21 Jun	84	84	528	666	24	24	4,230	11,970		
22 Jun	12	96	2,220	2,886	0	24	7,332	19,302		
23 Jun	12	108	7,326	10,212	6	30	8,310	27,612		
24 Jun	30	138	17,418	27,630	6	36	14,322	41,934		
25 Jun	390	528	9,228	36,858	12	48	5,442	47,376		
26 Jun	840	1,368	12,234	49,092	36	84	5,472	52,848		
27 Jun	474	1,842	36,258	85,350	0	84	8,970	61,818		
28 Jun	966	2,808	137,298	222,648	24	108	18,606	80,424		
29 Jun	13,770	16,578	97,188	319,836	816	924	36,138	116,562		
30 Jun	68,622	85,200	39,978	359,814	40,470	41,394	45,192	161,754		
1 Jul	109,290	194,490	13,908	373,722	34,902	76,296	18,522	180,276	9,096	9,096
2 Jul	102,336	296,826	29,400	403,122	10,896	87,192	7,578	187,854	13,182	22,278
3 Jul	45,774	342,600	67,734	470,856	4,692	91,884	70,470	258,324	20,718	42,996
4 Jul	42,456	385,056	47,586	518,442	16,758	108,642	73,416	331,740	14,022	57,018
5 Jul	162,894	547,950	116,622	635,064	81,576	190,218	76,758	408,498	13,644	70,662
6 Jul	261,054	809,004	196,338	831,402	41,754	231,972	82,704	491,202	12,516	83,178
7 Jul	269,910	1,078,914	153,804	985,206	118,968	350,940	27,384	518,586	22,080	105,258
8 Jul	426,630	1,505,544	112,224	1,097,430	201,792	552,732	54,564	573,150	39,606	144,864
9 Jul	528,822	2,034,366	78,072	1,175,502	102,588	655,320	62,742	635,892	38,292	183,156
10 Jul	373,512	2,407,878	75,300	1,250,802	102,666	757,986	25,614	661,506	46,776	229,932
11 Jul	368,334	2,776,212	61,524	1,312,326	110,334	868,320	17,562	679,068	41,352	271,284
12 Jul	289,470	3,065,682	58,128	1,370,454	148,362	1,016,682	8,280	687,348	55,188	326,472
13 Jul	399,252	3,464,934	37,788	1,408,242	123,132	1,139,814	38,988	726,336	72,258	398,730
14 Jul	371,706	3,836,640	18,354	1,426,596	28,440	1,168,254	88,158	814,494	72,192	470,922
15 Jul	181,416	4,018,056	17,232	1,443,828	9,318	1,177,572	48,954	863,448	60,534	531,456
16 Jul	84,918	4,102,974	12,654	1,456,482	10,158	1,187,730	23,850	887,298	75,942	607,398
17 Jul	52,794	4,155,768	7,446	1,463,928			30,942	918,240	61,884	669,282
18 Jul	31,440	4,187,208					5,478	923,718	15,384	684,666
19 Jul	15,258	4,202,466					3,186	926,904	15,600	700,266
20 Jul	4,944	4,207,410							11,994	712,260
21 Jul									12,480	724,740
22 Jul									11,442	736,182
23 Jul									18,336	754,518
24 Jul									15,198	769,716
25 Jul									10,524	780,240
26 Jul									10,428	790,668
27 Jul									15,018	805,686

Note: Blank cells represent days when no data was collected.

Table 20.–Daily sockeye salmon escapement tower counts by river system, Westside Bristol Bay, 2010.

	Wood River		Igushik River		Togiak River	
Date	Daily	Cum.	Daily	Cum.	Daily	Cum.
18 Jun	912	912				
19 Jun	402	1,314				
20 Jun	840	2,154				
21 Jun	834	2,988				
22 Jun	756	3,744	0	0		
23 Jun	26,772	30,516	12	12		
24 Jun	67,056	97,572	174	186		
25 Jun	46,302	143,874	288	474		
26 Jun	43,854	187,728	1,344	1,818		
27 Jun	46,170	233,898	666	2,484		
28 Jun	119,106	353,004	3,816	6,300		
29 Jun	130,182	483,186	45,966	52,266		
30 Jun	98,520	581,706	28,920	81,186		
1 Jul	74,244	655,950	29,022	110,208		
2 Jul	112,032	767,982	44,334	154,542	462	462
3 Jul	79,686	847,668	50,826	205,368	510	972
4 Jul	121,122	968,790	37,638	243,006	984	1,956
5 Jul	124,704	1,093,494	19,704	262,710	1,074	3,030
6 Jul	87,072	1,180,566	11,160	273,870	2,178	5,208
7 Jul	77,196	1,257,762	9,522	283,392	2,058	7,266
8 Jul	84,258	1,342,020	9,354	292,746	2,394	9,660
9 Jul	91,824	1,433,844	13,644	306,390	1,746	11,406
10 Jul	92,346	1,526,190	12,432	318,822	1,788	13,194
11 Jul	82,320	1,608,510	18,444	337,266	1,104	14,298
12 Jul	62,466	1,670,976	30,864	368,130	1,086	15,384
13 Jul	29,022	1,699,998	43,842	411,972	4,716	20,100
14 Jul	25,728	1,725,726	21,774	433,746	8,034	28,134
15 Jul	26,424	1,752,150	11,640	445,386	8,508	36,642
16 Jul	27,270	1,779,420	16,452	461,838	5,424	42,066
17 Jul	13,182	1,792,602	14,952	476,790	5,586	47,652
18 Jul	9,030	1,801,632	11,406	488,196	3,276	50,928
19 Jul	2,712	1,804,344	7,980	496,176	1,842	52,770
20 Jul			9,012	505,188	5,496	58,266
21 Jul			7,278	512,466	21,546	79,812
22 Jul			5,574	518,040	18,570	98,382
23 Jul					9,012	107,394

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	Wood River		Igushik River		Togiak River	
Date	Daily	Cum.	Daily	Cum.	Daily	Cum.
24 Jul					5,262	112,656
25 Jul					2,322	114,978
26 Jul					5,514	120,492
27 Jul					6,534	127,026
28 Jul					7,098	134,124
29 Jul					10,170	144,294
30 Jul					9,174	153,468
31 Jul					3,834	157,302
1 Aug					2,328	159,630
2 Aug					2,454	162,084
3 Aug					2,412	164,496
4 Aug					8,724	173,220
5 Aug					15,078	188,298

Note: Blank cells represent days when no data was collected.

Table 21.–Final daily and cumulative escapement estimates by species, Nushagak River sonar project, Bristol Bay, 2010.

Date	Sockeye		Chinook[a]		Chum		Other[b]		Total	
	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
5 Jun	0	0	14	14	4	4	0	0	18	18
6 Jun	0	0	547	561	239	243	0	0	786	804
7 Jun	0	0	684	1,245	418	661	0	0	1,102	1,906
8 Jun	0	0	292	1,537	161	822	0	0	453	2,359
9 Jun	0	0	197	1,734	106	928	0	0	303	2,662
10 Jun	4	4	187	1,921	103	1,031	0	0	294	2,956
11 Jun	18	22	236	2,157	317	1,348	0	0	571	3,527
12 Jun	10	32	129	2,286	303	1,651	0	0	442	3,969
13 Jun	90	122	1,570	3,856	,121	2,772	0	0	2,781	6,750
14 Jun	375	497	2,219	6,075	2,990	5,762	325	325	5,909	12,659
15 Jun	0	497	4,119	10,194	4,435	10,197	0	325	8,554	21,213
16 Jun	183	680	2,436	12,630	3,818	14,015	0	325	6,437	27,650
17 Jun	193	873	415	13,045	1,258	15,273	0	325	1,866	29,516
18 Jun	841	1,714	1,257	14,302	2,776	18,049	0	325	4,874	34,390
19 Jun	763	2,477	676	14,978	2,860	20,909	0	325	4,299	38,689
20 Jun	1,006	3,483	638	15,616	3,473	24,382	0	325	5,117	3,806
21 Jun	691	4,174	712	16,328	3,771	28,153	0	325	5,174	48,980
22 Jun	459	4,633	907	17,235	2,956	31,109	0	325	4,322	53,302
23 Jun	1,899	6,532	1,067	18,302	16,498	47,607	0	325	19,464	72,766
24 Jun	23,216	29,748	762	19,064	35,074	82,681	0	325	59,052	131,818
25 Jun	22,679	52,427	238	19,302	13,159	95,840	0	325	36,076	167,894
26 Jun	15,726	68,153	468	19,770	21,798	17,638	0	325	37,992	205,886
27 Jun	8,002	76,155	772	20,542	24,917	142,555	0	325	33,691	239,577
28 Jun	10,062	86,217	1,106	21,648	25,874	168,429	0	325	37,042	276,619
29 Jun	17,842	104,059	1,007	22,655	12,154	180,583	0	325	31,003	307,622
30 Jun	17,344	121,403	756	23,411	1,784	182,367	0	325	19,884	327,506
1 Jul	4,965	126,368	1,228	24,639	4,952	187,319	0	325	11,145	338,651
2 Jul	4,986	131,354	1,922	26,561	6,402	193,721	0	325	13,310	351,961
3 Jul	8,980	140,334	1,165	27,726	7,433	201,154	0	325	17,578	369,539

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Date	Sockeye		Chinook[a]		Chum		Other[b]		Total	
	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
4 Jul	11,245	151,579	1,690	29,416	10,897	212,051	0	325	23,832	393,371
5 Jul	10,178	161,757	1,362	30,778	6,404	218,455	0	325	17,944	411,315
6 Jul	11,245	173,002	634	31,412	3,676	222,131	751	1,076	16,306	427,621
7 Jul	30,129	203,131	893	32,305	4,477	226,608	698	1,774	36,197	463,818
8 Jul	53,972	257,103	596	32,901	1,906	228,514	0	1,774	56,474	520,292
9 Jul	63,123	320,226	566	33,467	11,961	240,475	0	1,774	75,650	595,942
10 Jul	53,125	373,351	682	34,149	8,639	249,114	0	1,774	62,446	658,388
11 Jul	30,254	403,605	440	34,589	4,901	254,015	0	1,774	35,595	693,983
12 Jul	19,889	423,494	322	34,911	6,145	260,160	1,137	2,911	27,493	721,476
13 Jul	11,919	435,413	179	35,090	3,476	263,636	0	2,911	15,574	737,050
14 Jul	4,577	439,990	433	35,523	2,634	266,270	0	2,911	7,644	744,694
15 Jul	8,293	448,283	336	35,859	3,704	269,974	0	2,911	12,333	757,027
16 Jul	8,833	457,116	323	36,182	1,710	271,684	0	2,911	10,866	767,893
17 Jul	8,789	465,905	336	36,518	1,693	273,377	0	2,911	10,818	778,711
18 Jul	2,791	468,696	107	36,625	537	273,914	0	2,911	3,435	782,146

[a] Chinook salmon numbers generated with current hydroacoustic technology (DIDSON) were adjusted in 2010 in order to provide count designed to be equivalent to older Bendix counts.

[b] Species other than sockeye, Chinook, or coho salmon.

Table 22.–Comparison of daily sockeye salmon escapement estimates by tower count, aerial survey, and river test fishing enumeration methods, Kvichak River, Bristol Bay, 2010.

	Tower Count		Aerial Survey	River Test Fishing				
				Fish per	Index Points		Cumulative	Estimated
Date	Daily	Cum.	Total	Index Pt.[a]	Daily	Cum.	Escapement	River Fish[b]
20 Jun								
21 Jun	84	84						
22 Jun	12	96						
23 Jun	12	108		50	7	7	337	
24 Jun	30	138		50	41	47	2,373	
25 Jun	390	528		50	4	52	2,587	
26 Jun	840	1,368		50	0	52	2,587	
27 Jun	474	1,842		50	59	111	5,558	
28 Jun	966	2,808		50	1,755	1,866	93,308	50,000
29 Jun	13,770	16,578		50	3,654	5,521	276,030	100,000
30 Jun	68,622	85,200		46	768	6,289	289,276	200,000
1 Jul	109,290	194,490	427,000	42	82	6,371	267,583	75,000
2 Jul	102,336	296,826		54	16	6,387	344,913	50,000
3 Jul	45,774	342,600		58	405	6,792	393,959	50,000
4 Jul	42,456	385,056		58	2,049	8,841	512,803	125,000
5 Jul	162,894	547,950		74	1,240	10,082	746,036	200,000
6 Jul	261,054	809,004	451,390	92	3,334	13,416	1,234,257	450,000
7 Jul	269,910	1,078,914		94	2,369	15,784	1,483,736	400,000
8 Jul	426,630	1,505,544		123	1,341	17,125	2,106,404	600,000
9 Jul	528,822	2,034,366	1,398,400	129	1,209	18,334	2,365,061	350,000
10 Jul	373,512	2,407,878		141	1,927	20,260	2,856,723	450,000
11 Jul	368,334	2,776,212	451,000	147	2,661	22,921	3,369,454	600,000
12 Jul	289,470	3,065,682	1,571,125	151	2,509	25,430	3,839,985	800,000
13 Jul	399,252	3,464,934		158	412	25,842	4,083,079	600,000
14 Jul	371,706	3,836,640		158	378	26,220	4,142,747	300,000
15 Jul	181,416	4,018,056						
16 Jul	84,918	4,102,974						
17 Jul	52,794	4,155,768						
18 Jul	31,440	4,187,208						
19 Jul	15,258	4,202,466						
20 Jul	4,944	4,207,410						

Note: Blank cells represent days when no data was collected.

[a] The FPI used to estimate the daily ERFs prior to using lag time relationships was calculated using an average of the 1989–2007 starting FPIs after lag time relationships "locked in" and the midpoint of the escapement count each year. A trend line was then fit to the daily averages and an FPI was calculated for each day. This method was used until June 28 when FPIs were based on lag-time relationships.

[b] Estimated river fish (ERF) was based on the river test fish cumulative escapement estimate less the cumulative tower count. On occasion, staff adjusted the ERF based on aerial surveys, catchability, etc.

Table 23.–Comparison of daily sockeye salmon escapement estimates by tower count, aerial survey, and river test fishing enumeration methods, Egegik River, Bristol Bay, 2010.

	Tower Count		Aerial Survey	River Test Fishing				
					Index Points		Estimated Cumulative	Estimated
Date	Daily	Cum.	Total	Fish per Index Pt.[a]	Daily	Cum.	Escapement	River Fish[b]
15 Jun				46	10	10	480	
16 Jun				46	26	37	1,688	
17 Jun				46	22	59	2,717	
18 Jun	1,146	1,146		46	74	134	6,143	
19 Jun	1,308	2,454		46	63	196	9,037	
20 Jun	5,286	7,740		46	163	359	16,522	
21 Jun	4,230	11,970		61	120	479	29,238	20,000
22 Jun	7,332	19,302		62	150	629	39,001	20,000
23 Jun	8,310	27,612		58	172	801	46,438	20,000
24 Jun	14,322	41,934		82	18	818	67,091	25,000
25 Jun	5,442	47,376		67	89	908	60,804	15,000
26 Jun	5,472	52,848		67	474	1,381	92,553	40,000
27 Jun	8,970	61,818		76	209	1,591	120,895	55,000
28 Jun	18,606	80,424		58	547	2,138	123,980	45,000
29 Jun	36,138	116,562		73	1,157	3,295	240,522	120,000
30 Jun	45,192	161,754		67	227	3,522	235,942	75,000
1 Jul	18,522	180,276		63	106	3,628	228,547	50,000
2 Jul	7,578	187,854		52	771	4,399	228,723	40,000
3 Jul	70,470	258,324		59	1,782	6,180	364,628	100,000
4 Jul	73,416	331,740		57	195	6,375	363,381	30,000
5 Jul	76,758	408,498		72	649	7,024	505,729	100,000
6 Jul	82,704	491,202		75	205	7,229	542,197	50,000
7 Jul	27,384	518,586		74	512	7,741	572,856	53,000
8 Jul	54,564	573,150		76	284	8,026	609,960	40,000
9 Jul	62,742	635,892		85	261	8,287	704,403	70,000
10 Jul	25,614	661,506		80	603	8,890	711,216	48,000
11 Jul	17,562	679,068		73	98	8,988	656,159	10,000
12 Jul	8,280	687,348		78	94	9,083	708,462	20,000
13 Jul	38,988	726,336		81	405	9,488	768,537	40,000
14 Jul	88,158	814,494						
15 Jul	48,954	863,448						
16 Jul	23,850	887,298						
17 Jul	30,942	918,240						
18 Jul	5,478	923,718						
19 Jul	3,186	926,904						

Note: Blank cells indicate no data.

[a] The FPI used to estimate the daily ERFs prior to using lag time relationships was calculated using an average of the 1989–2006 starting FPIs after lag time relationships "locked in" and the midpoint of the escapement count each year. This method was used until June 22 when FPIs were based on lag-time relationships.

[b] Estimated river fish (ERF) was based on the river test fish cumulative escapement estimate less the cumulative tower count. On occasion, staff adjusted the ERF based on aerial surveys, catchability, etc.

Table 24.–Comparison of daily sockeye salmon escapement estimates by tower count, aerial survey, and river test fishing enumeration methods, Ugashik River, Bristol Bay, 2010.

	Tower Count		Aerial Survey [a]	River Test Fishing				
					Index Points		Estimated Cumulative	Estimated
Date	Daily	Cum.	Total	Fish per Index Pt.[b]	Daily	Cum.	Escapement	River Fish [c]
22 Jun								
23 Jun								
24 Jun				32	14	14	459	
25 Jun				32	27	41	1,310	
26 Jun				32	31	72	2,288	
27 Jun				32	134	206	6,578	
28 Jun				32	365	571	18,261	
29 Jun				32	501	1,071	34,280	35,000
30 Jun				32	939	2,010	64,314	50,000
1 Jul	9,096	9,096		32	628	2,638	84,420	60,000
2 Jul	13,182	22,278		32	259	2,897	92,698	40,000
3 Jul	20,718	42,996		32	157	3,053	97,709	40,000
4 Jul	14,022	57,018		25	182	3,235	80,883	25,000
5 Jul	13,644	70,662		31	138	3,373	104,578	35,000
6 Jul	12,516	83,178		34	217	3,590	122,070	40,000
7 Jul	22,080	105,258		35	776	4,366	152,819	50,000
8 Jul	39,606	144,864		47	614	4,980	234,052	90,000
9 Jul	38,292	183,156		51	919	5,899	300,836	120,000
10 Jul	46,776	229,932		53	753	6,652	352,533	120,000
11 Jul	41,352	271,284		54	689	7,341	396,403	120,000
12 Jul	55,188	326,472		53	768	8,108	429,749	100,000
13 Jul	72,258	398,730		59	392	8,500	501,503	100,000
14 Jul	72,192	470,922		64	596	9,096	582,134	100,000
15 Jul	60,534	531,456		66	341	9,437	622,854	90,000
16 Jul	75,942	607,398		71	213	9,650	685,136	85,000
17 Jul	61,884	669,282		75	121	9,771	732,819	60,000
18 Jul	15,384	684,666						
19 Jul	15,600	700,266						
20 Jul	11,994	712,260						
21 Jul	12,480	724,740						
22 Jul	11,442	736,182						
23 Jul	18,336	754,518						
24 Jul	15,198	769,716						
25 Jul	10,524	780,240						
26 Jul	10,428	790,668						
27 Jul	15,018	805,686						

Note: Blank cells represent days when no data was collected.

[a] No aerial surveys were conducted this year.

[b] The FPI used to estimate the daily ERFs prior to using lag time relationships was calculated using an average of the 1989–2006 starting FPIs after lag time relationships "locked in" and the midpoint of the escapement count each year. This method was used until July 1 when FPIs were based on lag-time relationships.

[c] Estimated river fish (ERF) was based on the river test fish cumulative escapement estimate less the cumulative tower count. On occasion, staff adjusted the ERF based on aerial surveys, catchability, etc.

Table 25.–Commercial salmon processors and buyers operating in Bristol Bay, 2010.

	Name of Operator/Buyer[a]	Base of Operations	District[b]	Method[c]	Export
1	Alaska General Seafoods	Kenmore, WA	K,E,U	C,EF,F	AIR
2	Alaska Salmon Wild	Ruidoso, NM	K	F	AIR
3	Alex Himschoot	Dillingham, AK	N	F	SEA
4	Big Creek Fishereis	Everet, WA	E,U	EF,F	SEA,AIR
5	Cape Greig, LLC	Seattle, WA	U	F	SEA
6	Coffee Point Seafoods of WA, LLC	Seattle, WA	E	EF,F	SEA
7	Copper River Seafoods	Anchorage, AK	N,T	EF	AIR
8	Da Kine Enterprise	Naknek, AK	K	EF,F	AIR
9	Dancing Salmon LLP	Dillingham, AK	N	EF,S	AIR
10	Ekuk Fisheries	Seattle, WA	U,N	EF,F	SEA,AIR
11	Favco Fisheries	Dillingham, AK	N	EF	AIR
12	Friedman Family Fisheries, Inc.	Baltimore, MD	N	F	SEA
13	Great Ruby Fish Company	Naknek, AK	K	EF,F	SEA,AIR
14	Icicle Seafoods, Inc.	Seattle, WA	K,E,U,N	C,EF, F	SEA,AIR
15	James Crimp	Anchorage, AK	N	EF	AIR
16	Joesph R. Faith	Dillingham, AK	N	EF	AIR
17	Kathy Ann	Dillingham, AK	N	EF	AIR
18	Leader Creek Fisheries, LLC	Seattle, WA	K,E,U,N	F	SEA
19	My Girl	Naknek, AK	K	F	AIR
20	Naknek Family Fisheries	Naknek, AK	K	EF,F,S	SEA,AIR
21	Ocean Beauty Seafoods, Inc.	Seattle, WA	K,E,U,N,T	C,EF,F	SEA,AIR
22	Paul Friis-Mikkelsen	Dillingham, AK	N	F	AIR
23	Pavlof Fisheries LLC	Everet, WA	U	F	SEA
24	Pederson Point	Seattle, WA	K,E,U,N,T	F	SEA
25	Peter Pan Seafoods, Inc.	Seattle, WA	K,E,U,N	C,EF,F,S	SEA,AIR
26	Robin Samuelsen	Dillingham, AK	N	EF	AIR
27	Salmon Guy Seafoods	Asheville, NC	N	F	AIR
28	Sharon Wilson	Naknek, AK	K	EF	AIR
29	Snopac Products, Inc.	Seattle, WA	K,E,U,N,T	EF,F	SEA,AIR
30	Togiak Fisheries	Seattle, WA	T	F	SEA
31	Trident Seafoods	Seattle, WA	K,E,U,N	C,EF,F	SEA,AIR
32	Ugashik Wild Salmon	Ugashik, AK	U	F	AIR
33	Weck Fish	Anchorage, AK	K	EF,F	SEA, AIR
34	Wild Alaska Salmon and Seafood	King Salmon, AK	K	EF,F	AIR
35	Wild Premium Salmon	Egegik, AK	E	EF	AIR
36	Yard Arm Knot Fisheries, LLC	Seattle, WA	K,E,N	C,F	SEA

[a] Indicates operators with a processing facility in a district or operators from other areas buying fish and/or providing support service for fishers in districts away from the facility.

[b] K=Naknek-Kvichak; E=Egegik; U=Ugashik; N=Nushagak; T=Togiak

[c] Type of processing: C=canned; EF=export fresh; F=frozen; S=cured.

Table 26.–Mean round weight, price per pound, and total exvessel value of the commercial salmon catch, Bristol Bay, 2010.

Species	Total Catch (lbs.)	Mean Weight (lbs.)	Mean Price ($/lb.)	Exvessel Value ($)
Sockeye	157,269,849	5.5	0.95	149,406,357
Chinook	461,609	14.7	0.98	452,377
Chum	6,984,122	6.4	0.27	1,885,713
Pink	4,286,707	3.2	0.37	1,586,082
Coho	928,920	8.9	0.53	492,327
Total	169,931,207			153,822,856

Note: Weighted averages used.

Table 27.–Subsistence salmon harvest by species, in numbers of fish, by district and location fished, Bristol Bay, 2009

Area and River System	Number of Permits Issued[a]	Estimated Salmon Harvests					
		Chinook	Sockeye	Coho	Chum	Pink	Total
NAKNEK-KVICHAK DISTRICT	461	392	67,970	669	167	36	69,235
Naknek River Subdistrict	279	350	21,199	648	135	36	22,368
Kvichak River/Iliamna Lake Subdistrict:	187	42	46,772	21	32	0	46,867
Igiugig	5	11	1,060	0	0	0	1,071
Iliamna Lake-General	29	0	3,245	0	0	0	3,245
Kijik	3	0	381	0	0	0	381
Kokhanok	31	15	16,205	1	16	0	16,238
Kvichak River	19	0	1,682	0	0	0	1,682
Lake Clark	42	0	3,577	0	0	0	3,577
Levelock	2	16	597	20	16	0	649
Newhalen River	33	0	9,567	0	0	0	9,567
Pedro Bay	22	0	7,562	0	0	0	7,562
Pile Bay	1	0	270	0	0	0	270
Six Mile Lake	13	0	2,626	0	0	0	2,626
EGEGIK DISTRICT	26	31	778	133	6	5	953
UGASHIK DISTRICT	15	33	1,061	131	4	41	1,270
NUSHAGAK DISTRICT	530	12,737	26,922	6,777	4,510	355	51,300
Wood River	155	2,250	7,145	759	390	16	10,560
Nushagak River	112	4,735	5,802	2,086	1,992	80	14,696
Nushagak Bay Noncommercial	229	4,974	10,542	3,214	1,839	153	20,723
Nushagak Bay Commercial	34	389	1,262	539	180	103	2,473
Igushik/Snake River	24	299	1,844	98	90	2	2,333
Site Unknown	51	10	2	0	177	0	189
TOGIAK DISTRICT	40	827	2,220	272	365	5	3,689
Total	1,063	14,020	98,951	7,982	5,052	442	126,447

Note: 2010 numbers were not available at the time of publication. Due to rounding, the sum of columns and rows may not equal the estimated total. Harvests are extrapolated for all permits issued based on those returned and on the area fished as recorded on the permit. Of 1,063 permits issued for the management area, 950 were returned (89.4%).

[a] Sum of sites may exceed district totals, and sum of districts may exceed area totals, because permittees may use more than one site.

Table 28.–Daily observed estimates (tons) of herring by index area, Togiak District, 2010.

Date	Start Time	Survey Rating [b]	Miles of Spawn	Estimated Biomass by Index Area [a]													Daily Total
				NUS	KUK	MET	NVK	UGL	TOG	TNG	MTG	OSK	PYR	CPN	HAG	WAL	
28 Apr	10:00																
3 May	14:00																
5 May	13:00																
10 May	11:00	4.5						1,638	130						602		2,371
14 May	15:00	3.0		674	7,205	4,684	3,093	1,246	42,395	7,463	4,737	7,687					79,183
18 May	15:00	1.0	5.0	5,095	19,264	722	14,151	12,221	39,483	4,467	2,468	211	171		36		98,290
21 May	15:30	1.7	3.4		21,790	480	2,306	378	35,719	8,803	56	1,118			1,554	155	72,357
25 May	12:00	2.0		677	1,606	159	186	981	48,875	291		84				53	52,913
2 Jun	14:00	2.1			4,273	1,015	394	41	31,202								36,924
Total linear miles of spawn			8.4										Peak biomass estimate				98,290

Note: Blank cells represent days when no herring were observed.

[a] Index areas: NUS - Nushagak Peninsula; KUK - Kulukak; MET - Metervik; NUK - Nunavachak; UGL - Ungalikthluk/Togiak; TOG - Togiak; TNG - Tongue Pt.; MTG - Matogak; HAG - Hagemeister; OSK - Osviak; PYT - Pyrite Point; CPN - Cape Newenham.

[b] Average survey rating for all sections surveyed: 1= Excellent, 2 = Good, 3 = Fair, 4 = Poor, 5 = Unsatisfactory.

Table 29.–Emergency order commercial fishing periods for herring sac roe and spawn-on-kelp, Togiak District, 2010.

EO #	Area [a]		Date and Time				
Herring Sac Roe Gillnet							
DLG-02	Egg Island Section		5/11	6:00 p.m.	to	further notice	
DLG-05	Egg Island Section, Right Hand Point to Mud Bay	increase area	5/16	12:00 p.m.	to	further notice	
DLG-09	Egg Island Section	reduce area	5/19	12:00 p.m.	to	further notice	
DLG-11	Egg Island Section, Right Hand Point to Mud Bay	increase area	5/20	3:00 p.m.	to	further notice	
DLG-13	Egg Island Section	reduce area	5/21	12:00 p.m.	to	further notice	
DLG-15	Egg Island Section	closure	5/23	11:59 p.m.	to	further notice	
DLG-16	Egg Island Section	opening	5/24	11:00 a.m.	to	5/25	12:00 p.m.
DLG-17	Egg Island Section, Right Hand Pt. to Anchor Pt.	extension; area increase	5/25	12:00 p.m.	to	5/26	12:00 p.m.
DLG-18	Egg Island Section, Right Hand Pt. to Anchor Pt.	extension	5/26	12:00 p.m.	to	5/27	12:00 p.m.
Herring Sac Roe Purse Seine							
DLG-01	Right Hand Pt. to Anchor Pt., Togiak Reef to Cape Newenham		5/11	6:00 p.m.	to	5/14	10:00 p.m.
DLG-03	Right Hand Pt. to Anchor Pt., Togiak Reef to Cape Newenham	extension	5/14	10:00 p.m.	to	5/17	10:00 p.m.
DLG-04	Mud Bay to Anchor Pt., Togiak Reef to Cape Newenham	area reduction	5/16	12:00 p.m.	to	further notice	
DLG-06	Mud Bay to Anchor Pt., Togiak Reef to Cape Newenham	extension	5/17	10:00 p.m.	to	5/18	10:00 p.m.
DLG-07	Mud Bay to Anchor Pt., Togiak Reef to Cape Newenham	extension	5/18	10:00 p.m.	to	5/19	10:00 p.m.
DLG-08	Right Hand Pt. to Anchor Pt., Togiak Reef to Cape Newenham	extension; area increase	5/19	10:00 p.m.	to	5/20	10:00 p.m.
DLG-10	Right Hand Pt. to Anchor Pt., Togiak Reef to Cape Newenham	extension	5/20	10:00 p.m.	to	5/21	10:00 p.m.
DLG-10	Mud Bay to Anchor Pt., Togiak Reef to Cape Newenham	area reducion	5/20	2:00 p.m.	to	further notice	
DLG-12	Right Hand Pt. to Anchor Pt., Togiak Reef to Cape Newenham	extension; area increase	5/21	12:00 p.m.	to	5/22	12:00 p.m.
DLG-14	Right Hand Pt. to Anchor Pt., Togiak Reef to Cape Newenham	extension	5/22	12:00 p.m.	to	5/22	11:59 p.m.
Herring Spawn on Kelp [b]							

[a] Area descriptions are approximate. Precise boundaries are described in Emergency Orders.

[b] There was no market for spawn on kelp, therefore, a fishery did not occur.

Table 30.–Commercial herring harvest (tons) by fishing section, gear type, and date Togiak District, Bristol Bay, 2010.

			Kulukak		Nunavachak		Togiak		Hagemeister		Pyrite Point		Cape Newenham		Total	
Date	Duration	Period	Tons	Roe %	Tons	Roe %	Tons	Roe %	Tons	Roe %	Tons	Roe %	Tons	Roe %	Tons	Roe %
Purse Seine																
11 May					30.0										30.0[a]	
14 May	76:00	1			64.5	5.4	209.2	9.6	1,381.2	9.9					1,654.9	9.7
15 May	24:00	2			381.7	12.2	524.0	10.5	3,545.0	9.9	179.7	8.2			4,630.4	10.9
16 May	24:00	3			886.3	9.6	67.1	9.3	673.5	10.2					1,626.9	9.5
17 May	24:00	4			791.0	8.5	383.6	10.1	849.0	8.8					2,023.6	7.0
18 May	24:00	5			1,361.8	10.4	121.3	10.1	621.8	10.0					2,104.9	10.3
19 May	24:00	6			862.4	10.1			120.2	9.1					982.6	10.0
20 May	24:00	7			344.2	11.0	31.5	9.9	1,616.7	9.9					1,992.4	10.1
21 May	24:00	8			165.5	9.8			1,440.1	10.0					1,605.6	10.0
22 May	24:00	9			227.4	10.0	141.7	10.2	1,487.1	9.8	29.5	8.0			1,885.7	9.8
23 May									173.7						173.7[a]	
24 May									104.8						104.8[a]	
Subtotal	268:00				5,114.8	9.9	1,478.4	10.1	12,013.1	9.6	209.2	8.2			18,815.5	9.7
Gillnet																
11 May																
14 May	76:00	1	59.0	11.4											59.0[a]	
15 May	24:00	2	652.9	10.6											652.9	
16 May	24:00	3	212.3	10.8	431.2	11.1									643.5	11.0
17 May	24:00	4	188.7	11.0	189.5	10.5									378.2	10.7
18 May	24:00	5	1409.3	11.9	175.5	12.2									1,584.8	11.9
19 May	24:00	6	919.4	11.3											919.4	
20 May	24:00	7	830.2	12.2											830.2	
21 May	24:00	8	853.9	11.9											853.9	
22 May	24:00	9	227.4	11.8											227.4	
23 May	24:00	10	424.4	11.8											424.4	
24 May	13:00	11	263.2	12.2											263.2	
25 May	24:00	12	261.0	11.5											261.0	
26 May	24:00	13	162.0	12.5	14.3	9.7									176.3[a]	9.7
27 May	24:00	14	258.8	12.1	6.7	9.0									265.5[a]	9.0
Subtotal	377:00		6,722.5	10.0	817.2	11.2									7,539.7	10.1

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Date	Duration	Period	Kulukak Tons	Kulukak Roe %	Nunavachak Tons	Nunavachak Roe %	Togiak Tons	Togiak Roe %	Hagemeister Tons	Hagemeister Roe %	Pyrite Point Tons	Pyrite Point Roe %	Cape Newenham Tons	Cape Newenham Roe %	Total Tons	Total Roe %
Combined																
11 May					30.0										30.0[a]	
14 May			59.0	11.4	64.5	5.4	209.2	9.6	1,381.2	9.9					1,713.9	0.6
15 May			652.9	10.6	381.7	12.2	524.0	10.5	3,545.0	9.9	179.7	8.2			5,283.3	8.8
16 May			212.3	10.8	1317.5	10.1	67.1	9.3	673.5	10.2					2,270.4	9.9
17 May			188.7	11.0	980.5	8.9	383.6	10.1	849.0	8.8					2,401.8	7.6
18 May			1409.3	11.9	1537.3	10.6	121.3	10.1	621.8	10.0					3,689.7	11.0
19 May			919.4	11.3	862.4	10.1			120.2	9.1					1,902.0	10.6
20 May			830.2	12.2	344.2	11.0	31.5	9.9	1,616.7	9.9					2,822.6	10.7
21 May			853.9	11.9	165.5	9.8			1,440.1	10.0					2,459.5	10.6
22 May			227.4	11.8	227.4	10.0	141.7	10.2	1,487.1	9.8	29.5	8.0			2,113.1	8.3
23 May			424.4	11.8					173.7						598.1[a]	11.8
24 May			263.2	12.2					104.8						368.0[a]	12.2
25 May			261.0	11.5											261.0	11.5
26 May			162.0	12.5	14.3	9.7									176.3	12.3
27 May			258.8	12.1	6.7	9.0									265.5	12.0
Total			6,722.5	10.0	5932.0	10.1	1,478.4	10.1	12,013.1	9.6	209.2	8.2	0.0	0.0	26,355.2	9.8

Note: Blank cells represent no data due to area closures.

[a] Includes test fish harvest which is conducted during closed commercial periods and as food/bait.

Table 31.–Herring total run and commercial catch by year class, Togiak District, 2010.

Year		Total Run		Harvest[a]		Escapement	
Class	Age	(tons)	%	(tons)	%	(tons)	%
1989	20	0	0	0	0	0	0
1990	19	41	0	0	0	41	0
1991	18	0	0	7	0	-7	0
1992	17	184	0.1	45	0.3	139	0.1
1993	16	183	0.1	48	0.3	135	0.1
1994	15	1,257	0.9	183	1.1	1,074	0.9
1995	14	1,669	1.2	271	1.6	1,398	1.1
1996	13	5,239	3.7	802	4.7	4,437	3.5
1997	12	13,161	9.3	2,032	11.9	11,129	8.9
1998	11	10,530	7.4	1,781	10.4	8,749	7
1999	10	7,941	5.6	1,323	7.7	6,618	5.3
2000	9	8,125	5.7	1,437	8.4	6,688	5.3
2001	8	17,367	12.2	2,444	14.3	14,923	11.9
2002	7	21,150	14.9	2,359	13.8	18,791	15
2003	6	20,623	14.5	1,789	10.5	18,834	15.1
2004	5	20,940	14.7	1,550	9.1	19,390	15.5
2005	4	13,417	9.4	1,014	5.9	12,403	9.9
2006	3	306	0.2	25	0.1	281	0.2
2007	2	0	0	0	0	0	0
Total		142,133	100	17,107	100	125,026	100

[a] Does not include Dutch Harbor food and bait fishery.

Table 32.–Commercial herring sac roe and spawn-on-kelp buyers in Togiak District, 2010.

			Product Purchased		
			Sac Roe		
	Operator/Buyer[a]	Base of Operation	Gillnet	Purse Seine	Spawn-on-Kelp
1	Icicle Seafoods	P/Vs Bering Star, Arctic Star, R.M. Thorstensen	X	X	
2	Snopac Products	P/V Snopac Innovator,	X	X	
3	Trident Seafoods	P/V Pribilof, P/V Alaska Packer	X	X	
4	Y.A.K. Inc.	S/P Red Salmon Cannery	X	X	
5	North Pacific Seafoods	S/P Pedersen Pt., S/P Togiak Fish - Togiak	X	X	
6	Leader Creek Fisheries	S/P Naknek	X	X	

[a] Operators that registered in the Togiak District.

APPENDIX A. SALMON

Appendix A1.–Escapement goal ranges and actual counts of sockeye salmon by river system, in thousands of fish, Bristol Bay, 1990–2010.

	Kvichak River			Naknek River [a]		
	Range			Range		
Year	Lower	Upper	Actual	Lower	Upper	Actual
1990	6,000	10,000	6,970	800	1,400	2,093
1991	4,000	8,000	4,223	800	1,400	3,579
1992	4,000	8,000	4,726	800	1,400	1,607
1993	4,000	8,000	4,025	800	1,400	1,536
1994	6,000	10,000	8,338	800	1,400	991
1995	6,000	10,000	10,039	800	1,400	1,111
1996	4,000	6,000	1,451	800	1,400	1,078
1997	4,000	6,000	1,504	800	1,400	1,026
1998	2,000	10,000	2,296	800	1,400	1,202
1999	6,000	10,000	6,197	800	1,400	1,625
2000	6,000	10,000	1,828	800	1,400	1,375
2001	2,000	10,000	1,095	800	2,000	1,830
2002	2,000	10,000	704	800	2,000	1,264
2003	2,000	10,000	1,687	800	2,000	1,831
2004	2,000	10,000	5,500	800	2,000	1,939
2005	2,000	10,000	2,320	800	2,000	2,745
2006	2,000	10,000	3,068	800	2,000	1,953
2007	2,000	10,000	2,810	800	2,000	2,945
2008	2,000	10,000	2,758	800	1,400	2,473
2009	2,000	10,000	2,266	800	1,400	1,170
20-Year Avg.	3,500	9,300	3,690	800	1,610	1,769
1990-99 Avg.	4,600	8,600	4,977	800	1,400	1,585
2000-09 Avg.	2,400	10,000	2,404	800	1,820	1,953
2010	2,000	10,000	4,207	800	1,400	1,464

	Egegik River			Ugashik River		
	Range			Range		
Year	Lower	Upper	Actual	Lower	Upper	Actual
1990	800	1,200	2,191	500	900	730
1991	800	1,200	2,787	500	900	2,457
1992	800	1,200	1,945	500	900	2,174
1993	800	1,200	1,517	500	900	1,390
1994	800	1,200	1,897	500	900	1,081
1995	800	1,400	1,282	500	1,200	1,304
1996	800	1,400	1,076	500	1,200	668
1997	800	1,400	1,104	500	1,200	618
1998	800	1,400	1,111	500	1,200	891
1999	800	1,400	1,728	500	1,200	1,652
2000	800	1,400	1,032	500	1,200	620
2001	800	1,400	969	500	1,200	834
2002	800	1,400	1,036	500	1,200	892
2003	800	1,400	1,152	500	1,200	759
2004	800	1,400	1,290	500	1,200	776
2005	800	1,400	1,622	500	1,200	779
2006	800	1,400	1,465	500	1,200	978
2007	800	1,400	1,433	500	1,200	2,599
2008	800	1,400	1,260	500	1,200	569
2009	800	1,400	1,146	500	1,200	1,346
20-Year Avg.	800	1,350	1,452	500	1,125	1,156
1990-99 Avg.	800	1,300	1,664	500	1,050	1,297
2000-09 Avg.	800	1,400	1,241	500	1,200	1,015
2010	800	1,400	927	500	1,200	805

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	Wood River			Igushik River		
	Range			Range		
Year	Lower	Upper	Actual	Lower	Upper	Actual
1990	700	1,200	1,069	150	250	366
1991	700	1,200	1,160	150	250	756
1992	700	1,200	1,286	150	250	305
1993	700	1,200	1,176	150	250	406
1994	700	1,200	1,472	150	250	446
1995	700	1,200	1,475	150	250	473
1996	700	1,200	1,650	150	250	401
1997	700	1,200	1,512	150	250	128
1998	700	1,200	1,756	150	250	216
1999	700	1,200	1,512	150	250	446
2000	700	1,200	1,300	150	250	413
2001	700	1,500	1,459	150	300	410
2002	700	1,500	1,284	150	300	123
2003	700	1,500	1,460	150	300	194
2004	700	1,500	1,543	150	300	110
2005	700	1,500	1,497	150	300	366
2006	700	1,500	4,008	150	300	305
2007	700	1,500	1,528	150	300	415
2008	700	1,500	1,725	150	300	1,055
2009	700	1,500	1,319	150	300	514
20-Year Avg.	700	1,335	1,560	150	273	392
1990-99 Avg.	700	1,200	1,407	150	250	389
2000-09 Avg.	700	1,470	1,712	150	295	391
2010	700	1,500	1,804	150	300	518

	Nushagak River [b]			Togiak River		
	Range			Range		
Year	Lower [c]	Upper	Actual	Lower	Upper	Actual
1990	340	760	680	140	250	142
1991	340	760	493	140	250	255
1992	340	760	695	140	250	199
1993	340	760	715	140	250	177
1994	340	760	509	140	250	155
1995	340	760	281	140	250	186
1996	340	760	504	140	250	157
1997	340	760	373	100	200	132
1998	340	760	459	100	200	154
1999	235	760	393	100	200	156
2000	235	760	404	100	200	312
2001	340	760	804	100	200	297
2002	235	760	316	100	200	162
2003	340	760	581	100	200	232
2004	340	760	492	100	200	129
2005	340	760	1,096	100	200	149
2006	340	760	541	100	200	312
2007	340	760	518	120	270	270
2008	340	760	493	120	270	206
2009	340	760	484	120	270	314
20-Year Avg.	324	760	542	117	228	205
1990-99 Avg.	330	760	510	128	235	171
2000-09 Avg.	319	760	573	106	221	238
2010	340	760	469	120	270	188

[a] An “optimal escapement goal” of up to 2,000,000 sockeye salmon set by the BOF in 2001, when fishing in the Naknek River Special Harvest Area.

[b] Actual escapement through 1988 is Nuyakuk River tower count, from 1989 to present is based on sonar count at Portage Creek.

[c] The "optimal escapement goal" of 235,000 sockeye salmon set by the BOF in 1999.

Appendix A2.–Salmon entry permit registration by gear and residency, Bristol Bay, 1990–2010.

	Drift Net [a]						Set Net [a]						Total
Year	Resident	Non-Resident	Drift Total	Permits Fished [b]	% Fished	Interim Use	Resident	Non-Resident	Set Total	Permits Fished[b]	% Fished	Interim Use	Drift Set
1990	1,039	839	1,878	1,869	100%	93	783	243	1,026	971	95%	15	2,849
1991	1,019	862	1,881	1,873	100%	88	771	253	1,024	950	93%	12	2,831
1992	997	886	1,883	1,879	100%	86	774	251	1,025	968	94%	8	2,851
1993	982	904	1,886	1,875	99%	81	763	259	1,022	965	94%	8	2,851
1994	970	917	1,887	1,865	99%	77	760	259	1,019	939	92%	7	2,826
1995	967	921	1,888	1,882	100%	75	762	257	1,019	967	95%	8	2,855
1996	966	925	1,891	1,884	100%	70	760	257	1,017	941	93%	6	2,832
1997	959	940	1,899	1,875	99%	67	757	262	1,019	921	90%	7	2,820
1998	954	945	1,899	1,858	98%	55	756	259	1,015	901	89%	6	2,800
1999	937	961	1,898	1,847	97%	52	748	266	1,014	925	91%	6	2,823
2000	945	945	1,890	1,823	96%	38	735	277	1,012	921	91%	6	2,811
2001	958	925	1,883	1,566	83%	24	729	281	1,010	834	83%	2	2,717
2002	945	933	1,878	1,183	63%	16	717	289	1,006	680	68%	2	2,558
2003	923	944	1,867	1,389	74%	7	713	288	1,001	714	71%	1	2,581
2004	912	948	1,860	1,426	77%	3	703	286	989	797	81%	1	2,849
2005	895	967	1,862	1,526	82%	3	688	300	988	829	84%	1	2,850
2006	893	966	1,859	1,567	84%	1	683	302	985	844	86%	0	2,844
2007	881	981	1,862	1,621	87%	1	672	311	983	836	85%	0	2,845
2008	887	976	1,863	1,636	88%	0	678	302	980	850	87%	0	2,843
2009	864	999	1,863	1,642	88%	0	674	307	981	855	87%	0	2,844
20-Year Avg.	953	926	1,879	1,715	91%	46	737	272	1,009	886	88%	6	2,804
1990-99 Avg.	989	897	1,886	1,872	99%	78	767	254	1,021	949	93%	10	2,835
2000-09 Avg.	918	955	1,872	1,558	83%	15	707	290	997	823	83%	2	2,772
2010	866	997	1,863	1,731	93%	0	672	311	983	861	88%	0	2,846

Note: Limited Entry went into effect in 1974. Interim-use permits are included in the totals.

[a] Allowable gear per license/permit is measured in fathoms, 150 for drift and 50 for set net.

[b] Includes all permits registered to fish in Bristol Bay in 2010.

Appendix A3.–Sockeye salmon commercial catch by district, in numbers of fish, Bristol Bay, 1990–2010.

Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
1990	17,272,224	10,371,762	2,149,009	3,532,543	197,589	33,523,127
1991	10,475,206	6,797,166	2,945,742	5,053,845	549,221	25,821,180
1992	9,395,948	15,646,575	3,320,966	2,789,741	726,446	31,879,676
1993	8,907,876	21,600,858	4,176,900	5,236,557	539,933	40,462,124
1994	16,327,858	10,750,213	4,352,797	3,393,143	400,039	35,224,050
1995	20,279,581	14,425,979	4,509,446	4,445,883	605,328	44,266,217
1996	8,211,983	10,809,115	4,411,055	5,693,523	460,063	29,585,739
1997	589,311	7,517,389	1,402,690	2,506,818	142,569	12,158,777
1998	2,595,439	3,528,845	730,274	2,990,597	190,427	10,035,582
1999	9,452,972	7,388,080	2,256,007	6,175,419	385,411	25,657,889
2000	4,727,061	7,050,899	1,538,790	6,367,208	794,996	20,478,954
2001	5,280,538	2,872,662	480,509	4,734,800	810,096	14,178,605
2002	1,418,938	4,610,374	1,573,234	2,840,031	233,743	10,676,320
2003	3,348,453	2,291,502	1,748,934	6,665,918	706,008	14,760,815
2004	4,715,070	10,209,227	3,139,229	6,104,048	438,653	26,261,802[a]
2005	6,706,386	8,015,950	2,216,635	7,132,342	465,094	24,536,407
2006	7,153,750	7,388,027	2,426,650	10,876,552	626,442	28,471,421
2007	9,022,511	6,495,908	5,026,615	8,404,111	816,581	29,765,726
2008	10,381,844	7,403,885	2,334,022	6,903,157	651,315	27,674,223
2009	8,514,944	11,527,462	2,555,263	7,730,168	559,442	30,887,279
20-Year Avg.	8,238,895	8,835,094	2,664,738	5,478,820	514,970	25,791,795
1990-99 Avg.	10,350,840	10,883,598	3,025,489	4,181,807	419,703	28,861,436
2000-09 Avg.	6,126,950	6,786,590	2,303,988	6,775,834	610,237	22,381,083
2010	10,659,115	4,963,049	3,993,080	8,309,283	669,991	28,594,518

[a] Total includes General District catch of 1,656,994 fish.

Appendix A4.–Chinook salmon commercial catch by district, in numbers of fish, Bristol Bay, 1990–2010.

Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
1990	5,068	1,144	1,839	14,812	11,130	33,993
1991	3,584	510	589	19,718	6,039	30,440
1992	5,724	694	2,146	47,563	12,640	68,767
1993	7,468	1,464	2,811	62,971	10,851	85,565
1994	6,015	1,243	3,685	119,478	10,484	140,905
1995	5,084	760	1,551	79,942	11,981	99,318
1996	4,195	980	588	72,011	8,602	86,376
1997	3,128	2,143	1,096	64,160	6,066	76,593
1998	2,449	760	346	117,065	14,131	134,751
1999	1,295	712	1,638	10,893	11,919	26,457
2000	1,027	1,061	893	12,055	7,858	22,894
2001	904	950	989	11,568	9,937	24,348
2002	969	268	612	39,473	2,801	44,123
2003	567	131	409	42,615	3,231	46,953
2004	1,360	1,589	863	96,534	9,310	114,280[a]
2005	1,377	485	1,815	62,308	10,605	76,590
2006	2,333	915	2,608	84,881	16,225	106,962
2007	1,484	514	1,465	51,473	7,769	62,705
2008	1,307	383	1,169	18,670	3,087	25,006
2009	974	271	920	24,287	1,397	27,849
20-Year Avg.	2,816	849	1,402	52,624	8,803	64,242
1990-99 Avg.	4,401	1,041	1,629	60,861	10,384	78,317
2000-09 Avg.	1,230	657	1,174	44,386	7,222	48,603
2010	369	56	314	25,580	5,082	31,401

[a] Total includes General District catch of 4,624 fish.

Appendix A5.–Chum salmon commercial catch by district, in numbers of fish, Bristol Bay, 1990–2010.

Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
1990	422,276	122,843	31,798	375,361	102,861	1,055,139
1991	443,189	75,892	60,299	463,780	246,589	1,289,749
1992	167,168	121,472	57,170	398,691	176,123	920,624
1993	43,684	70,628	73,402	505,799	144,869	838,382
1994	219,118	62,961	52,127	328,260	232,559	895,025
1995	236,472	68,325	62,801	390,158	221,126	978,882
1996	97,574	85,151	106,168	331,414	206,226	826,533
1997	8,628	59,139	16,903	185,635	47,285	317,590
1998	82,281	29,405	8,088	208,551	67,345	395,670
1999	259,922	74,890	68,004	170,795	111,677	685,288
2000	68,218	38,777	36,349	114,454	140,175	397,973
2001	16,472	33,579	43,394	526,602	211,701	831,748
2002	19,180	23,516	35,792	276,777	112,987	468,252
2003	34,481	37,116	52,908	740,311	68,154	932,970
2004	29,972	75,061	49,358	458,902	94,025	732481[a]
2005	204,777	62,029	39,513	966,050	124,694	1,397,063
2006	457,855	153,777	168,428	1,240,235	223,364	2,243,659
2007	383,927	157,991	242,025	953,275	202,486	1,939,704
2008	237,260	92,901	135,292	492,341	301,967	1,259,761
2009	255,520	118,212	64,973	744,083	141,371	1,324,159
20-Year Avg.	255,487	118,212	64,972	744,852	141,371	1,324,894
1990-99 Avg.	198,031	77,071	53,676	335,844	155,666	820,288
2000-09 Avg.	170,766	79,296	86,803	651,303	162,092	1,199,477
2010	330,342	58,979	68,617	509,628	123,703	1,091,269

[a] Total includes General District catch of 25,163 fish.

Appendix A6.–Pink salmon commercial catch by district, in numbers of fish, Bristol Bay, 1990–2010.

Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
1990	421,690	11,593	361	54,127	8,746	496,517
1991	102	15	2	69	117	305
1992	214,228	694	525	190,102	93,989	499,538
1993	86	2	2	83	240	413
1994	11,537	145	21	8,652	69,552	89,907
1995	55	1	1	120	294	471
1996	4,590	22	21	2,681	30,308	37,622
1997	35	2	2	46	23	108
1998	11,317	674	247	6,787	6,406	25,431
1999	11	0	3	52	2	68
2000	19,659	32	4	38,309	695	58,699
2001	23	0	0	308	97	428
2002	10	1	1	204	311	527
2003	24	0	0	188	32	244
2004	7,749	0	187	26,150	18,293	52,380[a]
2005	32	0	1	554	2,108	2,695
2006	25,149	700	0	39,011	80,748	145,608
2007	9	9	2	384	533	937
2008	20,682	1,033	16	138,284	125,409	285,424
2009	23	0	1	320	544	888
20-Year Avg.	73,661	1,489	138	50,431	43,446	182,141
1990-99 Avg.	132,672	2,626	235	52,470	41,800	229,803
2000-09 Avg.	14,650	353	42	48,392	45,091	122,565
2010	8,237	1,655	0	1,289,970	39,734	1,339,596

Note: Averages include even numbered years only.

[a] Total includes General District catch of 1.

Appendix A7.–Coho salmon commercial catch by district, in numbers of fish, Bristol Bay, 1990–2010.

Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
1990	16,091	43,897	32,906	7,733	2,690	103,317
1991	17,527	47,486	42,622	5,574	4,531	117,740
1992	18,553	47,780	35,794	84,077	5,328	191,532
1993	1,779	41,603	2,387	14,345	12,615	72,729
1994	5,877	48,436	19,250	5,615	96,062	175,240
1995	1,105	21,833	13,454	4,181	8,871	49,444
1996	3,601	38,156	13,163	11,401	58,978	125,299
1997	718	35,470	7,156	4,110	2,970	50,424
1998	1,587	29,856	13,007	22,703	58,688	125,841
1999	303	11,464	2,289	2,836	2,653	19,545
2000	952	13,166	1,269	112,819	2,758	130,964
2001	3	12,603	976	3,218	284	17,084
2002	0	7,099	464	93	754	8,410
2003	42	40,577	994	583	1,047	43,243
2004	2,142	2,324	4,744	47,706	15,463	72,379
2005	3,314	20,611	8,162	42,456	8	74,551
2006	5,163	26,788	3,087	44,385	449	79,872
2007	2,180	18,111	1,954	29,578	157	51,980
2008	7,055	29,682	2,220	76,668	1,159	192,974
2009	732	11,726	2,602	35,004	9,209	59,273
20-Year Avg.	4,436	27,433	10,425	27,754	14,234	88,092
1990-99 Avg.	6,714	36,598	18,203	16,258	25,339	103,111
2000-09 Avg.	2,158	18,269	2,647	39,251	3,129	73,073
2010	1,006	9,984	467	69,186	23,730	104,373

Appendix A8.–Total salmon commercial catch by district, in numbers of fish, Bristol Bay, 1990–2010.

Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
1990	18,137,349	10,551,485	2,216,129	3,987,438	323,016	35,215,417
1991	10,939,608	6,921,069	3,049,254	5,542,986	806,497	27,259,414
1992	9,801,621	15,817,215	3,416,601	3,510,174	1,014,526	33,560,137
1993	8,960,902	21,714,569	4,255,766	5,819,760	708,508	41,459,505
1994	16,570,406	10,862,998	4,427,880	3,855,157	808,698	36,525,139
1995	20,522,297	14,516,875	4,587,276	4,920,284	847,600	45,394,332
1996	8,322,312	10,900,288	4,530,995	6,111,030	724,023	30,588,648
1997	616,084	7,626,863	1,432,200	2,866,890	200,676	12,742,713
1998	2,693,068	3,589,540	751,962	3,345,717	336,995	10,717,282
1999	9,714,503	7,475,146	2,327,941	6,359,995	511,662	26,389,247
2000	4,816,917	7,082,513	1,577,305	6,644,845	946,482	21,068,062
2001	5,297,940	2,919,794	525,868	5,276,496	1,032,115	15,052,213
2002	1,439,097	4,641,258	1,610,103	3,156,646	350,596	11,197,700
2003	3,383,567	2,369,326	1,803,245	7,449,615	778,472	15,784,225
2004	4,756,293	10,288,201	3,194,381	6,733,340	574,325	27,233,322[a]
2005	6,937,969	8,099,075	2,266,126	8,167,399	602,509	26,073,078
2006	7,642,241	7,591,163	2,603,760	12,285,064	947,228	31,069,456
2007	9,410,111	6,672,533	5,272,061	9,438,821	1,027,526	31,821,052
2008	10,648,148	7,527,884	2,472,719	7,629,284	1,082,937	29,365,710
2009	8,772,201	11,657,671	2,623,759	8,534,862	714,575	32,303,068
20-Year Avg.	8,469,132	8,941,273	2,747,267	6,081,790	716,948	27,030,863
1990-99 Avg.	10,627,815	10,997,605	3,099,600	4,631,943	628,220	29,985,183
2000-09 Avg.	6,310,448	6,884,942	2,394,933	7,531,637	805,677	23,748,285
2010	10,999,069	5,033,723	4,062,478	10,203,647	862,240	31,161,158

[a] Total includes General District catch.

Appendix A9.–Commercial sockeye salmon catch, in percent, by gear type and district, Bristol Bay, 1990–2010.

	Naknek-Kvichak									Nushagak								
		Setnet Sec.		NRSHA [a]		Egegik		Ugashik			Setnet Sec.		WRSHA [b]		Togiak		Total	
Year	Drift	Nak.	Kvi.	Drift	Set	Drift	Set	Drift	Set	Drift	Nush.	Igushik	Drift	Set	Drift	Set	Drift	Set
1990	88	12				91	9	91	9	67	33				67	33	86	14
1991	89	11				91	9	89	11	76	24				64	36	86	14
1992	89	11				91	9	90	10	65	35				62	38	87	13
1993	84	16				93	7	90	10	72	28				54	46	86	14
1994	90	10				92	8	94	6	68	32				52	48	88	12
1995	89	11				90	10	95	5	68	32				52	48	87	13
1996	83	17				90	10	95	5	81	19				52	55	88	12
1997	73	27				87	13	88	12	70	30				37	63	87	13
1998	84	8	8			86	14	85	15	72	24	4	76	24	43	57	86	14
1999	85	8	7			85	15	89	11	70	24	6	78	22	53	47	82	18
2000	84	11	5			84	16	87	13	77	17	6	68	32	57	43	80	20
2001	82	16	2	74 [c]	26 [c]	86	14	80	20	77	18	5			66	34	80	20
2002				64 [c]	36 [c]	85	15	88	12	77	22	1	67	33	62	38	79	21
2003	91	9	0	65 [c]	35 [c]	81	19	89	11	83	15	2			63	37	79	21
2004	79	11	10	88	12	86	14	88	12	84	15	1			55	45	79	21
2005				81	19	82	18	87	13	84	14	2			56	44	66	34
2006	86	8	5	81	19	84	16	88	12	87	11	2			53	47	85	15
2007	82	12	6	80	12	84	16	92	8	80	17	3			59	41	81	19
2008	81	12	7			85	15	92	8	79	16	5			60	40	82	18
2009	80	12	9			85	15	87	13	76	20	4			60	40	82	18
20-Year Avg.	85	12	6	76	23	87	13	89	11	75	23	3	72	28	56	44	81	19
1990-99 Avg.	86	13	8			90	10	90	10	70	30				54	47	87	13
2000-09 Avg.	84	11	5	76	23	84	16	88	12	80	17	3	71	29	58	42	79	21
2010	81	10	9	-	-	84	16	90	10	78	17	6	71	29	61	39	82	18
Allocation [d]	84	8	8	84	16	86	14	90	10	74	20	6	74	26	NA	NA	NA	NA

Note: Blank cells indicate no data.

[a] Naknek River Special Harvest Area (NRSHA), Naknek-Kvichak District; allocation plan enacted in December 2003.

[b] Wood River Special Harvest Area (WRSHA), Nushagak District.

[c] NRSHA prior to allocation plan; fishing periods were alternated between gear types.

[d] The BOF enacted allocation plan in 1998; reviewed in December 2003. Historical data prior to 1998 is based on postseason numbers. Inseason numbers are presented for 1998 to present, as they were used to make management decisions regarding allocation.

Appendix A10.–Sockeye salmon escapement by district, in numbers of fish, Bristol Bay, 1990–2010.

Year	Naknek-Kvichak [a]	Egegik [b]	Ugashik [c]	Nushagak [d]	Togiak [e]	Total
1990	9,231,358	2,191,582	749,478	2,144,444	278,202	14,595,064
1991	8,078,885	2,786,925	2,482,001	2,419,488	320,713	16,088,012
1992	6,557,157	1,945,632	2,194,927	2,286,278	266,956	13,250,950
1993	5,908,799	1,517,000	1,413,454	2,296,789	242,475	11,378,517
1994	9,571,245	1,894,977	1,095,068	2,449,616	233,632	15,244,538
1995	11,365,573	1,282,508	1,321,108	2,254,231	240,266	16,463,686
1996	2,835,426	1,075,596	692,167	2,553,995 [f]	212,524	7,369,708
1997	2,747,511	1,104,004	656,641	2,021,529	171,373	6,701,058
1998	3,750,246	1,110,932	924,853	2,441,666	214,626	8,442,323
1999	8,303,878	1,727,772	1,662,042	2,269,861 [f]	231,196	14,194,749
2000	3,654,568	1,032,138	638,420	2,116,842 [f]	390,080	7,832,048
2001	3,194,708	968,872	866,368	2,679,432 [f]	338,616 [g]	9,016,868
2002	2,303,463	1,036,092	905,584	1,722,519 [f]	199,507	6,167,165
2003	5,627,974 [h]	1,152,120	790,202	2,241,556 [f]	261,851 [g]	10,073,703
2004	12,836,100 [h]	1,290,144	815,104	2,144,690 [f]	154,681 [g]	17,240,719
2005	9,283,980 [h]	1,621,734	799,612	2,958,527 [f]	155,778 [g]	14,819,631
2006	6,795,420 [h]	1,465,158	1,003,158	4,861,780 [f]	312,126 [g]	14,437,642
2007	8,221,926 [h]	1,432,500	2,599,186	2,461,579 [f]	269,646 [g]	14,984,837
2008	7,411,104 [h]	1,259,568	596,332	3,271,926 [f]	205,680 [g]	12,744,610
2009	4,406,424 [h]	1,146,276	1,364,338	2,317,569 [f]	313,946 [g]	9,548,553
20-Year Avg.	6,604,287	1,452,077	1,178,502	2,495,716	250,694	12,029,719
1900-99Avg.	6,835,008	1,663,693	1,319,174	2,313,790	241,196	12,372,861
2000-09 Avg.	6,373,567	1,240,460	1,037,830	2,677,642	260,191	11,686,578
2010	6,859,068 [h]	927,054	830,886	2,791,080 [f]	188,298 [g]	11,596,386

[a] Includes counts from Kvichak Tower, Alagnak aerial survey, and Naknek Tower.

[b] Includes Egegik River. May include King Salmon River and Shosky Creek; see Appendix A14 for specific counts.

[c] Includes Ugashik River. Also includes Mother Goose River and Dog Salmon River system in 1984–2010.

[d] Includes Wood, Igushik, Nuyakuk, Nushagak-Mulchatna and Snake Rivers.

[e] Includes Togiak River, Lake tributaries, Kulukak system and other miscellaneous river systems.

[f] Snake River not surveyed.

[g] Only partial and/ or late survey of Togiak streams in 2001, 2003–2008.

[h] Alagnak tower count.

Appendix A11.–Inshore commercial catch and escapement of sockeye salmon in the Naknek-Kvichak District by river system, in numbers of fish, Bristol Bay, 1990–2010.

		Escapement				
Year	Catch	Kvichak [a]	Alagnak [b]	Naknek [a]	Total	Total Run
1990	17,272,224	6,970,020	168,760	2,092,578	9,231,358	26,503,582
1991	10,475,206	4,222,788	277,589	3,578,508	8,078,885	18,554,091
1992	9,395,948	4,725,864	224,643	1,606,650	6,557,157	15,953,105
1993	8,907,876	4,025,166	347,975	1,535,658	5,908,799	14,816,675
1994	16,327,858	8,337,840	242,595	990,810	9,571,245	25,899,103
1995	20,279,581	10,038,720	215,713	1,111,140	11,365,573	31,645,154
1996	8,211,983	1,450,578	306,750	1,078,098	2,835,426	11,047,409
1997	589,311	1,503,732	218,115	1,025,664	2,747,511	3,336,822
1998	2,595,439	2,296,074	252,200	1,202,172	3,750,446	6,345,885
1999	9,452,972	6,196,914	481,600	1,625,364	8,303,878	17,756,850
2000	4,727,061	1,827,780	451,300	1,375,488	3,654,568	8,381,629
2001	5,280,538	1,095,348	267,000	1,830,360	3,192,708	8,473,246
2002	1,418,938	703,884	335,661	1,263,918	2,303,463	3,722,401
2003	3,348,453	1,686,804	3,676,146 [a]	1,831,170	7,194,120	10,542,573
2004	4,715,070	5,500,134	5,396,592 [a]	1,939,374	12,836,100	17,551,170
2005	6,706,386	2,320,422	4,219,026 [a]	2,744,622	9,284,070	15,990,456
2006	7,153,750	3,068,226	1,773,966 [a]	1,953,228	6,795,420	13,949,170
2007	9,022,511	2,810,208	2,466,414 [a]	2,945,304	8,221,926	17,244,437
2008	10,381,844	2,757,912	2,180,502 [a]	2,472,690	7,411,104	17,792,948
2009	8,514,944	2,266,140	970,818 [a]	1,169,466	4,406,424	12,925,769
20-Year Avg.	8,238,895	3,690,228		1,768,613	6,682,509	14,921,624
1990-99 Avg.	10,350,840	4,976,770		1,584,664	6,835,028	17,185,868
2000-09 Avg.	6,126,950	2,403,686		1,952,562	6,529,990	12,657,380
2010	10,659,115	4,207,410	1,187,730	1,463,928	6,859,068	17,518,183

[a] Tower count.

[b] Aerial survey estimates.

Appendix A12.–Inshore sockeye salmon total run by river system Naknek-Kvichak District, in thousands of fish, Bristol Bay, 1990–2010.

	Kvichak		Alagnak			Naknek		
Year	Number	%	Number	%		Number	%	Total Run [a]
1990	17,521	66	555	2	[b]	8,427	32	26,503
1991	8,032	43	604	3	[b]	9,918	53	18,554
1992	10,445	65	487	3	[b]	5,021	31	15,953
1993	9,313	63	817	6	[b]	4,687	32	14,817
1994	22,232	86	634	2	[b]	3,033	12	25,899
1995	27,431	87	651	2	[b]	3,564	11	31,646
1996	3,458	31	706	6	[b]	6,860	62	11,024
1997	1,683	50	244	7	[b]	1,409	42	3,336
1998	3,412	54	388	6	[b]	2,546	40	6,346
1999	12,947	73	1,070	6	[b]	3,740	21	17,757
2000	2,862	34	731	9	[b]	4,789	57	8,382
2001	1,426	17	409	5	[b]	6,639	78	8,474
2002	704	19	336	9	[b]	2,671	72	3,711
2003	1,721	19	2,110	24		5,096	57	8,927
2004	7,332	42	6,510	37		3,721	21	17,563
2005	2,951	18	5,436	33		8,005	49	16,392
2006	5,804	42	2,854	20		5,292	38	13,950
2007	4,231	25	4,277	25		8,736	51	17,244
2008	5,632	32	5,907	33		6,254	35	17,793
2009	5,563	43	2,624	20		4,734	37	12,921
20-Year Avg.	7,735	45	1,868	13		5,257	42	14,860
1990-99 Avg.	11,647	62	616	4		4,921	34	17,184
2000-10 Avg.	3,823	29	3,119	22		5,594	50	12,536
2010	9,225	53	2,584	15		5,709	32	17,518

[a] Total run is based on aerial survey estimate, not tower counts.

[b] Due to rounding of river system total runs, district total run may not equal the sum of the rows.

Appendix A13.–Inshore commercial catch and escapement of sockeye salmon in the Egegik District by river system, in numbers of fish, Bristol Bay, 1990–2010.

		Escapement			
Year	Catch	Egegik [a]	Shosky Cr. [b]	King Salmon River [b]	Total Run
1990	10,371,762	2,191,362		220	12,563,344
1991	6,797,166	2,786,880		45	9,584,091
1992	15,646,575	1,945,332		300	17,592,207
1993	21,600,858	1,516,980	20		23,117,858
1994	10,750,213	1,894,932	15	30	12,645,190
1995	14,425,979	1,281,678		830	15,708,487
1996	10,809,115	1,075,596			11,884,711
1997	7,517,389	1,103,964		40	8,621,393
1998	3,528,845	1,110,882		50	4,639,777
1999	7,388,080	1,727,772		625	9,116,477
2000	7,050,899	1,032,138			8,083,037
2001	2,872,662	968,862	10		3,841,534
2002	4,610,374	1,036,092			5,646,466
2003	2,291,502	1,152,030		90	3,443,622
2004	10,209,227	1,290,144			11,499,371
2005	8,015,950	1,621,584	0		9,625,584
2006	7,388,027	1,465,128	0		8,853,155
2007	6,493,655	1,432,500	0	1,500	7,929,908
2008	7,403,885	1,259,568	0	250	8,639,689
2009	11,527,462	1,146,276	0	4	12,673,742
20-Year Avg.	8,834,981	1,451,985	6	332	10,285,482
1990-99 Avg.	10,883,598	1,663,538	18	268	12,547,354
2000-09 Avg.	6,786,364	1,240,432	2	461	8,023,611
2010	4,963,049	926,904	NA	150	5,890,103

Note: Blank cells represent no data.

[a] Tower count.

[b] Aerial survey index count.

Appendix A14.–Inshore commercial catch and escapement of sockeye salmon in the Ugashik District by river system, in numbers of fish, Bristol Bay, 1990–2010.

		Escapement			
Year	Catch	Ugashik [a] River	King Salmon [b] River	Dog Salmon [b] River	Total Run
1990	2,149,009	730,038	11,340	8,100	2,898,487
1991	2,945,742	2,457,306	12,195	12,500	5,427,743
1992	3,320,966	2,173,692	13,425	7,810	5,515,893
1993	4,176,900	1,389,534	22,570	1,350	5,590,354
1994	4,352,797	1,080,858	8,885	5,325	5,447,865
1995	4,509,446	1,304,058	7,650	9,400	5,830,554
1996	4,411,055	667,518	7,230	17,419	5,103,222
1997	1,402,690	618,396	27,645	10,600	2,059,331
1998	730,274	890,508	27,425	6,920	1,655,127
1999	2,256,007	1,651,572	6,350	4,120	3,918,049
2000	1,538,790	620,040	12,900	5,480	2,177,210
2001	480,509	833,628	22,940	9,800	1,346,877
2002	1,573,234	892,104	11,460	2,020	2,478,818
2003	1,748,934	758,532	27,620	4,000	2,539,086
2004	3,139,229	776,364	22,850	15,890	3,954,333
2005	2,216,635	779,172	0 [c]	20,440	3,016,247
2006	2,426,650	978,718	0 [c]	24,440	3,429,808
2007	5,026,615	2,523,686	5,420 [c]	70,020	7,625,741
2008	2,334,022	588,632	0 [c]	7,700	2,916,121
2009	2,555,263	1,346,630	0 [c]	17,920	3,919,813
20-Year Avg.	2,664,738	1,153,049	12,395	13,063	3,842,534
1990-99 Avg.	3,025,489	1,296,348	14,472	8,354	4,344,663
2000-09 Avg.	2,303,988	1,009,751	10,319	17,771	3,340,405
2010	3,993,080	805,686 [d]	0 [c]	25,200	4,823,966

[a] Tower count plus fish observed in lower Ugashik River during postseason surveys.

[b] Aerial survey.

[c] King Salmon system still affected by Mt. Chiginigak-see text for explanation.

[d] Includes 300 sockeye salmon at Lower Ugashik Lake outlet from postseason aerial survey.

Appendix A15.–Inshore commercial catch and escapement of sockeye salmon in the Nushagak District by river system, in numbers of fish, Bristol Bay, 1990–2010.

		Escapement							
Year	Catch	Wood [a]	Igushik [a]	Nuyakuk [a]	Nush/Mul [b]	Nushagak [c]	Snake [d]	Total	Total Run
1990	3,532,543	1,069,440	365,802			680,368	28,840	2,144,450	5,676,993
1991	5,053,845	1,159,920	756,126			492,522	10,920	2,419,488	7,473,333
1992	2,789,741	1,286,250	304,920			695,108		2,286,278	5,076,019
1993	5,236,557	1,176,126	405,564			715,099		2,296,789	7,533,346
1994	3,393,143	1,471,890	445,920			509,326	22,480	2,449,616	5,842,759
1995	4,445,883	1,482,162	473,382	69,702	211,605	281,307	17,380	2,254,231	6,700,114
1996	5,693,523	1,649,598	400,746	250,692	252,959	503,651		2,553,995	8,247,518
1997	2,506,818	1,512,396	127,704	272,982	100,053	373,035	8,394	2,021,529	4,528,347
1998	2,990,597	1,755,768	215,904	146,250	312,624	458,874	11,120	2,441,666	5,432,263
1999	6,175,419	1,512,426	445,536	81,006	230,893	311,899	[e]	2,269,861	8,445,280
2000	6,367,208	1,300,026	413,316	129,468	274,032	403,500	[e]	2,116,842	8,484,050
2001	4,734,800	1,458,732	409,596	184,044	627,060	811,104	[e]	2,679,432	7,414,232
2002	2,840,031	1,283,682	123,156	68,928	246,753	315,681	[e]	1,722,519	4,562,550
2003	6,665,918	1,459,782	194,088	116,646	463,888	580,534	[e]	2,234,404	8,900,322
2004	6,104,048	1,543,342	109,650	77,406	414,292	491,698	[e]	2,144,690	8,248,738
2005	7,132,342	1,496,550	365,709	251,016	845,252	1,096,268	[e]	2,958,527	10,090,869
2006	10,876,552	4,008,102	305,268	170,760	377,650	548,410	[e]	4,861,780	15,738,332
2007	8,404,111	1,528,086	415,452	[f]		518,041	[e]	2,461,579	10,865,690
2008	6,903,157	1,724,676	1,054,704			492,546	[e]	3,271,926	10,175,083
2009	7,730,168	1,319,232	514,188			484,149	[e]	2,317,569	10,047,737
20-year Avg.	5,478,820	1,559,909	392,337	151,575	363,088	538,156	16,522	2,495,359	7,974,179
1990-99 Avg.	4,181,807	1,407,598	394,160	164,126	221,627	502,119	16,522	2,313,790	6,495,597
2000-09 Avg.	6,775,834	1,712,221	390,513	142,610	464,132	574,193		2,676,927	9,452,760
2010	8,309,283	1,804,344	518,040	[f]		468,696		2,791,080	11,100,363

Note: Blank cells represent no data.

[a] Tower count.

[b] Escapement estimates for 1988, and 1995–2005, were derived from the difference between lower river sonar estimates and Nuyakuk Tower counts.

[c] Total escapements from 1989 on are determined for the entire Nushagak River drainage using Portage Creek sonar estimates.

[d] Aerial survey estimate 1988–1991, 1994–1995 and 1997; weir count not surveyed in 1992, 1993 or 1996 due to lack of funding.

[e] Snake River escapement is not included this year because staff was unable to conduct aerial surveys.

[f] The Nuyakuk Tower project was discontinued prior to 2007. There is no longer a breakdown of Nuyakuk or Nush/Mul. escapements.

Appendix A16.–Inshore sockeye salmon total run by river system, in thousands of fish, Nushagak District, Bristol Bay, 1990–2010.

	Wood		Igushik		Nushagak								Snake [b]		
	Total Run		Total Run		Nushagak Escapement [a]					Catch	Total Run				
					Nuyakuk		Nush-Mul		Sonar	Total					
Year	Number	%	Number	%	Number	%	Number	%	Estimate	Number	Number	%	Number	%	Total Run [c]
1990	2,610	46	1,280	23					680	1,077	1,757	31	29	1	5,676
1991	3,303	44	2,424	32					493	1,243	1,736	23	11	0	7,474
1992	2,481	49	794	16					695	1,107	1,802	35			5,077
1993	3,725	49	1,580	21					715	1,513	2,228	30			7,533
1994	2,957	51	1,300	22					509	1,034	1,543	26	42	1	5,842
1995	4,022	60	1,902	28	70	25	211	75	281	475	756	11	20	0	6,700
1996	5,007	61	1,481	18	251	50	253	50	504	1,256	1,760	21			8,248
1997	3,365	74	291	6	273	73	100	27	373	491	864	19	8	0	4,528
1998	3,901	72	571	11	146	32	313	68	459	490	949	17	11	0	5,432
1999	5,930	70	1,563	19	81	26	231	74	312	640	952	11			8,445
2000	5,278	62	1,748	21	129	32	275	68	404	1,054	1,458	17			8,484
2001	3,987	54	1,315	18	184	23	627	77	811	1,301	2,112	28			7,414
2002	3,715	81	207	5	69	22	247	78	316	325	641	14			4,563
2003	5,647	63	1,018	11	117	20	464	80	581	1,655	2,236	25			8,901
2004	5,375	65	564	7	77	16	415	84	492	1,801	2,293	28			8,232
2005	4,771	47	1,878	19	251	23	845	77	1,096	2,346	3,442	34			10,091
2006	11,064	70	1,435	9	171	31	377	69	548	2,690	3,238	21			15,737
2007	6,523	60	1,762	16					518	2,062	2,580	24			10,865
2008	5,236	56	2,394	26					493	1,152	1,645	18			9,275
2009	7,195	72	926	9					484	1,443	1,927	19			10,048
20-Year Avg.	4,805	60	1,322	17	152	31	363	69	538	1,258	1,796	23	20	0	7,928
1990-99 Avg.	3,730	58	1,319	20	164	41	222	59	502	933	1,435	23	20	0	6,496
2000-09 Avg.	5,879	63	1,325	14	143	24	464	76	574	1,583	2,157	23			9,361
2010	7,618	69	1,355	12					469	1,659	2,128	19			11,101

Note: Blank cells represent no data.

[a] Escapement percentages represent the portion of sonar escapement that is accounted for in the Nuyakuk or Nushagak-Mulchatna drainages.

[b] Snake River escapement is not included from 1999–2008 because staff was unable to conduct aerial surveys

[c] Due to rounding, the district total runs may not equal the sum of the rows. District total run is the sum of Wood, Igushik, Nushagak, and Snake total run numbers.

Appendix A17.–Inshore commercial catch and escapement of sockeye salmon in the Togiak District by river system, in numbers of fish, Bristol Bay, 1990–2010.

	Catch				Escapement						
Year	Togiak	Kulukak	Os/Mat [a]	Total	Togiak Lake [b]	Togiak River [c]	Tributaries [d]	Kulukak [e]	Other [f]	Total	Total Run
1990	168,688	27,311	1,590	197,589	141,977	17,540	29,605	49,600	39,480	278,202	475,791
1991 [g]	522,090	33,425	6,437	549,221	254,683	15,980	7,740	23,940	18,370	320,713	869,934
1992	610,575	108,358	7,513	726,446	199,056	6,060	10,400	26,440	25,000	266,956	993,402
1993	475,799	58,616	5,518	539,933	177,185	4,600	11,330	31,800	17,560	242,475	782,408
1994	321,121	76,781	2,137	400,039	154,752	6,200	13,220	29,740	29,720	233,632	633,671
1995	527,143	76,056	2,129	605,328	185,718	6,520	18,988	14,620	14,420	240,266	845,594
1996	381,539	76,833	1,691	460,063	156,954	18,320	11,900	18,980	6,370	212,524	672,587
1997	91,639	47,979	2,951	142,569	131,682	12,300	8,325	7,950	11,116	171,373	313,942
1998	112,993	75,279	2,155	190,427	153,576	9,780	12,120	12,950	26,200	214,626	405,053
1999	346,749	38,662	0	385,411	155,898	10,800	29,438	12,300	22,760	231,196	616,607
2000	727,384	67,612	0	794,996	311,970	25,200	15,075	22,350	15,485	390,080	1,185,076
2001 [h]	798,426	9,762	1,908	810,096	296,676	6,520	150	17,280	17,990	338,616	1,148,712
2002	214,094	19,112	537	233,743	162,402	4,100	12,075	8,500	12,430	199,507	433,250
2003 [i]	650,066	55,081	861	706,008	232,302			8,004	21,545	261,851	967,859
2004 [h,i]	357,354	80,204	1,095	438,653	129,462	6,100	75		19,044	154,681	593,334
2005 [i]	411,320	53,774	0	465,094	149,178	5,580	1,020		3,713	159,491	624,585
2006 [i]	574,629	51,603	0	626,442	312,126					312,126	938,568
2007 [i]	758,736	57,845	0	816,581	269,646					269,646	1,086,227
2008 [i]	626,792	24,523	0	651,315	205,680					205,680	856,995
2009 [i]	516,938	42,504	0	559,442	313,946					313,946	873,388
20-Year Avg.	439,606	58,576	2,427	499,983	196,817	11,153	11,742	21,062	18,825	248,188	748,171
1989-98 Avg.	384,038	66,259	4,197	453,221	176,310	12,152	12,967	25,561	20,255	243,193	696,414
1999-08 Avg.	458,490	50,628	864	510,002	209,538	10,048	9,785	12,762	16,698	245,745	755,747
2010 [1]	541,943	128,038	0	669,981	188,298					188,298	858,279

Note: Blank cells represent years of no data.

[a] Catches in the Osviak and Matogak sections were combined.

[b] Tower count.

[c] Aerial survey estimate.

[d] Aerial survey estimate includes Gechiak, Pungokepuk, Kemuk, Nayorurun, and Ongivinuck River systems.

[e] Aerial survey estimate includes Kulukak River, Kulukak Lake and Tithe Creek ponds.

[f] Aerial survey estimate includes Matogak, Osviak, Slug, Negukthlik, Ungalikthluk, and Quigmy Rivers.

[g] Catches are based on weekly processor reports. Fish tickets were not coded by section.

[h] Only the Ongivinuk River was surveyed for sockeye salmon escapement in tributaries.

[i] Partial survey.

Appendix A18.–Inshore total run of sockeye salmon by district, in numbers of fish, Bristol Bay, 1990–2010.

Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
1990	26,503,582	12,563,344	2,898,487	5,676,987	475,791	48,118,191
1991	18,554,091	9,584,091	5,427,743	7,473,333	869,934	41,909,192
1992	15,953,105	17,592,207	5,515,893	5,076,019	993,402	45,130,626
1993	14,816,675	23,117,858	5,590,354	7,533,346	782,408	51,840,641
1994	25,899,103	12,645,190	5,447,865	5,842,759	633,671	50,468,588
1995	31,645,154	15,708,487	5,830,554	6,700,114	845,594	60,729,903
1996	11,047,409	11,884,711	5,103,222	8,247,518	672,587	36,955,447
1997	3,336,822	8,621,393	2,059,331	4,527,953	313,942	18,859,441
1998	6,345,885	4,639,777	1,655,127	5,432,143	405,053	18,477,985
1999	17,738,850	9,116,477	3,918,049	8,445,280	616,607	39,835,263
2000	8,381,629	8,083,037	2,177,210	8,484,050	1,185,076	28,311,002
2001	8,473,246	3,841,534	1,346,877	7,414,232	1,148,712	22,224,601
2002	3,722,401	5,646,466	2,478,818	4,562,550	433,250	16,843,485
2003	8,976,427	3,443,622	2,539,136	8,900,322	967,859	24,827,366
2004	15,066,178	11,499,371	3,954,333	8,248,738	591,915	41,017,529[a]
2005	15,984,566	9,625,859	3,001,814	10,090,869	622,965	39,326,073
2006	13,945,960	8,873,391	3,432,755	15,738,137	886,755	42,876,998
2007	17,244,437	7,928,408	7,625,801	10,865,690	1,086,227	44,750,563
2008	17,792,948	8,663,453	2,930,354	10,175,083	856,995	40,418,833
2009	12,921,368	12,673,738	3,919,601	10,047,737	873,388	40,435,832
20-Year Avg.	14,717,492	10,287,621	3,842,666	7,974,143	763,107	37,491,581
1990-99 Avg.	17,184,068	12,547,354	4,344,663	6,495,545	660,899	41,232,528
2000-09 Avg.	12,250,916	8,027,888	3,340,670	9,452,741	865,314	33,334,973
2010	17,518,183	5,890,103	4,823,966	11,100,363	858,289	40,190,904

[a] Total includes General District catch.

Appendix A19.–Chinook salmon harvest, escapement and total runs in the Nushagak District, in numbers of fish, Bristol Bay, 1990–2010.

	Harvests by Fishery				Inriver	Spawning	
Year	Commercial	Sport	Subsistence	Total	Abundance [a]	Escapement [b]	Total Run
1990	14,812	3,486	12,407	30,705	63,955	55,931	86,636
1991	19,718	5,551	13,627	38,896	104,351	94,733	133,629
1992	47,563	4,755	13,588	65,906	82,848	74,094	140,000
1993	62,971	5,900	17,709	86,580	97,812	86,705	173,285
1994	119,478	10,627	15,490	145,595	95,954	83,102	228,697
1995	79,942	4,951	13,701	98,594	85,622	77,018	175,612
1996	72,011	5,391	15,941	93,343	52,127	42,227	135,570
1997	64,160	3,497	15,318	82,975		82,000	164,975
1998	117,065	5,827	12,258	135,150	117,495	108,037	243,187
1999	10,893	4,237	10,057	25,187	62,331	54,703	79,890
2000	12,055	6,017	9,470	27,542	56,372	47,674	75,216
2001	11,568	5,899	11,760	29,227	92,275	89,799	119,026
2002	39,473	3,693	11,281	54,447	87,141	79,790	134,237
2003	42,615	5,590	18,686	66,891	80,028	68,606	135,497
2004	100,601	6,813	15,610	123,024	116,400	105,442	228,466
2005	62,308	8,565	15,529	86,402	172,708	160,180	246,582
2006	84,881	7,473	9,971	102,325	124,683	116,088	218,413
2007	51,473	9,669	13,330	74,472	60,459	48,644	123,116
2008	18,968	6,700	12,960	38,628	97,330	87,673	126,301
2009	24,058	6,354	12,737	43,149	81,480	72,100	115,249
20-Year Avg.	52,831	6,050	13,572	72,452	91,125	81,727	154,179
1990-99 Avg.	60,861	5,422	14,010	80,293	84,722	75,855	156,148
2000-09 Avg.	44,800	6,677	13,133	64,611	96,888	87,600	152,210
2010	25,580	7,752 [c]	12,905 [c]	46,239	36,625	25,723	71,962

Note: Blank cells represent no data.

[a] Inriver abundance estimated by sonar below the village of Portage Creek.

[b] Spawning escapement estimated from aerial surveys in 1997 and from inriver abundance minus inriver harvest all other years.

[c] Data not available at the time of publication. Five year average used.

Appendix A20.–Chinook salmon harvest, escapement and total runs in the Togiak District, in numbers of fish, Bristol Bay, 1990–2010.

	Harvests by Fishery				Spawning		Total	
Year	Commercial	Sport [a]	Subsistence	Total	Escapement	[b]	Run	
1990	11,130	172	480	11,782	9,107		20,889	
1991	6,039	284	470	6,793	12,667		19,460	
1992	12,640	271	1,361	14,272	10,413		24,685	
1993	10,851	225	784	11,860	16,035		27,895	
1994	10,486	663	904	12,053	19,353		31,406	
1995	11,981	581	448	13,010	16,438		29,448	
1996	8,602	790	471	9,863	11,476		21,339	
1997	6,114	1,165	667	7,946	11,495		19,441	
1998	14,131	763	782	15,676	11,666		27,342	
1999	11,919	644	1,244	13,807	12,263		26,070	
2000	7,858	470	1,116	9,444	16,897		26,341	
2001	9,937	1,006	1,612	12,555	15,185		27,740	
2002	2,801	76	703	3,580	14,265		17,845	
2003	3,231	706	1,208	5,145	5,668	[c]		[d]
2004	9,310	1,388	1,094	11,792	15,990		27,782	
2005	10,605	1,734	1,528	13,867	13,521		27,388	
2006	16,225	1,064	1,630	18,919	1,670	[c]		[d]
2007	7,755	1,501	1,234	10,490	0	[c]		[d]
2008	3,094	592	1,337	5,023	2,140	[c]		[d]
2009	4,397	606	827	5,830		[f]		[d]
20-Year Avg.	8,955	735	995	10,685	11,382		25,005	
1990-99 Avg.	10,389	556	761	11,706	13,091		24,460	
2000-09 Avg.	7,921	890	1,230	10,041	9,482		N/A	
2010	5,082	1,099 [e]	1,311 [e]	7,492		[f]		[d]

[a] Sport fish harvest estimate only includes the Togiak River Section.

[b] Spawning escapement estimated from comprehensive aerial surveys. Estimates for 1988 are rounded to the nearest thousand fish.

[c] No survey conducted.

[d] Total run size cannot be determined in the absence of complete escapement data.

[e] Data not available at the time of publication. Five year average used.

Appendix A21.–Inshore commercial catch and escapement of chum salmon in the Nushagak and Togiak Districts, in numbers of fish, 1990–2010.

	Nushagak District			Togiak District		
Year	Catch	Escapement [a]	Total Run	Catch	Escapement [b]	Total Run
1990	378,223	329,793	708,016	102,861	67,460	170,321
1991	463,780	287,280	751,060	246,589	149,210	395,799
1992	398,691	302,678	701,369	176,123	120,000	296,123
1993	505,799	217,230	723,029	144,869	98,470	243,339
1994	328,267	378,928	707,195	232,559	229,470	462,029
1995	390,158	212,612	602,770	221,126	163,040	384,166
1996	331,414	225,331	556,745	206,226	117,240	323,466
1997	185,620	61,456	247,076	47,459	106,580	154,039
1998	208,551	299,443	507,994	67,408	102,455	169,863
1999	170,795	242,312	413,107	111,677	116,183	227,860
2000	114,454	141,323	255,777	140,175	80,860 [c]	221,035
2001	526,602	564,373	1,090,975	211,701	252,610	464,311
2002	276,845	419,969	696,814	112,987	154,360	267,347
2003	740,311	295,413	1,035,724	68,406	39,090 [c]	107,496
2004	470,248	283,805	754,053	94,025	103,810	197,835
2005	874,090	448,059	1,322,149	124,694	108,346	233,040
2006	1,240,235	661,003	1,901,238	223,364	26,900 [c]	250,264
2007	953,275	161,483	1,114,758	202,486	[d]	202,486
2008	541,469	326,300	867,769	301,855	279,580 [c]	581,435
2009	745,083	438,481	1,183,564	141,371	[d]	141,371
20-Year Avg.	492,196	314,864	807,059	158,898	128,648	287,546
1990-99 Avg.	336,130	255,706	591,836	155,690	127,011	282,701
2000-09 Avg.	648,261	374,021	1,022,282	162,106	130,695	292,801
2010	509,628	273,914	783,542	123,703	[d]	123,703

Note: Blank cells represent no data.

[a] Escapement based on sonar estimates from the Portage Creek site.

[b] Escapement estimates based on aerial surveys. Estimates for 1987–1988 rounded to the nearest thousand fish.

[c] No escapement counts were made for the Togiak River.

[d] Partial count.

Appendix A22.–Coho salmon harvest by fishery, escapement and total runs for the Togiak River, in numbers of fish, Bristol Bay, 1990–2010.

	Harvests by Fishery				Spawning	Total
Year	Commercial	Subsistence [a]	Sport	Total	Escapement [b]	Run
1990	2,296	1,111	367	3,774	21,390	25,164
1991	4,262	1,238	87	5,587	25,260	30,847
1992	3,918	1,231	251	5,400	80,100	85,500
1993	12,613	743	330	13,686		[c]
1994	88,522	910	531	89,963		[c]
1995	8,910	703	408	10,021		[c]
1996	58,369	199	1,382	59,950	64,980	124,930
1997	2,976	260	780	4,016	20,625	24,641
1998	52,783	310	1,020	54,113	25,335	79,448
1999	2,653	217	1,109	3,979	3,855 [d]	[c]
2000	2,758	342	840	3,940		[c]
2001	3,218	388	904	4,510		[c]
2002	754	241	1,475	2,470		[c]
2003	961	883	2,086	3,930	6,900 [d]	[c]
2004	15,463	204	2,321	17,988		[c]
2005	8	295	1,959	2,262		[c]
2006	453	408	2,214	3,075		[c]
2007	152	110	1,970	2,232		[c]
2008	1,159	541	3,420	5,120		[c]
2009	9,202	272	1,556	11,030		[c]
20-Year Avg.	13,572	530	1,251	15,352	31,056	46,408
1990-99 Avg.	23,730	692	627	25,049	34,506	59,555
2000-09 Avg.	3,413	368	1,875	5,656	6,900	12,556
2010	23,730	325 [e]	2,224 [e]	26,279		[c]

Note: Blank cells represent no data.

[a] Subsistence harvest estimated by expanding permit returns.

[b] Expanded estimates from aerial surveys.

[c] Results of a partial survey.

[d] Data not available at the time of publication. Five year average used.

[e] Data not available at the time of publication. Five year average used.

Appendix A23.–Average round weight (lbs.) of the commercial salmon catch by species, Bristol Bay, 1990–2010.

Year	Sockeye	Chinook	Chum	Pink	Coho
1990	5.7	16.9	6.3	3.8	7.5
1991	5.7	15.9	6.4		7.3
1992	5.7	16.8	6.4	3.7	7
1993	6	17.4	6.5		6.8
1994	5.5	18	6.5	3.7	8.2
1995	5.5	19.8	6.3	3.6	6.7
1996	6.3	18	7.3	3.5	6.8
1997	6	16.4	7.3	3.4	6.3
1998	5.7	17.7	6.4	3.3	8.4
1999	5.3	14.3	6.7	3.2	6.4
2000	6.1	15.7	6.9	3.7	7.6
2001	6.7	17.4	8.2	2.8	7.1
2002	6.1	18.2	7.1	3.8	6.8
2003	6.3	16	6.5	4	6.9
2004	5.8	15.4	6.6	4.1	6.8
2005	6.3	16.6	7.1	3.5	6.3
2006	5.7	17	7.7	3.7	6.4
2007	5.8	13.5	6.1	3.5	6.4
2008	5.8	15.5	6.5	3.6	6.5
2009	5.9	15.2	6.3	3.3	6.5
20-Year Avg.	5.9	16.6	6.8	3.6	6.9
1990-99 Avg.	5.7	17.1	6.6	3.5	7.1
2000-09 Avg.	6.1	16.1	6.9	3.6	6.7
2010	5.5	14.7	6.4	3.2	8.9

Note: Blank cells represent no data.

Appendix A24.–Average price paid in dollars per pound for salmon, by species, Bristol Bay, 1990–2010.

Year	Sockeye	Chinook	Chum	Pink	Coho
1990 [a]	1.09	0.91	0.27	0.29	0.73
1991	0.75	0.67	0.22	0.15	0.6
1992	1.12	0.93	0.26	0.14	0.59
1993	0.67	0.76	0.22	0.25	0.52
1994	0.97	0.64	0.22	0.12	0.71
1995	0.77	0.66	0.2	0.14	0.43
1996	0.81	0.51	0.11	0.05	0.31
1997	0.9	0.52	0.1	0.07	0.5
1998	1.22	0.62	0.1	0.08	0.48
1999	0.84	0.53	0.1	0.09	0.72
2000	0.67	0.46	0.09	0.08	0.41
2001	0.42	0.31	0.11	0.09	0.33
2002	0.49	0.33	0.09	0.06	0.32
2003	0.51	0.32	0.08	0.07	0.27
2004	0.51	0.37	0.09	0.09	0.31
2005	0.62	0.58	0.11	0.02	0.29
2006	0.55	0.74	0.11	0.03	0.35
2007	0.64	0.67	0.13	0.03	0.41
2008	0.69	0.78	0.15	0.16	0.39
2009	0.70	0.75	0.15	0.20	0.40
20-Year Avg.	0.75	0.60	0.15	0.11	0.45
1990-99 Avg.	0.91	0.68	0.18	0.14	0.56
2000-09 Avg.	0.58	0.53	0.11	0.08	0.35
2010	0.95	0.98	0.27	0.37	0.53

Note: Blank cells represent no data.

[a] Price paid in Nushagak District. Bristol Bay average unavailable.

Appendix A25.–Estimated exvessel value of the commercial salmon catch by species, in thousands of dollars, Bristol Bay, 1990–2010.

Year	Sockeye	Chinook	Chum	Pink [a]	Coho	Total
1990	210,057	524	1,740	553	564	213,439
1991	112,114	316	1,758		492	114,680
1992	204,604	1,073	1,526	251	792	208,245
1993	163,089	1,133	1,194		263	165,679
1994	188,918	1,616	1,201	41	1,019	192,796
1995	187,863	1,295	1,262		142	190,562
1996	150,968	754	606	7	336	152,671
1997	65,743	652	198		183	66,777
1998	70,529	1,414	234	7	503	72,688
1999	114,504	207	407		97	115,215
2000	83,940	165	232	16	403	84,756
2001	40,395	132	679		40	41,246
2002	31,899	272	290	0	19	32,479
2003	47,993	249	482		77	48,801
2004	77,897	647	398	19	158	79,119
2005	96,650	738	962		154	98,503
2006	90,233	1,330	1,350	19	178	93,110
2007	119,196	542	1,583		120	121,441
2008	109,904	298	1,271	158	288	111,919
2009	127,615	400	1,291		162	129,468
20 Year Avg.	114,706	688	933	107	300	116,680
1990-99 Avg.	146,839	898	1,013	172	439	149,275
2000-09 Avg.	82,572	477	854	42	160	84,084
2010	148,703	449	1,888	1,578	497	153,115

Note: Value paid to fishermen is derived from price per pound multiplied by commercial catch. Blank cells represent no data.

[a] Includes even-years only.

Appendix A26.–South Unimak and Shumigan Island preseason sockeye allocation, actual sockeye and chum salmon harvest in thousands of fish, Alaska Peninsula, 1990–2010

	South Unimak			Shumigan Island			Total		
	Sockeye			Sockeye			Sockeye		
Year	Actual	Quota [a]	Chum	Actual	Quota [a]	Chum	Actual	Quota [a]	Chum
1990	1,091	1,087	455	256	240	64	1,347	1,327	519
1991	1,216	1,573	669	333	347	102	1,549	1,920	771
1992	2,047	1,959	324	410	432	102	2,457	2,391	426
1993	2,365	2,375	382	607	524	150	2,972	2,899	532
1994	1,001	2,938	374	460	648	208	1,461	3,586	582
1995	1,451	2,987	342	653	659	195	2,104	3,646	537
1996	572	2,564	129	446	566	228	1,018	3,130	357
1997	1,179	1,840	196	449	406	126	1,628	2,246	322
1998	975	1,529	195	314	336	50	1,289	1,865	245
1999	1,106	1,024	187	269	226	58	1,375	1,250	245
2000	892	1,650	169	359	363	70	1,251	2,013	239
2001	271		185	130		149	401		334
2002	356		201	235		178	591		379
2003	336		121	117		161	453		282
2004	532		131	816		357	1,348		488
2005	437		144	567		282	1,004		426
2006	491		96	441		204	932		300
2007	738		153	852		144	1,023		297
2008	1,064		285	650		126	1,714		411
2009	594		201	573		496	1,167		697
20-yr Avg.	936	1,957	247	447	432	173	1,354	2,388	419
1990-99 Avg.	1,300	1,988	325	420	438	128	1,720	2,426	454
2000-09 Avg.	571	1,650	169	474	363	217	988	2,013	385
2010	488		100	331		171	819		271

Note: South Unimak includes statistical area 284 in June and July, while Shumagin Islands includes statistical area 282 in June only.

[a] The sockeye salmon quota management system was initiated in 1974, and is based on 8.3% of the Bristol Bay projected inshore harvest and traditional harvest patterns. This quota system was removed in 2001.

Appendix A27.–Subsistence salmon harvest by district and species, Bristol Bay, 1990–2010.

Year [a]	Permits Issued	Sockeye	Chinook	Chum	Pink		Coho	Total
NAKNEK-KVICHAK DISTRICT								
1990	466	92,326	985	861	1,032		726	95,930
1991	518	97,101	1,152	1,105	191		1,056	100,605
1992	571	94,304	1,444	2,721	1,601		1,152	101,222
1993	560	101,555	2,080	2,476	762		2,025	108,898
1994	555	87,662	1,843	503	460		1,807	92,275
1995	533	75,644	1,431	1,159	383		1,791	80,407
1996	540	81,305	1,574	816	794		1,482	85,971
1997	533	85,248	2,764	478	422		1,457	90,368
1998	567	83,095	2,433	784	1,063		1,592	88,967
1999	528	85,315	1,567	725	210		856	88,674
2000	562	61,817	894	560	845		937	65,053
2001	506	57,250	869	667	383		740	59,909
2002	471	52,805	837	909	1,137		943	56,632
2003	489	61,443	1,221	259	198		812	63,934
2004	481	71,110	1,075	469	1,080		566	74,300
2005	462	69,211	1,047	546	275		1,224	72,302
2006	468	69,097	881	341	757		720	71,796
2007	480	69,837	672	405	262		1,104	72,280
2008	481	69,823	719	404	801		1,437	73,184
2009	461	67,970	392	167	36		669	69,235
20-Year Avg.	512	76,696	1,294	818	957	[c]	1,155	80,597
1990-1999 Avg.	537	88,356	1,727	1,163	692	[c]	1,394	93,332
2000-2009 Avg.	486	65,036	861	473	577	[c]	915	67,863
2010 [b]	470	69,188	742	373	426		1,031	71,759
EGEGIK DISTRICT								
1990	61	1,105	53	85	39		331	1,613
1991	70	4,549	82	141	32		430	5,234
1992	80	3,322	124	270	51		729	4,496
1993	69	3,633	128	148	15		905	4,829
1994	59	3,208	166	84	153		857	4,468
1995	60	2,818	86	192	100		690	3,886
1996	44	2,321	99	89	85		579	3,173
1997	34	2,438	101	21	5		740	3,304
1998	36	1,795	44	33	52		389	2,314
1999	42	2,434	106	35	2		806	3,384
2000	31	842	16	11	0		262	1,131
2001	57	2,493	111	105	16		928	3,653
2002	53	1,892	65	34	12		356	2,359
2003	62	3,240	84	32	10		297	3,663
2004	46	2,618	169	410	91		1,423	4,711
2005	45	2,267	81	231	2		526	3,106
2006	41	1,641	94	34	7		641	2,418
2007	28	980	165	72	26		334	1,577
2008	37	1,502	91	35	4		295	1,928
2009	26	778	31	6	5		133	953
20-Year Avg.	49	2,294	95	103	49	[c]	583	3,110
1990-1999 Avg.	56	2,762	99	110	76	[c]	646	3,670
2000-2009 Avg.	43	1,825	91	97	23	[c]	520	2,550
2010 [b]	35	1,434	92	76	9		386	1,996

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Year [a]	Permits Issued		Sockeye	Chinook	Chum	Pink	Coho	Total
UGASHIK DISTRICT								
1990		37	1,578	51	143	120	280	2,172
1991		38	1,403	121	168	42	614	2,348
1992		37	2,348	106	79	8	397	2,938
1993		39	1,766	86	107	24	495	2,478
1994		31	1,587	126	42	38	579	2,372
1995		20	1,513	56	18	6	290	1,883
1996		26	1,247	50	21	7	298	1,623
1997		28	2,785	169	39	23	311	3,327
1998		27	1,241	59	75	82	485	1,942
1999		25	1,365	35	5	0	271	1,675
2000		31	1,927	51	34	1	467	2,481
2001		24	1,197	61	8	2	357	1,624
2002		23	1,294	51	14	2	460	1,821
2003		23	1,113	31	30	0	392	1,567
2004		21	804	64	9	4	234	1,116
2005		22	818	27	18	2	249	1,114
2006		25	962	41	6	16	339	1,364
2007		17	1,056	43	88	79	281	1,546
2008		14	1,660	47	17	9	222	1,955
2009		15	1,061	33	4	41	131	1,270
20-Year Avg.		26	1,436	65	46	29 [c]	358	1,931
1990-1999 Avg.		31	1,683	86	70	51 [c]	402	2,276
2000-2009 Avg.		22	1,189	45	23	6 [c]	313	1,586
2010 [b]		19	1,111	38	27	29	244	1,450
NUSHAGAK DISTRICT								
1990		441	33,003	12,407	7,808	3,183	5,919	62,320
1991		528	33,161	13,627	4,688	292	10,784	62,552
1992		476	30,640	13,588	7,076	3,519	7,103	61,926
1993		500	27,114	17,709	3,257	240	5,038	53,358
1994		523	26,501	15,490	5,055	2,042	5,338	54,426
1995		484	22,793	13,701	2,786	188	3,905	43,373
1996		481	22,935	15,941	4,704	1,573	5,217	50,370
1997		538	25,080	15,318	2,056	218	3,433	46,106
1998		562	25,217	12,258	2,487	1,076	5,316	46,355
1999		548	29,387	10,057	2,409	124	3,993	45,969
2000		541	24,451	9,470	3,463	1,662	5,983	45,029
2001		554	26,939	11,760	3,011	378	5,993	48,080
2002		520	22,777	11,281	5,096	1,179	4,565	44,897
2003		527	25,491	18,686	5,064	403	5,432	55,076
2004		511	17,491	15,610	3,869	1,944	4,240	43,154
2005		502	23,916	12,529	5,006	793	5,596	47,841
2006		461	20,773	9,971	4,448	1,591	3,590	40,373
2007		496	25,127	13,330	3,006	430	3,050	44,944
2008		571	26,828	12,960	4,552	1,923	5,133	51,395
2009		530	26,922	12,737	4,510	355	6,777	51,300
20-Year Avg.		515	25,827	13,422	4,218	1,969 [c]	5,320	49,942
1990-1999 Avg.		508	27,583	14,010	4,233	2,279 [c]	5,605	52,676
2000-2009 Avg.		521	24,072	12,833	4,203	1,660 [c]	5,036	47,209
2010 [b]		512	24,713	12,305	4,304	1,018	4,829	47,171

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TOGIAK DISTRICT							
Year [a]	Permits Issued	Sockeye	Chinook	Chum	Pink	Coho	Total
1990	37	3,689	480	786	60	1,111	6,126
1991	43	3,517	470	553	27	1,238	5,805
1992	40	3,716	1,361	626	135	1,231	7,069
1993	38	2,139	784	571	8	743	4,245
1994	25	1,777	904	398	77	910	4,066
1995	22	1,318	448	425	0	703	2,894
1996	19	662	471	285	59	199	1,676
1997	31	1,440	667	380	0	260	2,747
1998	42	2,211	782	412	76	310	3,791
1999	76	3,780	1,244	479	84	217	5,804
2000	54	3,013	1,116	569	90	342	5,130
2001	92	2,576	1,612	367	61	388	6,590
2002	36	2,890	703	605	10	241	3,878
2003	92	2,357	1,208	483	451	883	7,428
2004	46	2,221	1,094	383	108	204	3,584
2005	45	2,299	1,528	301	26	295	4,448
2006	61	2,728	1,630	492	355	408	5,613
2007	48	2,548	1,234	420	19	110	4,332
2008	91	3,770	1,337	701	114	541	6,463
2009	40	2,220	827	365	5	272	3,689
20-Year Avg.	49	2,544	995	480	108 [c]	530	4,769
1990-1999 Avg.	37	2,425	761	492	81 [c]	692	4,422
2000-2009 Avg.	61	2,662	1,229	469	135 [c]	368	5,116
2010 [b]	57	2,713	1,311	456	104	325	4,909
TOTAL BRISTOL BAY AREA							
1990	1,042	131,701	13,976	9,683	4,434	8,367	168,161
1991	1,197	139,731	15,452	6,655	584	14,122	176,544
1992	1,204	134,330	16,623	10,772	5,314	10,612	177,651
1993	1,206	136,207	20,787	6,559	1,049	9,206	173,808
1994	1,193	120,735	18,529	6,082	2,770	9,491	157,607
1995	1,119	104,086	15,722	4,580	677	7,378	132,443
1996	1,110	108,470	18,136	5,915	2,518	7,775	142,813
1997	1,166	116,991	19,159	2,974	668	6,201	145,992
1998	1,234	113,560	15,576	3,792	2,349	8,093	143,368
1999	1,219	122,281	13,009	3,653	420	6,143	145,506
2000	1,219	92,050	11,547	4,637	2,599	7,991	118,824
2001	1,226	92,041	14,412	4,158	839	8,406	119,856
2002	1,093	81,088	12,936	6,658	2,341	6,565	109,587
2003	1,182	95,690	21,231	5,868	1,062	7,816	131,667
2004	1,100	93,819	18,012	5,141	3,225	6,667	126,865
2005	1,076	98,511	15,212	6,102	1,098	7,889	128,811
2006	1,050	95,201	12,617	5,321	2,726	5,697	121,564
2007	1,062	107,778	15,484	3,972	796	4,870	132,901
2008	1,178	103,583	15,153	5,710	2,851	7,627	134,924
2009	1,063	98,951	14,020	5,052	442	7,982	126,447
20-Year Avg.	1,147	109,340	15,880	5,664	3,113 [c]	7,945	140,767
1990-1999 Avg.	1,169	122,809	16,697	6,067	3,477 [c]	8,739	156,389
2000-2009 Avg.	1,125	95,871	15,062	5,262	2,748 [c]	7,151	125,145
2010 [b]	1,086	100,805	14,497	5,231	1,583	6,813	128,929

-continued-

[a] Permit and harvest estimates prior to 1989 are based on the community where the permit was issued; estimates from 1989 to the present are based on the area fished, as first recorded on the permit.

[b] A 5 year average was used, as data was not available at the time of publishing.

[c] Includes even years only.

Appendix A28.–Subsistence harvest of sockeye salmon by community, in numbers of fish, Kvichak River drainage, Bristol Bay, 1990–2010.

Year [a,b]	Levelock	Igiugig	Pedro Bay	Kokhanok	Iliamna-Newhalen [c]	Nondalton	Port Alsworth	Other [d]	Total
1990	4,700	2,200	6,600	12,400	18,800	27,300	3,200	1,400	76,600
1991	1,029	1,712	9,739	17,184	29,094	4,163	2,755	1,110	66,786
1992	4,374	1,056	6,932	11,477	29,633	13,163	2,954	2,559	72,148
1993	4,699	1,397	6,226	18,810	19,067	17,890	3,254	2,780	74,123
1994	1,467	1,201	8,747	15,771	15,553	15,246	3,074	3,284	64,343
1995	3,756	497	5,359	14,412	20,134	4,188	2,892	3,441	54,679
1996	1,120	2,309	5,219	14,011	14,787	11,856	3,263	2,307	54,872
1997	1,062	2,067	5,501	8,722	19,513	17,194	2,348	3,101	59,508
1998	2,454	1,659	3,511	10,418	16,165	13,136	2,678	3,635	53,656
1999	1,276	1,608	5,005	10,725	14,129	17,864	4,282	2,834	57,723
2000	1,467	1,981	1,815	7,175	6,679	11,953	3,200	2,720	36,990
2001	908	779	2,118	9,447	8,132	7,566	1,958	1,901	32,808
2002	625	2,138	2,687	9,847	9,417	5,508	1,201	1,578	33,001
2003	737	1,081	2,135	9,771	13,824	8,016	1,370	1,591	38,495
2004	1,000	1,026	4,803	11,869	21,652	8,789	2,455	1,631	53,225
2005	914	1,017	4,162	16,801	12,010	8,824	2,457	2,078	48,263
2006	0	1,252	4,319	19,028	11,487	8,885	2,418	2,461	49,850
2007	102	1,803	4,537	15,105	19,972	6,897	3,211	2,525	54,152
2008	30	1,558	4,884	14,755	13,568	8,916	3,307	2,542	49,562
2009	759	1,457	7,802	16,074	10,569	5,846	3,246	1,019	46,772
20-Year Avg.	1,624	1,490	5,105	13,190	16,209	11,160	2,776	2,325	53,878
1990-99 Avg.	2,594	1,571	6,284	13,393	19,688	14,200	3,070	2,645	63,444
2000-09 Avg.	654	1,409	3,926	12,987	12,731	8,120	2,482	2,005	44,312
2010 [e]	361	1,417	5,141	16,353	13,521	7,874	2,928	2,125	49,720

Note: Blank cells represent no data.

[a] Harvests are extrapolated for all permits issued, based on those returned. Harvest estimates from 1991 are rounded to the nearest hundred fish.

[b] Harvest estimates prior to 1990 are based on the community where the permit was issued; estimates from 1990 to the present are based on community of residence and include fish caught only in the Kvichak District.

[c] Includes Chekok.

[d] Subsistence harvests by non-Kvichak River watershed residents.

[e] A 5 year average was used, as data was not available at the time of publishing.

Appendix A29.–Subsistence salmon harvest by community, Nushagak District, Bristol Bay, 1989–2009.

Year [a,b]	Dillingham[c,d]	Manokotak	Aleknagik	Ekwok	New Stuyahok	Koliganek	Other [e]	Total
1990	28,860	6,600	2,300	4,900	9,900	8,000	700	61,260
1991	34,399	5,873	3,043	4,532	8,326	5,438	2,163	63,774
1992	31,702	4,317	2,184	5,971	11,325	3,708	2,635	61,842
1993	25,315	3,048	2,593	2,936	12,169	4,180	2,538	52,779
1994	30,145	3,491	2,289	4,343	8,056	4,513	2,322	55,159
1995	24,998	2,453	1,468	2,046	6,911	2,983	2,406	43,265
1996	27,161	3,883	1,733	2,866	8,892	3,319	2,113	49,967
1997	23,255	3,988	1,989	1,797	6,427	4,179	4,598	46,233
1998	24,072	4,069	1,112	3,555	5,419	3,166	4,958	46,351
1999	26,502	3,413	1,532	1,805	4,556	2,772	5,389	45,969
2000	27,931	3,173	1,111	3,946	3,715	2,792	2,362	45,029
2001	26,435	3,700	2,129	2,218	7,294	2,209	4,096	48,080
2002	25,004	3,254	1,517	2,735	6,043	3,098	3,247	44,897
2003	26,955	4,214	2,044	2,291	10,817	5,721	3,034	55,076
2004	23,308	2,052	2,206	1,891	6,714	3,619	3,364	43,154
2005	21,898	1,576	1,795	1,388	9,673	8,422	3,088	47,841
2006	22,184	1,655	2,048	1,499	6,160	3,886	2,941	40,373
2007	25,237	2,442	1,382	1,267	8,284	3,054	3,278	44,944
2008	27,446	5,429	3,309	1,902	5,690	4,423	3,196	51,395
2009	28,934	2,182	2,646	2,345	6,855	3,700	4,638	51,300
20-Year Avg.	26,587	3,541	2,022	2,812	7,661	4,159	3,153	49,934
1990-99 Avg.	27,641	4,352	2,071	3,765	8,713	4,329	2,715	53,843
2000-09 Avg.	25,533	2,968	2,019	2,148	7,125	4,092	3,324	47,209
2010 [f]	25,140	2,657	2,236	1,680	7,332	4,697	3,428	47,171

Note: Blank cells represent no data.

[a] Harvests are extrapolated for all permits issued, based on those returned. Harvest estimates prior to 1991 are rounded to the nearest hundred fish.

[b] Harvest estimates prior to 1990 are based on the community where the permit was issued; estimates from 1990 to the present are based on community of residence and include fish caught only in the Nushagak District.

[c] Includes the village of Portage Creek and Clarks Point.

[d] Includes permits issued in Clarks Point and Ekuk.

[e] Subsistence harvests by non-watershed residents.

[f] A 5 year average was used, as data was not available at the time of publishing.

APPENDIX B. HERRING

Appendix B1.–Sac roe herring industry participation, fishing effort and harvest, Togiak District, 1990–2010.

			Gillnet					Purse Seine				
Year	Number of Buyers	Daily Processing Capacity [a]	Fishery Dates	Effort [b]	Duration (hours)	Harvest [c]	Roe %	Effort [b]	Duration (hours)	Harvest [c]	Roe % [d]	Total Harvest [c]
1990	16	3,100	5/8-5/20	277	66.0	3,072	9.0	221	3.0	9,158	9.7	12,230
1991	16	3,350	5/10-5/17	170	14.0	3,182	8.5	200	3.0	11,788	10.0	14,970
1992	18	3,700	5/20-5/27	274	25.5	5,030	8.8	301	0.3	20,778	9.2	25,808
1993	12	2,500	4/27-5/9	75	144.5	3,564	10.1	140	33.8	14,392	9.6	17,956
1994	16	3,300	5/11-5/20	146	76.0	7,462	12.0	240	4.6	22,853	9.4	30,315
1995	22	4,350	5/7-5/15	250	33.5	6,995	12.0	254	12.2	19,737	10.1	26,732
1996	19	4,850	5/3-5/8	461	18.0	6,863	11.1	268	2.4	18,008	9.0	24,871
1997	18	4,200	5/2-5/6	336	24.0	5,164	11.8	231	6.4	18,299	9.4	23,463
1998	15	2,475	4/29-5/10	152	46.0	5,952	12.5	123	16.5	16,424	9.6	22,376
1999	12	2,400	5/18-5/26	171	28.0	4,858	11.5	96	4.7	14,799	9.2	19,657
2000	12	2,100	5/6-5/14	227	67.0	5,464	10.6	90	15.8	14,857	10.1	20,321
2001	11	2,255	5/6-5/13	96	84.0	6,481	10.6	64	26.0	15,630	9.2	22,111
2002	8	1,920	5/3-5/13	82	102.0	5,216	10.9	37	57.5	11,793	9.3	17,009
2003	7	1,920	4/25-5/7	75	142.0	6,505	10.9	35	110.2	14,778	8.9	21,283
2004	6	2,150	4/29-5/9	54	162.0	4,980	10.4	31	78.0	13,785	9.5	18,765
2005	8	2,330	4/30-5/8	56	149.0	5,841	11.2	33	83.0	14,287	9.6	19,711
2006	7	2,060	5/12-5/21	49	143.9	7,132	10.8	28	113.0	16,321	9.2	23,453
2007	5	1,420	5/10-5/25	25	366.0	4,012	11.2	21	244.0	12,800	10.0	16,812
2008	7	1,950	5/16-5/31	27	312.0	4,832	11.4	28	292.0	15,691	8.4	20,523
2009	6	2,015	5/16-5/31	32	314.0	4,140	10.2	21	266.0	12,967	10.3	17,107
1990-2009 Avg.	12	2,717		152	115.9	5,337	10.8	123	68.6	15,457	9.5	20,774
2000-2009 Avg.	8	2,012		72	184.2	5,460	10.8	39	128.5	14,291	9.5	19,709
2010	6	2,690	5/11-5/27	35	338.0	7,540	10.1	26	266.0	18,816	9.7	26,355

Note: Blank cells represent no data.

[a] Number of tons per day based on companies registered.

[b] Peak aerial survey count.

[c] Harvest total includes dead loss and test fish harvest.

[d] Values in 2002 and 2003 are lower than inseason assessments due to more stringent postseason market scrutiny compared with previous years.

Appendix B2.–Exploitation of Togiak herring stock, 1990–2010.

Year	Management Biomass Estimate[a] (short tons)	Togiak S-O-K Herring Equivalent Harvest	Dutch Harbor Food/Bait Harvest	Togiak Sac Roe Harvest				Total Harvest	Inseason Exploitation Rate
				Gillnet[b]	Purse Seine[c]	Waste	Total [d]		
1990	71,879	1,617	820	3,072	9,158		12,230	14,667	20.4%
1991	55,000	1,310	1,325	3,182	11,788		14,970	17,605	32.0%
1992	129,256	1,482	1,949	5,030	20,778		25,808	29,239	22.6%
1993	164,130	1,481	2,790	3,564	14,392		17,956	22,227	13.5%
1994	148,716	1,134	3,349	7,462	22,853		30,315	34,798	23.4%
1995	149,093	996	1,748	6,995	19,737		26,732	29,476	19.8%
1996	135,585	1,899	2,239	6,863	18,008		24,871	29,009	21.4%
1997	125,000		1,950	5,164	18,299	350	23,813	25,763	20.6%
1998	121,000		1,994	5,952	16,424	400	22,776	24,770	20.5%
1999	124,946	1,605	2,398	4,858	14,799	221	19,878	23,881	19.1%
2000	130,904		2,014	5,464	14,857	100	20,421	22,435	17.1%
2001	119,818		1,439	6,481	15,630	219	22,330	23,769	19.8%
2002	120,196	260	2,846	5,216	11,793	40	17,049	20,155	16.8%
2003	126,213	[e]	1,487	6,505	14,778	380	21,663	23,150	18.3%
2004	143,124		1,258	4,980	13,785	103	18,868	20,126	14.1%
2005	108,585		1,154	5,841	14,287	784	20,912	22,066	20.3%
2006	129,976		953	7,132	16,321	500	23,953	24,906	19.2%
2007	134,566		1,214	4,012	12,800	320	17,132	18,346	13.6%
2008	136,495		1,536	4,832	15,691	0	20,523	22,059	16.2%
2009	121,800		1,941	4,140	12,967	0	17,107	19,048	15.6%
1990-2009 Avg.	124,814	1,309	1,820	5,337	15,457	263	20,965	23,375	19.2%
2000-2009 Avg.	127,168	260	1,584	5,460	14,291	245	19,996	21,606	17.1%
2010	146,775		1,938	7,540	18,816	0	26,355	28,293	19.3%

Note: Blank cells represent no data.

[a] Preseason forecast unless peak biomass estimate inseason exceeded preseason forecast.

[b] Includes bait harvest.

[c] Includes test fish harvest.

[d] Estimated waste.

[e] Data confidential.

Appendix B3.–Age composition, by weight, of total inshore herring run, Togiak District, 1990–2010.

	Age Composition (%)[a]							Total[b]
Year	3[c]	4	5	6	7	8	9 +	Run (tons)
1990	[d]	[d]	[d]	6.0	11.0	3.0	80.0	88,105
1991		7.0	1.0	1.0	16.0	18.0	57.0	83,229
1992	[d]	10.0	20.0	1.0	1.0	15.0	53.0	156,957
1993		[d]	6.0	23.0	1.0	1.0	67.0	193,847
1994		[d]	2.0	12.0	28.0	3.0	55.0	185,412
1995		1.0	4.0	7.0	24.0	30.0	35.0	[e]
1996		[d]	3.0	5.0	7.0	21.0	64.0	[e]
1997	[d]	7.0	5.0	12.0	11.0	10.0	55.0	144,887
1998		[d]	4.0	5.0	10.0	11.0	70.0	[e]
1999	[d]	[d]	1.0	13.0	9.0	12.0	65.0	157,028
2000	[d]	[d]	1.0	2.0	17.0	16.0	63.0	[e]
2001		5.0	21.0	5.0	4.0	27.0	39.0	115,155
2002		1.0	25.0	28.0	4.0	5.0	36.0	[e]
2003		[d]	3.0	37.0	25.0	4.0	31.0	[e]
2004		[d]	[d]	3.8	43.7	24.6	27.5	[e]
2005		[d]	[d]	0.8	11.0	41.4	46.4	156,727
2006	[d]	1.8	5.4	2.8	5.4	25.9	58.7	176,288
2007		0.7	7.3	15.5	5.5	9.4	61.7	134,221
2008	[d]	6.2	9.0	14.6	15.5	8.1	46.5	136,495
2009	[d]	9.4	14.7	14.5	14.9	12.2	34.0	142,133
2010		1.4	16.1	18.1	13.2	13.2	38.3	135,214

Note: Blank cells represent no data.

[a] Age composition in 1988–1992 is weighted by aerial survey data and weight at age.

[b] Includes commercial catch, escapement, and documented waste.

[c] Includes age 1, 2 and 3 herring.

[d] Contribution of age class is less than 0.5%.

[e] Age contribution of the commercial purse seine harvest (by weight) was used to represent the total run for the 1995, 1996, 1998, 2000, 2002, 2003 and 2004 fishing seasons. Aerial surveys to determine abundance were hampered by poor weather conditions preventing estimation of total biomass estimate.

Appendix B4.–Herring spawn-on-kelp industry participation, fishing effort, area, and harvest, Togiak District, 1990–2010.

Year	Companies	Fishery Dates	Hours	Effort [a]	Area	Total Harvest in pounds	Herring Equivalent (in tons)	Openings	Average Roe %
1990	7	11 May	3	481	K 8	413,844	1,617	1	9.5
1991	7	13 May	2.5	532	K 4	348,357	1,310	1	9.7
1992	5	23 May	3.3	386	K 9	363,600	1,482	2	9.1
1993	2	5/1–5/2	7	173	K 8	383,000	1,481	2	9.7
1994	3	5/13–5/14	7.5	204	K 5	308,400	1,134	2	10
1995	5	5/11–5/14	14.5	188	K 2, K 3	281,600	996	3	10.6
1996	3	5/9–5/10	12	200	K 8, K 9	455,800	1,899	2	9.6
1997		no fishery							
1998		no fishery							
1999	1	23 May	8	130	K 9	419,563	1,605	2	9.8
2000		no fishery							
2001		no fishery							
2002	1	14 May	2	50	K 9	67,793	260	1	9.8
2003	1	5/3–5/4	3	35	K 3	[b]	[b]	1	[b]
2004		no fishery							
2005		no fishery							
2006		no fishery							
2007		no fishery							
2008		no fishery							
2009		no fishery							
1990-2009 Avg.	3.5		6.3	238		337,995	1,309	1.7	9.8
2000-2009 Avg.	1		2.5	43		67,793	260	1	9.8
2010		no fishery							

Note: Blank cells represent no data.

[a] 1984–1989 and 1992–1996, number of permits fished based on fish tickets. 1990 and 1991 based on peak aerial survey count.

[b] Less than 4 permits, records are confidential.

Appendix B5.–Aerial survey estimates of herring biomass and spawn deposition, Togiak District, 1990–2010.

Year	Preseason Forecast [a]	Biomass Estimate		Spawn Estimates	
				Observations	Miles
1990	56,000	88,105		94	66
1991	55,000	83,229		90	70
1992	60,214	156,957		160	97
1993	148,786	193,847		76	53
1994	142,497	185,412		80	72
1995	149,093	149,093	[b]	70	59
1996	135,585	135,585	[b]	99	73
1997	125,000	144,887		79	59
1998	121,000	121,000	[b]	42	33
1999	90,000	157,028		33	56
2000	130,904	130,904	[b]	71	46
2001	119,818	115,155	[b]	100	57
2002	120,196	120,196	[b]	79	32
2003	126,213	126,213	[b]	182	95
2004	143,124	143,124	[b]	47	36
2005	96,029	156,727		106	28
2006	129,976	176,288		66	18
2007	134,566	134,221		43	19
2008	134,516	136,495		38	49
2009	121,800	142,133		36	15
1989-08 Avg.	117,016	139,830		80	52
1999-08 Avg.	125,714	138,146		77	40
2010	146,775	135,214		9	8

[a] 1993–2008 forecasts based on Age Structured Analysis. Previous years based on age composition, abundance, average growth, and mortality rates.

[b] Peak biomass estimate could not be determined, therefore, preseason forecast was used.

Appendix B6.–Exvessel value of the commercial herring and spawn-on-kelp harvest, in thousands of dollars, Togiak District, 1990–2010.

	Herring			
Year	Sac Roe	Food/Bait	Spawn-on-Kelp	Total
1990	6,494	9	360	6,863
1991	6,173	21	383	6,577
1992	8,818	26	254	9,098
1993	5,218	3	268	5,489
1994	9,090	0	212	9,302
1995	16,713	0	362	17,075
1996	14,395	5	510	14,910
1997	4,306	0	[a]	4,306
1998	3,986	0	[a]	3,986
1999	6,211	0	315	6,526
2000	4,000	0	[a]	4,000
2001	3,090	0	[a]	3,090
2002	1,880	0	[b]	1,900
2003	2,797	0	[b]	2,801
2004	2,541	0	[a]	2,541
2005	2,978	0	[a]	2,978
2006	2,618	0	[a]	2,618
2007	1,869	0	[a]	1,869
2008	2,600	0	[a]	2,600
2009	2,500	0	[a]	2,500
1990-09 Avg.	5,414	3	269	5,686
2000-09 Avg.	2,687	0	12	2,699
2010	2,056	0	[a]	2,056

Note: Exvessel value (value paid to the fishermen) is derived by multiplying price/ton by the commercial harvest. These estimates do not include any postseason adjustments to fishermen from processors and should therefore be treated as minimum estimates.

[a] Fishery not conducted.

[b] Less than 4 permits; records are confidential.

Appendix B7.–Guideline and actual harvests of sac roe herring (tons) and spawn-on-kelp (lbs), Togiak District, 1990–2010.

	Gillnet Sac Roe			Purse Seine Sac Roe			Spawn-on-Kelp		
Year	Guideline[a]	Actual	% Difference[b]	Guideline[a]	Actual[c]	% Difference[b]	Guideline[a]	Actual	% Difference[b]
1990	2,993	3,072	3	8,980	9,158	2	350,000	413,844	18
1991	3,143	3,182	1	9,429	11,788	25	350,000	348,357	0
1992	5,662	5,030	-11	16,985	20,778	22	350,000	363,600	4
1993	6,570	3,564	-46	19,709	14,392	-27	350,000	383,000	9
1994	6,277	7,462	19	18,832	22,853	21	350,000	308,400	-12
1995	6,582	6,995	6	19,747	19,737	0	350,000	281,600	-20
1996	5,956	6,863	15	17,868	18,008	1	350,000	455,800	30
1997	5,464	5,164	-5	16,391	18,593	13	350,000	[d]	
1998	5,280	5,952	13	15,840	16,824	6	350,000	[d]	
1999	6,914	4,858	-30	20,741	14,368	-31	350,000	419,563	20
2000	5,738	5,464	-5	17,215	14,957	-13	350,000	[d]	
2001	6,268	6,491	4	14,624	15,879	9	350,000	[d]	
2002	6,288	5,216	-17	14,673	11,833	-19	350,000	[e]	-81
2003	6,624	6,505	-2	15,457	15,158	-2	350,000	[e]	-96
2004	7,568	4,980	-34	17,658	13,888	-21	350,000	[d]	
2005	5,667	5,841	3	13,224	15,071	14	350,000	[d]	
2006	7,059	7,132	1	16,471	16,821	2	350,000	[d]	
2007	7,090	4,012	-43	16,544	13,120	-21	350,000	[d]	
2008	6,864	4,832	-30	16,017	15,602	-3	350,000	[d]	
2009	6,378	4,167	-35	14,882	12,404	-17	350,000	[d]	
1990-009 Avg.	6,019	5,339	-10	16,064	15,562	-2	350,000	305,584	-13
2000-09 Avg.	6,554	5,464	-16	15,677	14,473	-7	350,000	40,839	-88
2010	7,772	7,540	-3	18,134	18,816	4	350,000	[d]	

[a] Harvest guideline derived from inseason biomass estimate when available, or preseason forecast if weather prevents an estimate. Harvest guidelines were adopted in 1988.

[b] Actual minus guideline divided by guideline.

[c] Includes deadloss and test fish harvest.

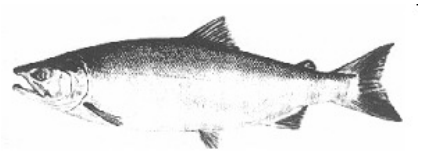
[d] No fishery conducted.

[e] Less than 4 permits; records are confidential.

APPENDIX C. 2010 BRISTOL BAY SALMON OUTLOOK

ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF COMMERCIAL FISHERIES
NEWS RELEASE

Denby S. Lloyd, Commissioner
John Hilsinger, Director



Contact:
Tim Sands, Area Management Biologist
Matt Jones, Assistant Area Management Biologist
Phone: (907) 842-5227
Fax: (907) 842-5937

Issuing Area Office
PO Box 230
Dillingham, Alaska 99576
Date Issued: April 8, 2010
Time: 4:00 p.m.

BRISTOL BAY

2010 OUTLOOK FOR COMMERCIAL
SALMON FISHING

INTRODUCTION

This document is provided as a guide to fishermen, processors, and the public. The intent of this document is to provide the reader with general information regarding the 2010 Bristol Bay salmon season. Included is a short narrative regarding general framework for management of each of the five major districts, the 2010 salmon forecast, and a brief summary of regulation changes adopted by the Alaska Board of Fisheries (BOF) in December 2009.

During the season, Bristol Bay salmon fishing announcements are broadcast on marine VHF Channel 07A and 2509 MHz SSB. Current fishing announcements are aired on local radio stations – KAKN and KDLG. Regular announcement times that may be utilized are 9:00 a.m., 12:00 noon, 3:00 p.m., 6:00 p.m., and 8:00 p.m., unless otherwise stated. Information is also available via telephone; for east side fisheries (Naknek-Kvichak, Egegik, and Ugashik), dial **246-INFO (4636),** for west side fisheries (Nushagak and Togiak) dial **842-5226.** The direct line from the Dillingham boat harbor will be operational in late April and is located on the west end of the harbormaster's house.

At the December 2009 BOF meeting, significant changes were made to regulations regarding blue and green district registration cards. Set gillnet permit holders are only required to fill out and

return green cards if they fish in the Nushagak District. Drift gillnet permit holders that fish in the Ugashik, Egegik, and Naknek-Kvichak Districts will not need to fill out and return a blue card prior to June 25. Set gillnet permit holders in the Nushagak District and drift gillnet permit holders in the Nushagak and Togiak Districts must fill out and return the appropriate blue and green district registration cards prior to commercial fishing. Please read the BOF actions summary below for more information about regulatory changes. The blue and green permit district registration cards will be available at the Anchorage, King Salmon, and Dillingham offices beginning May 1. In addition, PDF files of blue and green district registration cards are posted on the Bristol Bay homepage and can be printed, completed, mailed to the address on the printout, or submitted to Anchorage, King Salmon, or Dillingham office personnel. During the 2010 season, catch, escapement, and announcements will be available at the same site. (http://www.cf.adfg.state.ak.us/region2/finfish/salmon/bbayhome.php)

Fishermen and processors should be aware of the reporting requirements in 5 AAC 06.377 (b) that state

"Each commercial fisherman shall report, on an ADF&G fish ticket, at the time of landing, the number of Chinook and coho salmon taken but not sold."

REGULATORY CHANGES

1. Beginning in 2010, a set gillnet permit holder may own two set gillnet S04T permits and fish up to 100 fathoms of set gillnet gear. The permit holder may not fish more than 4 separate gillnets and no net may be more than 50 fathoms. Buoys and at least one cork every 10 fathoms must be marked with both CFEC permit numbers. The buoys must also be marked with the letter "D" All regulations applying to separation of gear apply even if a permit holder is operating adjacent nets.
2. Only set gillnet permit holders fishing in the Nushagak District are required to register their permit prior to fishing (green card).
3. Drift gillnet permit holders fishing in the Nushagak and Togiak Districts must register their permits and vessels prior to commercial fishing (blue card).
4. Drift permit holders intending to fish Ugashik, Egegik, or Naknek-Kvichak Districts may fish and move freely between these districts (East side of Bristol Bay) prior to June 25. Before commercial fishing on June 25 permit holders must register their vessels and permits for a specific district and from that point on all registration and transfer regulations are the same as in past years.
5. When fishing is restricted to the Naknek River Special Harvest Area, the legal compliment of gear for set gillnet permit holders has been increased to 37.5 fathoms.
6. When fishing is restricted to the Naknek River Special Harvest Area no commercial fishing vessel may have on board more than 150 fathoms of gillnet in Bristol Bay.
7. Drift permit holders planning on utilizing the dual permit option must register as a dual permit vessel with the department prior to fishing, and both parties must notify the department when they cease utilizing the dual permit option.

8. The waiting period for permit holders wishing to transfer from one gear type to another within the same district has been reduced to 24 hours after the department has received notification of the gear transfer.
9. The ending date for transferring into or out of the Togiak District has changed from July 24 to July 27.
10. The department may open the Wood River Special Harvest Area for commercial fishing if the Wood River escapement exceeds 1.1 million sockeye and is projected to exceed 1.4 million sockeye.
11. The boundary for Snake River Section of the Nushagak District was modified.
12. The Kulukak Section regular weekly fishing schedule was changed to close at 9:00 p.m. Wednesday.
13. It is illegal to have fish on board a commercial fishing vessel more than ½ mile inside the Snake River Section of the Nushagak District.
14. Beginning August 1, 2010 the weekly fishing schedule for the Ugashik District will be from 9:00 a.m. Thursday to 9:00 a.m. Monday.
15. Permit holders or their authorized agents may initiate a transfer via the internet 24 hours a day.
16. The Naknek Section of the Naknek-Kvichak District is now described in regulation.

Alaska Wildlife Troopers – Summer 2010 Outlook – Bristol Bay

Enforcement Priorities:

- Continued strong focus on fishing district lines and open period enforcement, particularly in the Naknek/Kvichak and Egegik districts using all available assets to include aircraft, rotorcraft, large and small enforcement vessels and undercover fishing vessels.
- Routine boardings of drift gillnet and processor vessels to verify licensing and permitting regulations are met.
- Increased enforcement of state boating safety laws in cooperation with the US Coast Guard.
- Increase Alaska Wildlife Troopers (AWT) presence in the Ugashik and Togiak Districts.

Regulation changes/concerns:

No significant regulation changes were adopted by the BOF over the past year that would affect AWT enforcement strategies. Those that may be of concern include;

- Definition of the outer SW corner of the Naknek Section. This is of no concern to AWT, as this point was already being used to form the southern Naknek Section line per ADF&G emergency orders.
- Allowing a set net permit holder to hold two permits and fish dual gear will not affect enforcement strategies. If a dual permit holder has one set of gear in violation, they will

receive 1 citation; with a second set of gear in violation they will receive 2 citations as if it were 2 different permit holders.

- Proposal 42 allows more potential opportunity to fish in the Wood River SHA. AWT will continue aggressive enforcement of regulations pertaining to minimum distances between gear, fishery boundary lines and length/depth of nets.
- Tow Lines – Commercial fishermen are advised that if any portion of fishing gear, including the vessel, is outside the open fishing district; Alaska Wildlife Troopers have grounds to take enforcement action. To maintain a constant and fair application of these rules, it will therefore NOT be acceptable for a vessel to be outside of an open fishing district attached via a length of tow line to a net that is inside a district. If a vessel is 100 feet over the line towing a net that is in open waters, that vessel is still commercial fishing in closed waters and is subject to enforcement action. AWT has determined this is the best way to maintain equal and fair fishing opportunity for all vessels fishing near the district boundary lines and prevents a select group of vessels from preventing others from setting out nets along a boundary line. If there are any questions about this issue, fishermen are encouraged to contact AWT offices in King Salmon or Dillingham.

SALMON OUTLOOKS

BAYWIDE

The forecasted Bristol Bay sockeye salmon run for 2010 is approximately 39.8 million fish. Based on the forecast, approximately 30.5 million fish are potentially available for commercial harvest (Table 1). Due to the projected surplus, fishermen should expect significant amounts of fishing time. However, run timing will be the key factor as to when fishing will occur. The department manages fisheries based on inseason information regarding abundance. The inseason management approach uses a suite of tools to provide information on abundance in each district as each run develops and that information is used by the department to determine fishing opportunity.

The commercial salmon season in Bristol Bay opens June 1 by regulation. The eastside districts will be on a weekly schedule that will vary by district, beginning June 1. The schedules are in place to balance fishing opportunity with escapement in the early part of the season (particularly for Chinook salmon). As each run develops and sockeye salmon run characteristics become defined within individual districts, fishing time will be adjusted accordingly. In the Nushagak District, management of the Chinook fishery will dictate fishing time in the early part of the season, followed by directed sockeye salmon management as abundance dictates.

NAKNEK/KVICHAK DISTRICT

An inshore run of approximately 13.0 million sockeye salmon is expected for the Naknek/Kvichak District in 2010. Based on the forecast, the projected harvest in the Naknek/Kvichak District is approximately 8.6 million sockeye salmon; 1.7 million from the Kvichak River, 800,000 from the Alagnak River and 6.0 million from the Naknek River. The 2010 Kvichak River minimum escapement goal will be 2.0 million. If the run is greater than the forecast, the **inseason** point goal will be adjusted to reflect the actual inseason total run. The Naknek River escapement goal range is

800,000 to 1.4 million. Sockeye salmon returning to the Naknek/Kvichak District are predicted to be 46% age-1.3, 30% age-1.2, 12% age-2.2, and 12% age-2.3 fish.

To begin the season, the Naknek Section only will be open to drift gillnet gear, and for set gillnet gear, both the Naknek and Kvichak Sections will be open beginning June 1. Fishing time during the first 3 weeks of June will be 4 days a week from 9:00 a.m. Monday to 9:00 a.m. Friday beginning 9:00 a.m. Tuesday, June 1 and ending 9:00 a.m. Wednesday, June 23. Permit holders participating in the Naknek/Kvichak District salmon fishery should be advised that once sufficient run strength appears in the district they may be put on short notice.

There is the possibility of escapement falling behind schedule in the Kvichak River. In order to reduce the harvest of Kvichak stocks, the department may restrict fishing to the flood portion of the tide only, from the 7-foot level to high water slack.

With limited information and low abundance over the past 5 years, special attention will be given to Chinook salmon run strength and effort levels early in June. A mesh size restriction of 5.5 inches or less will be in effect beginning June 1, to help in the conservation of Chinook salmon.

During closures, there will be extensive use of district test fishing boats. Additional volunteer test boats might be needed because of this increase in test fishing. Permit holders interested in district test fishing in the Naknek-Kvichak District should contact Slim Morstad at (907) 246-3341 in King Salmon.

EGEGIK DISTRICT

A forecasted run of approximately 10.6 million sockeye salmon is expected for the Egegik River in 2010. The escapement goal range is 800,000 to 1.4 million. Based on the forecast, the expected surplus potentially available for harvest is approximately 9.2 million fish. Approximately 38% of the run is expected to be age-2.2 fish, followed by age-2.3 (37%), age-1.2 (13%) and age-1.3 (12%).

The proportion of harvest between set gillnets and drift gillnets (during the allocation period) in 2009 was approximately 15% and 85% respectively; the sockeye salmon allocation plan specifies 14% and 86%. In 2010, separate gear openings and extensions are tools that will be used to adjust harvest in an attempt to achieve allocation percentages. At the January 2001 BOF meeting, a regulation was adopted that directs the department to avoid "to the extent practicable", continuous fishing with set gillnet gear in the Egegik District. Therefore, set gillnet permit holders in Egegik should expect breaks in fishing.

Based on the forecasted run size to the Kvichak River, fishing will begin in the full Egegik District. The season will start with a 4 day per week schedule that will be in effect through June 15. By emergency order, commercial fishing will be allowed in the Egegik District from 9:00 a.m. Monday until 9:00 a.m. Friday beginning 12:00 midnight Tuesday, June 1 and ending 12:00 midnight Wednesday June 16. Beginning June 16, fishing will be scheduled according to sockeye salmon run strength. As in previous years, some openings could occur on short notice. Periods will be adjusted to allocate harvest between drift and set gillnet gear groups.

The 2006 parent-year escapement for coho salmon was assessed using aerial surveys and produced an index count of 21,000 coho compared to the 1997-2005 average of 8,500. The commercial harvest in 2006 was approximately 26,800 coho, 90% of the recent 20-year average

of 30,000. In 2010, management of the fall coho fishery will be based on fishery performance and run strength indicators.

District test fishing for inseason management may be conducted periodically depending on run characteristics. Permit holders interested in test fishing in the Egegik District should contact Paul Salomone by calling (907) 267-2229 (Anchorage) or 246-3341 (King Salmon after May 31, 2010).

UGASHIK DISTRICT

The forecasted Ugashik River sockeye salmon run in 2010 is 4.5 million fish. The escapement goal range is 500,000 to 1.2 million sockeye. Based on the forecast, approximately 3.5 million fish are potentially available for harvest. Approximately 51% of the run is expected to be age-1.2 fish, 29% age-1.3, 10% age-2.2, and 9% age-2.3 fish.

The allocation of the sockeye salmon harvest between set gillnets and drift gillnets (during the allocation period) in 2009 was approximately 13% and 87% respectively; the Ugashik District allocation plan specifies 10% and 90%. As in previous years, separate gear openings and extensions will be used to adjust harvest between gear groups in 2010. As always, short notice openings may occur.

The emergency order period in the Ugashik District begins at midnight, Tuesday June 1 and commercial fishing will be allowed from 9:00 a.m. Monday to 9:00 a.m. Friday ending 9:00 a.m. Friday, June 18. With an expected return to the Kvichak that exceeds a 40% exploitation rate above the minimum escapement goal stipulated in regulation, fishing time after June 18 will depend on fishery performance and run strength indicators.

Permit holders should be aware that because of difficulties in controlling escapement in the early portion of the run the last several years, the department may use time and area authority to concentrate effort early in the season. This would take the form of defining a line from Smokey Point to the south spit and allowing fishing EAST of that line. The purpose is to focus fishing effort on concentrations of fish nearest to escaping the fishery, and would only occur for the length of time necessary to control escapement. Permit holders should note that the regulation restricting opportunity to no more than 48 hours between June 16 and June 23 will not be in effect in 2010.

Parent-year coho salmon escapements in the Ugashik District were assessed by aerial surveys. The escapement index for Ugashik coho in 2006 was approximately 12,800. However, significant portions of the survey were done under conditions that prohibited a complete assessment of coho streams. Coho harvest in 2006 was approximately 3,000. Recent effort for coho salmon within the Ugashik District has been low. Directed commercial openings for coho salmon in 2010 will depend on fishery performance and run strength indicators.

Area T permit holders who fish the Cinder River and Port Heiden sections prior to July 1 and deliver their catch in the Ugashik District are reminded to report the section of catch on the appropriate fish tickets. Only the inner Port Heiden Section and the Cinder River Lagoon have fishing periods available to Area T permit holders in June, the outside waters of the Cinder River section are open after August 1. In addition, permit holders fishing Ugashik after August 1 should be aware of a change to the fall schedule adopted during the 2009 Alaska Board of Fisheries meeting. Beginning August 1, the Ugashik fall schedule will be 9:00 a.m. Thursday to

9:00 a.m. Monday. There is a closed waters area southwest of Cape Meshik as defined by 5 AAC 09.350(1). Permit holders interested in test fishing in the Ugashik District should contact Paul Salomone at (907) 267-2229 (Anchorage) or 243-3341 (King Salmon after May 31, 2010).

NUSHAGAK DISTRICT

The variable escapement goal adopted for the Nushagak River is contained in the Wood River Special Harvest Area (WRSHA) Management Plan. This plan directs the department to achieve sockeye salmon escapements within the escapement goal range of 340,000 to 760,000 when the preseason forecast is greater than 1 million fish. If the preseason forecast is below 1 million fish, then an Optimum Escapement Goal (OEG) minimum of 235,000 sockeye salmon is in effect when the ratio of Wood River to Nushagak River sockeye salmon is projected to exceed 3:1. The first week of July, the department assesses Nushagak River sockeye salmon run strength through July 1 and adjusts the escapement goal based on that assessment. If the sockeye salmon forecast to the Wood and Nushagak Rivers for 2010, 6.2 million and 2.3 million respectively, are accurate, the department projects little if any fishing time in the WRSHA.

At the December 2009 BOF meeting, new regulations regarding fishing in the WRSHA were passed. The department may open the WRSHA to commercial fishing if the escapement past the Wood River towers has exceeded 1.1 million sockeye and the department projects the escapement will exceed 1.4 million sockeye salmon. If the WRSHA is opened under this provision, fishing will be concurrent with both gear types fishing in the WRSHA and fishing in the regular district will also be concurrent. There is no gear allocation associated with the openings.

The Nushagak District Commercial Set and Drift Gillnet Sockeye Salmon Fisheries Management and Allocation Plan remain in effect. The allocation plan specifies that 74% of the sockeye salmon harvest in the Nushagak District is to be taken by drift gillnets with the remaining 26% divided between the Nushagak Section set gillnets (20%) and Igushik Section set gillnets (6%). Sockeye salmon taken in the WRSHA are counted separately but have the same allocation ratio of 74% drift and 26% set gillnet except as mentioned above. To attain the specified allocation percentages between gear types, differential fishing time and/or single gear group openings are likely, as is primarily ebb fishing for the drift fleet. The calculation period for the sockeye salmon allocation plan ends July 17. No management action directed at allocation will occur after July 17; both gear types will then fish concurrently. The department will attempt to achieve the specified allocation percentages, but achievement of escapement goals and harvest of surplus fish are the primary objectives.

The 2010 forecast for Chinook salmon returning to the Nushagak River is 117,000 fish (79% age-1.3 and older). Nushagak River Chinook salmon are managed according to the Nushagak/Mulchatna Chinook Salmon Management Plan. This plan directs the commercial fishery to be managed for an inriver goal of 75,000 Chinook salmon, while the sport fishery is to be managed for a guideline harvest of 5,000 fish, if the projected inriver escapement is between 65,000 and 75,000 fish. Based on the preseason forecast and the inriver goal, 42,000 Chinook salmon could potentially be available for commercial harvest. A portion of this surplus may be taken in the subsistence fishery (8,000 to 12,000 Chinook salmon taken on Dillingham beaches), but the department anticipates some directed Chinook openings in 2010. Permit holders should expect the first two directed Chinook openings on June 7 and June 10. Subsequent openings will

follow only if escapement is sufficient to warrant additional openings and will be similar to previous year's schedules. The duration of these openings will be based on escapement information, fleet size, and harvest; however, directed openings for Chinook will not occur if escapement is below historical levels. Nushagak escapement enumeration is scheduled to begin on June 4 or 5. Openings will be announced as usual, locally on marine VHF channel 7 and broadcast on local radio stations. The department will attempt to provide 24 hours notice for all directed Chinook openings. For all directed Chinook openings, the Nushagak District will be open to the Chinook line the BOF instituted in 2003 and mesh size will be restricted to 7.5 inches or larger. Permit holders are reminded that either gear type can be closed if the harvest ratio of sockeye to Chinook exceeds 2:1.

The 2010 forecasted run of sockeye salmon for the Nushagak District is 10.6 million fish. Based on the forecast, approximately 8.4 million fish could potentially be available for harvest. The forecast by river is: Wood River with approximately 6.2 million (escapement goal range 700,000 to 1.5 million); the Igushik River with approximately 2.1 million (escapement goal range 150,000 to 300,000); and the Nushagak River with approximately 2.3 million (escapement goal range of 340,000 to 760,000). Approximately 38% of the forecasted run is age-1.2 sockeye salmon, 3% age-2.2, 57% age-1.3, and 1% age-2.3 fish.

Management strategies for 2010 include: 1) Directed Chinook salmon openings on June 7 and 10 as escapement warrants, 2) Igushik Section sockeye salmon openings are likely beginning in the third week of June and will likely be set gillnet only until escapement or strong harvests dictate otherwise, and 3) although WRSHA openings are not out of the question, fishing should begin in the regular district in late June with short openings. For the 2010 season, the department will seek to harvest Chinook salmon surplus to escapement needs. Once sockeye abundance warrants, management priority will shift from Chinook to sockeye management. Openings will be scheduled based on sockeye salmon escapement levels in the Nushagak and Wood rivers and mesh size will be limited to 5.5 inches or smaller unless Chinook escapement is above expectations. If the Nushagak sockeye salmon escapement falls below the expected 340,000 fish curve, then a strong movement of sockeye salmon into the Wood River will allow openings in the WRSHA. Commercial openings in the district would follow if escapement levels in the Nushagak River improve.

Igushik River sockeye salmon will be managed independently of the Nushagak/Wood sockeye salmon stocks. Limited commercial set gillnet fishing will be allowed in Igushik Section as soon as there is a market available. Once escapement information is available from the counting tower (approximately June 24), additional fishing time may be allowed if warranted by escapement and harvest rates. Drift gillnet openings (8–12 hours daily) in the Igushik Section will be added as needed to control sockeye salmon escapement. Large pulses of fish will result in early set gillnet openings in an attempt to maintain the 6% sockeye harvest allocated to the Igushik Section set gillnet permit holders. If escapement falls below the minimum escapement goal curve, the department may reduce fishing area in the Nushagak Section to protect Igushik River sockeye.

In 2010, there are no forecasts of pink or coho salmon runs to the Nushagak River. The department will switch to pink and coho salmon management around July 20. The schedule will begin with 15-hour fishing periods Monday, Wednesday, and Friday starting near low tide with no mesh restrictions, and with 15-hour periods starting at low tide on Tuesday, Thursday and

Saturday with 4 ¾ inch mesh or smaller. Fishermen should talk to their markets well in advance, especially if they plan to target pink salmon.

District test fishing for inseason management may be conducted periodically depending on run characteristics. Permit holders interested in test fishing in the Nushagak District should contact Tim Sands in Dillingham at (907) 842-5227.

TOGIAK DISTRICT

Commercial fisheries in Togiak District are managed under the Togiak District Salmon Management Plan (TDSMP), which was adopted by the BOF in January 1996. At the December 2009 BOF meeting, two changes were made to the TDSMP: 1) changed the date from July 24 to July 27 after which permit holders that fished in other districts may fish in Togiak and permit holders that fished in Togiak may fish in other districts (an addition of 3 days to the exclusive period) and 2) changed the weekly fishing schedule in Kulukak Section from 9:00 a.m. Monday through 9:00 a.m. Thursday to 9:00 a.m. Monday through 9:00 p.m. Wednesday (a reduction of 12 hours to the weekly period). The TDSMP also increases the weekly fishing schedule in the Togiak River Section between July 1 and July 16, and restricts mesh size to 5.5 inches or smaller between June 15 and July 15 for the conservation of Chinook salmon.

Chinook salmon run strength in the Togiak River declined between 1994 and 1997 from a total run of 26,000 fish in 1994 to 18,000 in 1997. Of the two surveys completed over the last 6 years, escapement estimates have averaged over 14,700 Chinook salmon, exceeding the 10,000 fish escapement goal. Adequate yearly Chinook escapement can be attributed to mesh size restrictions in late June and early July and to reductions in the weekly fishing schedule during late June. Based on the anticipated Chinook run strength, reductions in the weekly fishing schedule are again likely for the 2010 season. Commercial fishing time will likely be no more than 72 hours during each of the last 2 weeks of June.

The 2010 inshore run of sockeye salmon to the Togiak River is forecasted at 1.0 million fish. The sockeye salmon escapement goal range for the Togiak River is 120,000 to 270,000. Based on the forecast, approximately 850,000 sockeye salmon will potentially be available for commercial harvest. Approximately 20% of the run is expected to be 2-ocean fish and 80% is expected to be 3-ocean fish. The increased weekly fishing schedule in early July, specified in the TDSMP, will likely be utilized for the harvest of sockeye salmon if warranted by escapement levels. Although changes were made to the schedule at the December 2009 BOF meeting, the Kulukak Section weekly schedule may be further reduced to protect this small system.

Coho salmon returns are not forecasted in the Togiak District due to lack of sufficient age class information and accurate escapement data. If a market for coho is present, a very conservative harvest strategy will be utilized due to the lack of information about the returning coho salmon run.

Table 1.-Forecast of total run, escapement, and harvest of sockeye salmon returning to Bristol Bay River systems in 2010.

Millions of Sockeye Salmon							
	Total Run Forecast by Age Class						
DISTRICT							**Total**
River	1.2	2.2	1.3	2.3	**Total**	**Escapement**	**Harvest**
NAKNEK-KVICHAK:							
Kvichak	1.74	0.65	0.98	0.47	3.84	2.00	1.17
Alagnak	0.48	0.10	1.10	0.11	1.79	0.93	0.80
Naknek	1.72	0.82	3.87	0.96	7.37	1.10	6.04
Total	**3.94**	**1.57**	**5.95**	**1.54**	**13.00**	**4.03**	**8.56**
EGEGIK	**1.35**	**4.02**	**1.34**	**3.92**	**10.63**	**1.10**	**9.20**
UGASHIK	**2.29**	**0.45**	**1.33**	**0.43**	**4.50**	**0.85**	**3.51**
NUSHAGAK							
Wood	3.06	0.23	2.83	0.07	6.18	1.10	4.89
Igushik	0.65	0.02	1.41	0.03	2.11	0.23	1.82
Nushagak	0.29	0.01	1.84	0.03	2.32	0.55	1.70
Total	**4.00**	**0.27**	**6.09**	**0.11**	**10.61**	**1.88**	**8.41**
TOGIAK	**0.15**	**0.06**	**0.78**	**0.04**	**1.03**	**0.15**	**0.85**
BRISTOL BAY	**11.73**	**6.37**	**15.49**	**6.05**	**39.77**	**8.01**	**30.53**

APPENDIX D. 2010 TOGIAK HERRING OUTLOOK

ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF COMMERCIAL FISHERIES
NEWS RELEASE

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2010 TOGIAK HERRING FISHERY INFORMATION

This notice is intended to provide information to participants in the 2010 Togiak herring fisheries. The 2010 Togiak District herring biomass is forecasted to be 146,775 tons, an increase from the 2009 forecast of 121,800 tons and the postseason biomass estimate of 142,133 tons. The 2010 forecast is based on an age-structured analysis (ASA) model that has been used since 1993. Ages -7 and -8 herring are expected to comprise 25% of the projected herring run, with ages -6 and under making up another 45% (Figure 1). Ages 9-11 are expected to make up 17% of the spawning run, while the remaining 13% will be age 12+ fish. Average weight for age -7 and older herring should exceed 300 grams. The forecasted individual average weight of herring in the harvested biomass is 330 grams. This is a decrease of 24 grams from 2009 and 64 grams from 2008.

The Bristol Bay Herring Management Plan (BBHMP) (**5 AAC 27.865**) sets a maximum 20% exploitation rate for the Togiak District stock. Based on a forecasted run of 146,775 tons, up to 29,355 tons will be available for harvest in 2010. Harvest allocation, in accordance with the BBHMP, will be:

Fishery	Harvest Allocation
Spawn-on-Kelp	1,500 tons
Dutch Harbor Food and Bait	1,950 tons
Togiak Sac Roe	25,905 tons
Purse Seine (70%)	18,134 tons
Gillnet (30%)	7,772 tons

SAC ROE FISHERY

Management strategies for Togiak fisheries are designed to provide for maximum sustained yield, while affording the greatest economic benefit to fishermen and processors. In 2010, sac roe fisheries will again be managed to maximize product quality through long openings so permit holders can make smaller sets and harvest the best fish available. Processors will also have more flexibility to control harvest volume so holding time between harvest and processing is optimal. Available processing capacity will be assessed as companies register for the 2010 season. Daily freezing capacity is expected to be more than last year's capacity and will probably be between 2,100 and 2,200 tons per day. For the last few seasons, the department has opened the herring fishery as soon as threshold biomass has been documented. The main reason for this being the department believes that it maximizes fishing and processing time. Organized test fishing programs can delay the start of fishing by 12 hours or more. Given a large quota and limited processing capacity, maximizing processing time is important.

Purse Seine

In recent years, the seine fleet has operated in conjunction with the processing industry in cooperative groups. The department assumes this to be the case again in 2010 thus fishing time and area will be very liberal. This should allow purse seine vessels to locate high quality herring and allow each cooperative to fill their company's daily processing capacity. This approach should result in fresher, higher quality roe, thereby maximizing product quality and value.

With the opening of area to commercial harvest as soon as threshold biomass is documented, the department will not be coordinating any test fishing efforts. As always, the department will work with companies that want to make test sets prior to the threshold biomass being documented.

Gillnet

Management of the gillnet fishery will be similar to past years. Ample fishing time and area will be allowed to attempt to take the entire harvest guideline of 7,772 tons, while maintaining the specified 70/30 purse seine/gillnet ratio. Product quality will be a priority throughout the gillnet fishery.

In 2010, the department will primarily focus the gillnet fleet in the area east of Right Hand Point. The department will consider opening areas west of Right Hand Point to the gillnet fleet if weather conditions are unfavorable in the eastern section. Test fishing becomes more of a burden with the dwindling number of participants in the gillnet fishery. As in 2009, the plan is to open the gillnet area to fishing when threshold biomass is present. Individual companies and fishermen can organize their own test fishing scheme once the area is open and make decisions on when to begin fishing for production. Until it is determined that marketable quality fish are present, participants should test cautiously with a small portion of gear.

At the December 2009 Alaska Board of Fisheries (BOF) meeting, the Egg Island Section was formally approved and the coordinates are now in regulation. Also, the legal compliment of gear was increased to 100 fathoms. Permit holders no longer need to wait for an Emergency Order to fish 100 fathoms of gear.

ADF&G OPERATIONS 2010

Beginning in late April or early May, current fishery information will be available by calling the telephone recorder in Dillingham at (907) 842-5226. Recordings will be updated regularly

throughout the season as information becomes available. The department will conduct regular aerial surveys of Togiak District beginning in late April or early May depending on weather conditions. Once fish are observed, the department will relocate to a field office in Togiak. The department will monitor marine VHF channel 7 from Togiak. Fishing announcements and regular fishery updates will be broadcast over this channel. Reports will be broadcast from Togiak each evening at 6:30 p.m., and at other times as needed. Harvest and fishery opening information will be available with some delay at the Commercial Fisheries website: http://www.cf.adfg.state.ak.us/ .

Test Fish Guidelines

Gillnet and Purse Seine

1 Verbal approval to test fish must be obtained from ADF&G in Togiak prior to any test fishing activity. Department representatives will assign an area to each test fish volunteer with a starting and ending time. Approval to test fish is limited to the area and time frame assigned.

2 The department representative, upon contact, will assign a number of test sets and a number of samples per set. The number of sets typically ranges from 1 to 3 sets per vessel. Number of samples per set typically ranges from 1 to 2 for gillnet sets and up to 4 for purse seine sets.

3 Samples should weigh approximately 10 kg to 15 kg (25 to 30 lbs) and be placed in a container (trash bag or bucket) labeled with set location, vessel name, time of set, and for gillnets, mesh size.

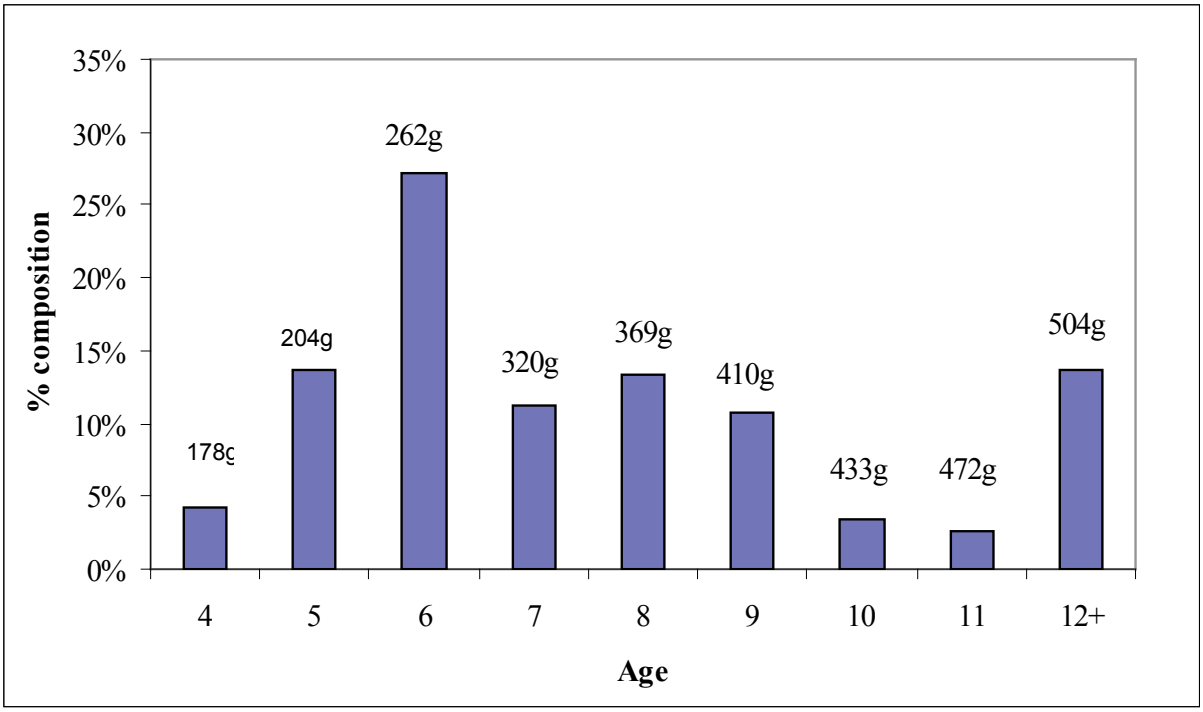

Figure 1. Forecasted age composition by weight for the 2010 Togiak herring run. Forecasted average weight (grams) shown for each age category.