Fishery Management Report No. 10-25

2009 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)

Measures (fisheries)

fork length	FL
mideye to fork	MEF
mideye to tail fork	METF
standard length	SL
total length	TL

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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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 2009 Bristol Bay Management Report is the 48th 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 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 2009. 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. 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. Corrections or comments should be directed to the Anchorage office. Attention: Editor Slim Morstad, Eastside Area Management Biologist, P.O. Box 37, King Salmon AK, 99613.

Key words: Bristol Bay, 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*, Naknek, Kvichak, Egegik, Ugashik, Wood, Nushagak, Igushik, Togiak.

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 in the world. Sockeye salmon *Oncorhynchus nerka* 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 desired escapement goals for the major salmon species while harvesting all fish in excess of the established requirement through orderly fisheries. In addition, regulatory management plans have been adopted for individual species in certain districts.

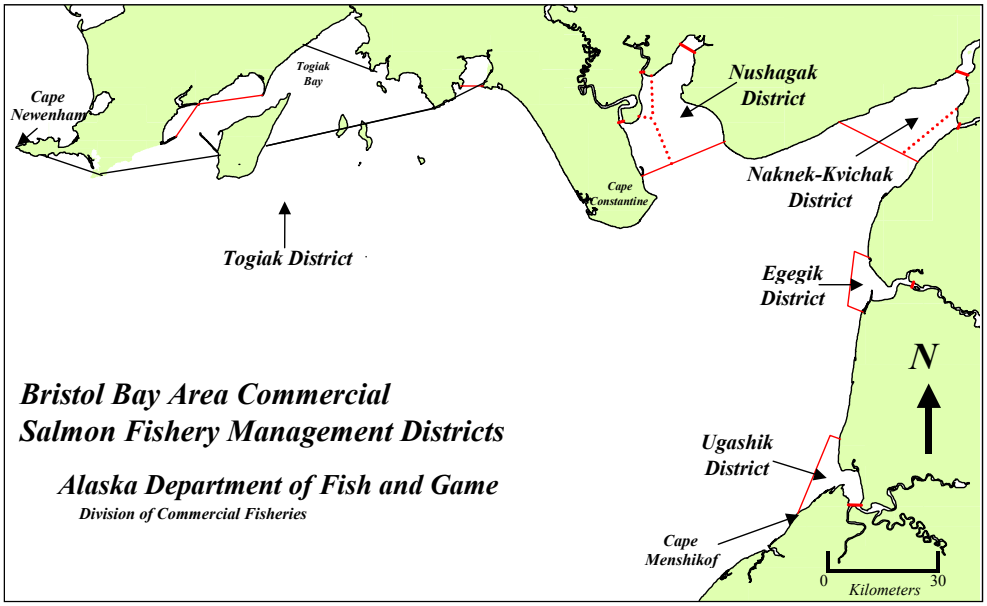

Figure 1.–Bristol Bay area commercial fisheries salmon management districts.

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 (1989–2008) average nearly 25.7 million sockeye, 64,900 Chinook, 947,000 chum, 97,000 coho, and 170,000 (even-years only) pink salmon (Appendices A3–A7). Since 1989, the value of the commercial salmon harvest in Bristol Bay has averaged $120.70 million, with sockeye salmon being the most valuable, worth an average $118.6 million (Appendix A25). Subsistence catches are comprised primarily of sockeye salmon and average approximately 142,000 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 2 drift permit holders to concurrently fish from the same vessel and jointly operate up to 200 fathoms of drift gillnet gear. This regulation does not apply in special harvest areas. Drift gillnet permits are the most numerous at 1,863 in Bristol Bay (Area T), and of those, 1,642 fished in 2009. There are a total of 981 set gillnet permits in Bristol Bay and of those, 855 fished in 2009 (Appendix A2).

2009 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 test fishery, and 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 weak year classes, discrepancies from the forecast, 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 2009 was forecast to be approximately 33.77 million (Table 1). The Bristol Bay sockeye salmon harvest was predicted to reach nearly 24.15 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 2009 was the sum of individual predictions for 9 river systems (Kvichak, Alagnak, Naknek, Egegik, Ugashik, Wood, Igushik, Nushagak-Mulchatna, and Togiak) and 4 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 1976 to 2004 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 2006 through 2008.

SOUTH UNIMAK/SHUMAGIN ISLAND 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 BOF. 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 to window periods of fishing time. These window periods 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 that were based on a chum cap and a percentage of the Bristol Bay preseason sockeye salmon forecast.

Preliminary catch information for 2009 indicates that the Shumagin Island fishery landed 573,000 sockeye salmon, and the South Unimak fishery landed 594,000 sockeye salmon (Appendix A26). The South Unimak sockeye salmon harvest was 5% below the 10-year average and the chum salmon catch was 20% above the 10-year average. In the Shumagin Island fishery, sockeye salmon harvest was 29% higher than the 10-year average and chum salmon harvest was 3 times the 10-year average. This translates to an overall sockeye salmon harvest that was 15% higher than the 10-year average and a chum salmon harvest that was 200% higher than the 10-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 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 Fisheries Research Institute (FRI), the Port Moller test fishery project operated from 1987 through 2003. In 2004 through 2009, 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 10 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.

Genetics sampling was added to the Port Moller test fishery project starting in 2004 and continued in 2009. 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 3–5 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. While it is still uncertain how the Port Moller genetics data will be integrated into the day to day management of Bristol Bay fisheries, the project is generating useful information.

ECONOMICS AND MARKET PRODUCTION

In 2009, exvessel value of the inshore commercial salmon harvest was estimated at $129.69 million. The 1999 to 2008 average exvessel value of Bristol Bay commercial salmon fisheries was $82.66 million (Appendix A25).

During the 2009 season, 9 companies canned, 25 companies froze, and 3 companies cured salmon in Bristol Bay. In addition, 30 companies exported fish by air. A total of 39 processors/buyers reported that they processed fish from Bristol Bay in 2009 (Table 25).

RUN AND HARVEST PERFORMANCE BY SPECIES

Sockeye Salmon

The 2009 inshore sockeye salmon run of approximately 40.45 million fish exceeded the preseason forecast of 33.77 million (Tables 1 and 4). Actual runs were above forecast in all districts. Sockeye salmon dominated the inshore commercial harvest, totaling 30.90 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 2009 were below the recent 20-year averages in all districts. The 2009 baywide commercial harvest of 30,402 Chinook was well below the 20-year average of 67,000 salmon. The small harvest was most dramatic in the Nushagak District, where the harvest was 24,058 of an expected harvest of 81,000 fish (Appendix A4).

Chum Salmon

In 2009, the commercial harvest of approximately 1.40 million chum salmon was 38% more than the 20-year average of 946,000 fish. Chum salmon catches were above 20-year averages in all districts except Ugashik and Togiak (Appendix A5).

Pink Salmon

Bristol Bay has a dominant even-year pink salmon cycle so there was no significant harvest in 2009.

Coho Salmon

The 2009 baywide coho salmon commercial harvest of 59,309 was less than the recent 10-year average of 69,120 fish (Appendix A7).

SEASON SUMMARY BY DISTRICT

Naknek/Kvichak District

The 2009 forecast for the Naknek/Kvichak District projected a total run of 12.11 million sockeye salmon (4.77 million for escapement and 7.35 million to harvest (Table 1)). The forecast by river system was 5.30 million to the Kvichak River, 2.03 million to the Alagnak River, and 4.79 to the Naknek River (Table 2). The escapement goals by river system are as follows: 1) minimum 2,000,000 for the Kvichak River, 2) minimum 320 thousand for the Alagnak River and 3) range of 800 thousand to 1.40 million for the Naknek River. The actual total inshore run to the district for 2009 was 12.93 million sockeye salmon. The commercial catch was 8.52 million sockeye salmon. As in 2008, the Naknek River Special Harvest Area (NRSHA) did not open for any portion of the season.

Of the many Chinook salmon runs to Bristol Bay, the Nushagak River run is the only one large enough to justify producing a forecast. ADF&G does not forecast Chinook, chum, coho, or pink salmon for systems in the Naknek/Kvichak District. The commercial harvest of Chinook salmon has remained relatively insignificant due to current mesh size restrictions that have been implemented since the early 1990s. Mesh restrictions are set by "Emergency Order" (EO) and prohibit gillnets with a mesh size larger than 5.5 inches until July 21 (Table 8).

For the commercial fishery to begin in Naknek/Kvichak District, the sockeye salmon forecast for Kvichak River must exceed 30% of the minimum sustainable escapement goal (SEG). When the forecast falls below that level, fishing will begin in the special harvest areas of Naknek, Egegik and Ugashik rivers (5 AAC 06.360 (h)). Based on the 2009 sockeye salmon forecast for Kvichak River, these restrictions were not implemented on June 1. However, the drift gillnet fleet was restricted to Naknek Section when the fishery opened and the set gillnet fleet was allowed to fish the whole district. Fishing time during the first 3 weeks of June was from 9:00 a.m. Monday to 9:00 a.m. Friday, beginning 9:00 a.m. Monday, June 1 and ending 9:00 a.m. Tuesday, June 23.

The district opened at 9:00 a.m. Monday, June 1, however, the first recorded deliveries occurred on June 15, (7 drift and 1 set gillnet delivery (Table 9)). Between June 15 and 9:00 a.m. Tuesday, June 23, a total of 200,778 sockeye salmon were harvested. Following the fishery closure at 9:00 a.m. June 23, the next fishing period would be based on escapement into the Naknek River.

The escapement counting towers for the Naknek, Kvichak, and Alagnak rivers were all operational during the 2009 season. The Naknek River tower began counting on June 20, the Kvichak River June 21, and the Alagnak River on June 23 (Table 19). Escapement objectives were met or exceeded in all 3 systems. Sockeye salmon passage rates were ahead of schedule from the beginning of operations, possibly due to warm spring conditions. Based on historic run timing curves, the expected tower count through June 23 for Naknek River was 11,000 sockeye salmon while the actual escapement past the tower was 59,406 fish. Given the high level of escapement to the Naknek River, no test fishing occurred in Naknek Section following the June 23 closure. Commercial fishing resumed the evening of June 24 for a 7-hour period for both gear groups, with the drift fleet still confined to the Naknek Section. Daily escapement rates past the Naknek tower continued at levels exceeding expectations, thus a continuation of one fishing period per day occurred through June 28. By 6:00 a.m. June 28, 220,266 sockeye salmon had passed the Naknek tower. Based on historic run timing, 110,000 fish should have passed the tower through midnight June 28. On the Kvichak River, 95,796 sockeye salmon had passed the tower through 6:00 a.m. June 28, while the projected escapement based on historic run timing for this date was 40,000 fish. With escapements significantly ahead of schedule, fishing time for set gillnet permit holders was extended until further notice and the drift fleet fished both tides. The cumulative count of sockeye salmon past the Naknek tower through 6:00 a.m. Friday, July 3 was 573,618; the expected count was 400,000 fish. For the Kvichak and Alagnak rivers, 762,138 and 221,892 sockeye salmon, respectively, had passed the towers, both exceeding historic projections for July 3. With escapement in Alagnak and Kvichak rivers ahead of schedule, the drift gillnet fleet was allowed to fish the Naknek-Kvichak District for a 9-hour period beginning 7:00 p.m. Saturday, July 4.

Through July 17, three additional fishing periods were scheduled in the Naknek/Kvichak District for the drift fleet, while the set gillnet fleet was allowed to fish the Naknek/Kvichak District continuously from 5:30 a.m. Monday, June 29 until 9:00 a.m. Friday, July 31. On August 3, 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 2009 season.

The total harvest in the Naknek/Kvichak District was 8.52 million sockeye salmon, more than the 10-year average of 6.22 million (Appendix A3). The Chinook salmon harvest total was 938 (Appendix A4), which is less than the 10-year average of 3,098 fish. The chum salmon harvest totaled 258,141 fish, which is more than the 20-year average of 187 thousand (Appendix A5). There was a reported commercial harvest of 542 coho salmon (Appendix A7).

Egegik District

The 2009 projected Egegik District harvest of 8.19 million sockeye salmon was 34% of the predicted total Bristol Bay harvest of 24.15 million fish (Table 1).

In 2009, the midpoint of the Egegik District sockeye salmon run was 5 days earlier than the most recent 20-year (1989–2008) average of July 4. The harvest of 11.58 million fish was the fourth largest commercial catch for the same 20-year period (Appendix A13). The escapement of approximately 1.15 million fish was within the SEG range of 800,000 to 1.40 million (Appendix A1). With an approximate inshore total of 12.73 million sockeye salmon to the Egegik District, the 2009 run ranks fifth over the last 20 years and was approximately 30% above the forecast of 9.59 million fish (Appendix A13). The 2009 run was 14% above average for recent cycle years. The most recent 20-year average for the Egegik run was 10.26 million sockeye salmon.

Daily inriver test fishing, which provides estimates of sockeye salmon passage into the lower Egegik River, began on June 14 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 24,282 sockeye salmon (Table 23). This was a fairly large escapement for that date and might suggest a volume of fish had entered the river prior to tower operations. However, based on test fishery indices and harvest rates, we believe that project operations started in time to assess a pulse that was detected by the test fishery on June 16–17, and that no significant passage occurred prior to the project becoming operational.

The 2009 preseason projection for a Kvichak River run that would provide for the minimum escapement of 2.00 million sockeye salmon allowed commercial fishing to begin in the full Egegik District. The district opened to commercial salmon fishing on June 1. Recently, fishing has been passively managed by use of a 3 day per week schedule early in the season. However, because the 2009 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 2009.

The 4 day per week schedule was in place until Friday, June 12, with first landings occurring June 9 (Table 10). Run assessment information indicated low abundance within the district which remained closed over the weekend of June 13–14.

Management of the fishery switched to a tide by tide basis (active management) on June 15. A 9-hour period on the morning tide of Monday, June 15, produced a harvest of 10,734 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 continued to develop. This strategy allows permit holders an opportunity to fish early in the run while minimizing risk to escapement. Considering harvest on June 15, the alternate day fishing strategy was implemented and a 9-hour commercial opening was announced for June 17 followed by a 30.5-hour subsistence period scheduled to end at midnight June 18. During evening drifts on June 16 and the morning of June 17, inriver test fishery indices increased sharply, suggesting an increased abundance in the river and possibly the district. As a result, an EO was issued cancelling the last 24 hours of a previously announced subsistence period and announcing a 9-hour commercial opening for the early morning tide on June 18. Catch on June 17 was 75,020 sockeye salmon and on June 18 another 99,907 fish were harvested. Given the early stage of the run and relatively small fleet, these were deemed large harvests for those dates.

Indices from the inriver test fishery remained high and, given the large harvests on June 17 and June 18, an 8-hour set gillnet only opening was allowed on the evening of June 18 followed by another 8-hour opening for both gear groups on the morning tide of June 19. Uncertain of how to gauge the large indices from the inriver test fishery, a cautious approach was taken until counting tower passage rates could be compared to test fishery indices in the lower river.

The June 19 opening produced a catch of 138,664 fish, an increase from the day before. The escapement project became operational at midnight on June 18 and estimated passage for the day was 24,280 fish, near the upper end of the range for that date, but not as large as anticipated given the size of the inriver indices. The escapement estimate for June 19 was 39,474 fish, again near the high end of the range for the date, but within the historical range of passage. Inriver test fishery indices may have appeared inflated because low water levels within the river

concentrated fish and made them more vulnerable to inriver test nets and/or the catchability was better than usual because fish size was large. Both of these factors may have combined to give inflated indices suggesting large escapements. The actual escapements were larger than expected for the time of year but still within a normal range, allowing management of the commercial fishery to be fairly aggressive.

With escapement ahead of the historical curve, fishing continued at a pace of one tide per day for both gear groups. Catches escalated within the district and around the Bay until June 25 when processing capacity became a factor with some companies placing limits on their fleets. On that date cumulative harvest in Egegik was 2.41 million sockeye salmon and cumulative escapement was approximately 261,552 fish. With processors limiting catches, fishing opportunity was liberalized to two tides per day, allowing the maximum latitude for industry to utilize available surplus fish.

Between June 26 and July 3 fishing was allowed at least daily for both gear groups. Some minor adjustments were made to length of periods or by only allowing single tides for the drift gear group, depending on allocation or pace of escapement. Capacity issues began to ease around July 4 and fishing for the rest of the season was allowed on a daily basis for both gear groups.

By July 8, daily catches began to decline. The 2009 run was both early and large, the bulk occurring prior to July 8, however, catches continued into the third week of July. By the end of the EO period on July 17, the total catch was 11.38 million and cumulative escapement was 1,146,276 sockeye salmon.

According to regulation, the fall fishing schedule of 9:00 a.m. Monday to 9:00 a.m. Friday should be implemented on July 17, but because of low abundance and effort, fishing was allowed to remain open continuously until 9:00 a.m. Friday, July 31. After a closure over the weekend of August 1–2, the normal Monday to Friday schedule began at 9:00 a.m. Monday, August 3.

The 2009 Egegik sockeye salmon run was mostly 2- and 3-ocean fish, which came from the 2004 and 2005 escapements of 1.29 and 1.62 million fish, respectively. Commercial fishermen harvested approximately 90% of the Egegik inshore sockeye salmon run in 2009, compared with the recent 20-year average exploitation rate of 83%. It should be noted that in years of higher abundance, exploitation rates will generally be higher if escapement is within the bounds of the escapement goal range. Peak harvest dates were June 27 and 28, when 782,138 and 897,156 fish were landed, respectively. Peak tower counts occurred July 1–2 and July 10, when 72,864, 97,800 and 77,160 sockeye salmon were counted, respectively. During the EO periods from June 16 to July 17 in 2009, a total of 318.75 hours were fished by the drift gillnet group (59.25 hours more than 2008) and 423.75 hours were fished by the set gillnet gear group (109.25 hours more than in 2008), equating to 42 % and 55%, respectively, of the 768 available hours. By the end of the EO period, harvest percentages were 85% drift and 15% set gillnet (Appendix A9). Allocation as specified in regulation is 86% drift and 14% set gillnet.

Commercial harvest of other salmon species in the Egegik District was approximately 135,978 fish, or about 1.1% of the total. The reported Chinook salmon harvest was 275 fish, 71% below the 20-year average of 939 fish (Appendix A4). The district chum salmon harvest of 124,131 fish was 57% above the recent 20-year average of 79,000 fish (Appendix A5). No pink salmon were reported. Historical pink salmon harvest information is presented in Appendix A6. The coho salmon harvest of 11,572 fish was 60% below the recent 20-year average of 28,000 fish (Appendix A7).

In summary, the 2009 harvest of 11.58 million sockeye salmon in the Egegik District ranked fourth out of the last 20 years, was 30% higher than the most recent 20-year average of approximately 8.70 million fish, and was 33% above forecast. The fishery harvested 90% of the run into the district compared to the 20-year average of 83%. The midpoint of the run was June 30, which is 5 days earlier than the 20-year average. Peak effort occurred on June 25 when 541 drift gillnet vessels were registered to fish in the district (Table 8). There are 16 processors registered to purchase fish in the Egegik District this season (Table 25).

Ugashik District

The 2009 inshore sockeye salmon run to the Ugashik District of 3.92 million fish ranks eleventh in the last 20 years (1989–2008) and was 64% 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 2.55 million fish was 2% below average and ranked tenth for the same period. Sockeye salmon escapement to the Ugashik River was 1.36 million and is above the escapement goal range of 500,000 to 1,200,000 fish. Similar to 2007 and 2008 market conditions in the Ugashik District were particularly tenuous during the 2009 season, with set gillnet fishermen being most affected.

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. Initial landings occurred on June 10 (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 19, when fishery management switched to a tide by tide basis.

The preseason forecast for the Ugashik District projected a harvest of 1.45 million sockeye salmon. Accordingly, commercial fishermen were advised that fishing time after June 19 would depend on inriver test fishing results, tower escapement levels, and fishery performance, with the caveat that given the relatively small forecast, management would initially be conservative. With this advisory, 44 vessels with drift gillnet permits were registered for the Ugashik District on June 20 (Table 8).

Catch through June 19 was 34,904, slightly below historical average of 41,000 fish. With no escapement assessment further commercial fishing was not warranted and the district was opened to subsistence fishing only from 3:00 p.m. on June 19 until 11:59 p.m. June 21.

Inriver test fishing, which occurs about 3 miles upstream of Ugashik Village, started on June 22 and 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 June 29 and ended the day with an estimated passage of 4,902 fish (Table 24).

Initial information from the inriver test fishery became available on June 22 with low passage indices indicating fish were not moving into the river in volume. With low effort expected, a 10-hour period was announced for Monday, June 22. Commercial catch from the period was 62,236 fish, a fairly large harvest for the date compared to historical data. Reports from fishermen indicated that much of the fishing occurred on the west line of the district.

With low inriver test fishery indices, no fishing occurred on June 23 to allow for escapement. A set gillnet only period was allowed on June 24 to determine whether fish were moving into the

inner portion of the district. Catch from this period was 2,789 fish, a low harvest because only a handful of set gillnet fishermen had markets.

Still uncertain as to the level of abundance within the district, an attempt was made to organize a department test fishery for June 25. This effort failed because of logistical complications. Considering uncertainty over levels of abundance, a lack of passage into the river, and small preseason forecast no commercial fishing occurred on Friday June 26. Subsistence fishing was permitted from noon to midnight on June 26.

A 6-hour drift and 10-hour set gillnet period on June 27 produced a catch of 73,189 fish, another fairly large catch for the time of year. Passage into the river as indexed by the inriver test fishery increased, demonstrating escapement. Subsistence fishing was permitted from midnight to noon on June 28.

On the morning of June 28 the inriver test fishery index increased. This prompted a short-notice period, 6-hours for drift and 8-hours for set gillnet gear, on the afternoon/evening tide. Catch from this period was relatively low at 33,061 fish. This was due to low effort as a result of the short notice, and by imposition of catch limits by processors.

Inriver test fishing indices showed a strong increase on the morning of June 29 which prompted another period for both gear groups resulting in a catch of 62,553 fish. Inriver indicators continued to remain high. Fishing continued on a one tide per day basis until July 3. The pulse of fish detected by the test fishery began to pass the counting tower on that date demonstrating an inriver travel time of approximately 4 days from the index fishery to the tower site. Cumulative escapement was 108,456, approximately 4 days ahead of the historical escapement curve. Catches from June 28 to July 3 averaged about 70,000 which were high compared to the historical average of 28,000 sockeye salmon during the same period.

Fishing opportunity was expanded on July 4 to 14.5 hours for both gear groups. Escapement on July 4 was 115,404 bringing the cumulative escapement to 291,686. With at least 3 days of projected escapement of similar magnitude based on the inriver test fish catches, fishing time was expanded to 24-hours per day beginning on July 5. The lower end of the escapement goal range (500,000) was exceeded on July 6–7.

Processor catch limits remained in place until July 6, restraining harvest each period to between 60,000 and 80,000 fish per day until around July 2. Catch volume began to increase on July 2 as a result of increased effort and easing of limits rather than from an increase in abundance. Fishing continued at 24-hours per day until the end of July. Postseason evaluation of the catch and escapement data suggest that abundance within the district was between 150,000 and 200,000 fish per day between June 25 and July 2. Much of this volume passed through the district and entered the river.

Sockeye salmon landings began to taper by July 11. The final catch was 2,553,045 million (Table 11). The final Ugashik River sockeye salmon escapement was 1,346,118 fish when counting ended on July 22. This is above the escapement goal range of 500,000 to 1.20 million. Additionally, about 18,000 sockeye salmon were observed during postseason aerial surveys of the Ugashik system, which includes approximately 300 fish at the outlet of lower Ugashik Lake (Appendix A14).

By regulation, the fall fishing schedule of 9:00 a.m. Monday to 9:00 a.m. Friday was 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 31. After a closure over the weekend of August 1–2, the normal fall Monday to Friday schedule began at 9:00 a.m. Monday, August 3.

By the end of the emergency order period (July 17), set gillnet fishermen caught approximately 13% of the sockeye salmon harvest and drift gillnet fishermen caught 87% (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 400.5 hours, or 83 hours more fishing time than in 2008, while drift gillnetters were permitted to fish a total of 273.5 hours, or 97 hours more than in 2008.

Commercial harvest of other salmon species was approximately 69,000 or 2.6% of the district's total harvest. The harvest of 934 Chinook salmon was 36% below the recent 20-year average of 1,500 (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 2009, surveys were flown on August 7 and estimates were hampered by inclement weather. Observed escapement totaled 349 Chinook salmon.

The chum salmon harvest of 65,439 fish was 14% below the 20-year average of 70,000 (Appendix A5). Chum salmon escapement is assessed on the same survey as Chinook salmon and was hampered by the same conditions. Observed chum salmon escapement totaled 2,718.

The coho salmon harvest of 3,100 fish was well below the 20-year average of 12,000 but there was very little directed commercial effort for Ugashik coho salmon in 2009 (Appendix A7). Aerial surveys to enumerate coho salmon escapement were flown on September 24. Aerial survey estimates totaled 6,240 coho salmon, 26% below the 20-year average of 8,500 fish.

In summary, the 2009 Ugashik District fishery harvested approximately 66% 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 7, 8, and 9 when 205,245, 212,610, and 247,650 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 9, 10, and 11, when 127,386, 228,018 and 167,742 sockeye salmon, respectively, passed the counting tower. Peak effort was on July 10 when 283 vessels with drift gillnet permits were registered to fish in the district and 11 buyers operated 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 impact 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) with impacts lessening but continuing into 2009.

Aerial surveys conducted in early August and again in late September 2009, were flown under poor conditions. As a result information on escapement and distribution is of limited utility. Mother Goose Lake was an unusual color green, similar to that of a popular sports drink. Whether the coloration was due to algal growth or mineral content is not certain, but plant growth that was present in the outlet of Mother Goose Lake in 2008 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 2 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. 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. It is not certain at this time if this distribution 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 fish returning to the impacted areas.

Nushagak District

The 2009 Nushagak District total inshore sockeye salmon run was approximately 10.0 million fish, 12% over the preseason forecast of 8.93 million fish (Table 1). Commercial sockeye salmon harvest in Nushagak District reached 7.67 million, 14% above the preseason projected harvest of 6.78 million fish. Total escapement in the district's 3 major river systems was 2.32 million, which was within the combined escapement goal range of 1.19 million to 2.56 million. Chinook salmon escapement into Nushagak River was 81,480, 9% over the 75,000 inriver goal and harvest was 24,058 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 conservation concern. 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.

Trends in age composition of Chinook spawning escapements in 1995 and 1996 raised concerns about the quality of Chinook escapements in Nushagak River. The proportion of large (age-5 through age-7) fish was less than desired, and the age composition of the escapement during the first half of the run differed substantially from that of the escapement during the second half of the run. In the early portion of the run, male Chinook salmon of the younger age classes comprised the majority of the run, while the older age classes became prevalent in the latter portion of the run. Differences in age composition between escapement and total run, and between early- and late-season escapements, can result from size-selective harvests. To address this concern, ADF&G adopted a strategy of allowing unfished pulses of Chinook salmon into Nushagak River before opening a commercial period. Allowing untargeted fish into the river was intended to lessen the effects of selectivity in the commercial fishery thus allowing fish with a natural age distribution to enter the river. In November 1997, additional language directing

ADF&G to allow pulses of Chinook salmon into Nushagak River that were not exposed to commercial fishing gear was added to NMCSMP.

ADF&G adjusts commercial fishing time and area to harvest Chinook salmon surplus to the inriver goal. Management decisions are based on the preseason forecast and inseason indicators of run strength, including commercial harvest performance, subsistence harvest rates, and inriver passage rates estimated by the sonar project. During the last 5 years, managers have used directed Chinook openings early in June to harvest fish when a surplus appears to be available. Starting openings during the first third of the run allows the harvest to be spread out over more of the run and takes advantage of higher prices offered early in the season. However, this strategy also has the potential for complicating management if the second half of the run is significantly weaker than the first half. When a surplus is forecasted, early commercial openings provide for more time between openings allowing unfished pulses of fish to move through the district, better quality of fish in the harvest, and harvest spread over a larger portion of the run.

The 2009 Nushagak District Chinook salmon forecast was 145,000 fish. With an inriver goal of 75,000 fish and an average sport and subsistence harvest of 6,000 fish, 64,000 Chinook salmon would potentially be available for commercial harvest. In 2009, a meeting with stakeholders determined the fishing schedule prior to the season. The preset schedule allowed stakeholders to plan ahead for marketing purposes, but also the schedule could be suspended if escapement was less than expected. The preseason schedule allowed for 2 openings based on the preseason forecast and subsequent openings based on escapement. The first 2 openings were 12 hours each, occurring on June 7 and June 11, resulting in a total harvest of 547 Chinook salmon.

The sonar escapement enumeration project at Portage Creek was operational on June 6. Early daily Chinook counts were below expectations and continued to be below the historical average through June 19 (Table 21). Two days of increased fish passage on June 18 and 19 brought the total escapement above the cumulative expected level. The increase in escapement was sufficient to warrant an additional directed Chinook opening for 3 hours on June 21. The Chinook harvest from this period was 2,028 fish from 91 drift gillnet deliveries and 150 set gillnet deliveries (Table 12). By June 22 sockeye salmon escapement increased and management focus moved from Chinook to sockeye salmon. The total Chinook salmon harvest from 3 directed openings was 2,575 fish; there was additional Chinook salmon harvest during sockeye openings and the total Chinook salmon harvest was 24,054 for the Nushagak District in 2009. The final Chinook salmon escapement past Nushagak River sonar station was 81,480.

The preseason forecast for the inshore sockeye salmon run to the Nushagak District totaled 8.93 million fish (Table 1), 16% greater than the 20-year average run of 7.73 million fish (Appendix A16). The forecasted Wood River sockeye salmon run (5.01 million) was 9% above the 1989–2008 average run, while the forecasted Nushagak River sockeye salmon run (1.66 million) was expected to be similar to the 20-year average actual run. The forecasted run to Igushik River (2.26 million) was 77% greater than the 1989–2008 average run of 1.34 million fish (Appendix A16).

On the afternoon of June 22, with increasing sockeye salmon escapement in the Wood River, a 10-hour set gillnet period was announced for the Nushagak Section from 1:00 a.m. until 11:00 a.m. on June 23. The cumulative escapement through June 21 was 51,930 and an additional 36,810 sockeye salmon passed the tower on June 22. The total escapement for June 23 was 65,430 bringing the cumulative to 154,170 fish. Large harvests baywide caused processors to

limit or suspend buying late on June 28 and ADF&G responded with increased fishing time in the Nushagak District. Continuous fishing with set gillnets began on June 27 while the drift gillnet fleet fished as much as 19 hours a day (Table 12).

The final escapement to the Wood River reached 1.32 million sockeye salmon. Nushagak escapement was 484,481 fish. The harvest percentages were 20% Nushagak Section set gillnet, 76% drift gillnet and 4% Igushik Section set gillnet.

Commercial fishing with set gillnet gear began in the Igushik Section of the Nushagak District on June 15. This date was chosen after consulting with the processor that was buying fish there. 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 2009 however, there was a large forecast for sockeye salmon returning to the Igushik River and the 2008 escapement was exceptional. Based on the large escapement in 2008 and large 2009 forecast an aggressive fishing schedule was set for Igushik Section. With large set gillnet harvests and indications of fish passage from the crew setting up the counting towers, Igushik Section was opened to drift gillnet gear for 6-hours and to set gillnet gear for 24-hours on June 24.

Escapement information from the Igushik River counting towers was available beginning June 25. Daily counts were above the escapement goal curve from the beginning of tower operations. Managers opened drift gillnet fishing in the Igushik Section beginning June 25. Igushik only openings were announced for June 26 and June 27 but because of generous fishing time in the Nushagak Section, many fishermen chose to rest instead of fishing in Igushik Section. Subsequently, there was some overlap in the openings of both the Nushagak and Igushik Sections allowing fishermen to cross over to the Igushik Section as the Nushagak Section closed. After processor limits were imposed fishing time was liberalized even more, especially for the set gillnets limited by processors. By July 4 with large escapements into the Igushik River and good fishing in Nushagak Section, fishing in Igushik Section was less worthwhile for fishermen and the Igushik Section was opened to continuous fishing for the drift fleet. The set gillnet fishery had been open continuously since June 27 when processors first started having capacity issues. The final escapement into the Igushik River was 514,188 fish exceeding the upper end of the escapement goal range of 300,000 for the fifth consecutive year.

The Nushagak Coho Salmon Management Plan (5 AAC 06.368) established spawning and inriver escapement goals and provides guidance to ADF&G in managing sport, subsistence, and commercial 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 provides for a biological escapement goal of 90,000 spawners and 10,000 additional fish for upriver sport and subsistence harvests. ADF&G no longer operates the sonar camp on the Nushagak River for coho salmon enumeration. Because no escapement information is available, a conservative fishing schedule of three 8-hour periods per week from July 20 until August 6 was used. After the last major buyer ceased operations fishing was open for three 24-hour periods each week. Coho salmon harvest was 35,500, virtually the same as the average harvest over the last 10 years (Appendix A7).

Togiak District

The 2009 inshore sockeye salmon run of 888,226 fish was the sixth largest run to Togiak District in the last 20 years (Appendix A17) and exceeded the preseason forecast by 15% (Table 1). The harvest for the Togiak District was 574,280 sockeye salmon, the ninth largest since 1989. Escapement into Togiak Lake was 313,946 which exceeded the upper end of the escapement goal of 250,000 salmon.

Togiak District is managed differently than other districts in Bristol Bay. This district uses a fixed fishing schedule of 3 days per week in Kulukak Section, 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 has fished in any of the other 4 districts prior to July 24. Conversely, it prohibits permit holders that have fished in Togiak District from fishing in any other Bristol Bay district until July 24.

The 2009 inshore run to Togiak River was forecasted at 770,000 sockeye salmon (Table 1), of which 90% were projected to be 3-ocean fish and the remaining 10% 2-ocean fish (Table 2). With an escapement goal range of 150,000 to 250,000 sockeye salmon for Togiak Lake, approximately 600,000 fish would potentially be available for harvest in Togiak River Section. 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. In 2009, the weekly fishing schedule in Kulukak Section was reduced by a combination of 12 and 24 hours in June and July for Chinook conservation, to reduce harvest of Togiak River bound salmon, and to offer the smaller Kulukak and Kanik River fish populations additional protection. Togiak River Section and western sections (Cape Peirce, Osviak, and Matogak) remained open for regularly scheduled periods.

Commercial fishing opened in Togiak District with a regular weekly schedule on June 1. However, first landings of the 2009 season were not made until June 22 (Table 14). Commercial harvest and effort for this week was far below average with 957 Chinook salmon and 111 deliveries reported at close of fishing on June 27.

The fishery reopened on June 29 and was reduced by 12 hours in Kulukak Section for Chinook salmon conservation. Midnight, June 30 marked the end of active management for Chinook salmon and on Tuesday, July 1, the focus was on sockeye salmon management. Cumulative Chinook salmon harvest through the week of June 29 was 2,492 fish.

Total Chinook salmon harvest for Togiak River Section was 4,161 fish (Table 14), with an additional 256 caught in the remainder of Togiak District (Tables 15). The total number of Chinook salmon caught in Togiak District was 53% of the 10-year average. Weather and pilot availability issues prevented complete aerial surveys to assess escapement. Therefore, districtwide Chinook salmon escapement is not available (Appendix A.20). Figures are not yet available for sport or subsistence harvests.

Commercial fishing for sockeye salmon opened with regularly scheduled fishing periods on June 1, with first deliveries of the season occurring on June 22. Although TDSMP provides for targeting Chinook salmon early in the season, effort largely focuses on sockeye salmon for the entire season. By June 30, district sockeye harvest was 30,542 fish, lower than expected levels but much larger than June harvests of the previous 2 seasons

As mentioned above, reductions of several weekly fishing periods in June and July for Kulukak Section were implemented to achieve Chinook salmon conservation goals, limit harvest of Togiak River bound fish, and to lessen pressure on fish populations found in the small Kulukak and Kanik River systems. Reductions in weekly schedule hours for conservation of Kulukak River sockeye salmon have become common practice in recent years due to a shift in effort to Kulukak Section and due to conservation concerns for Kulukak River sockeye and Chinook salmon stocks. However, challenges of tender support and travel to the area because of high fuel prices, coupled with reductions in fishing time, have kept harvests at or below historical levels.

Commercial fishing closed for the week on July 4 as scheduled. The Kulukak Section fishing schedule was reduced to 60 hours, closing for the week on July 1. Operation of Togiak River counting towers began on July 2 with a partial count of 2,064 sockeye salmon. At this time, daily harvest increased to expected levels but cumulative harvest remained below expected levels likely due to little early season participation. Cumulative harvest continued to increase and reached expected levels after 2 days of harvest above 30,000 on July 10 and 11. This brought Togiak District total harvest to 213,886 at the close of fishing on July 11. Cumulative escapement past the counting towers was just above expected levels at 32,034 fish (Table 21).

Fishing time in the Kulukak Section was once again reduced to 60 hours for the week of July 13. This week showed consistent sockeye salmon passage at Togiak River counting towers, keeping cumulative escapement above expected levels. An aerial survey on July 16 showed fish in the lower river, suggesting that consistent passage would continue or increase into the next week. By the close of fishing on July 17, escapement remained slightly ahead of expected levels with a count of 70,742 fish. Districtwide sockeye salmon harvest remained at average levels this week, bringing the cumulative catch to over 311,335 fish on July 17.

Fishing reopened on July 20 and Kulukak Section was again restricted to 60 hours of fishing but tender availability prevented any fishing in Kulukak Section after the week of July 13. The season concluded in Kulukak Section with a total sockeye salmon harvest of 57,089 fish (Table 15). Although a recent aerial survey suggested a large number of fish in river, concerns of achieving the escapement goal mounted as tower estimates fell from a season high of 8,856 fish on July 16 to 2,364 fish on July 19. These concerns were alleviated when escapement increased to 23,832 on July 22 and then to a season high of 29,142 on July 23. This surge in escapement brought cumulative escapement to 114,032 fish through July 22 and partial counts on July 23 indicated the escapement goal would be achieved.

By regulation, Togiak District opens to all Bristol Bay CFEC salmon permit holders on July 24. This year there was a fair amount of interest in fishing there and a large amount of inquiry as to whether ADF&G would extend fishing into the weekend since July 24 fell on a Friday, typically the end of weekly fishing in Togiak River Section. After receiving partial escapement counts on July 23 and assurance that the escapement goal would be achieved, fishing was extended in Togiak River Section for the maximum allowable time of 48 hours. Both harvest and deliveries did not noticeably increase from previous levels over this period. There are no requirements for

registration after July 24 so increased effort is difficult to assess. Additionally, some permit holders were finishing their season while others were moving into Togiak District.

Since meeting the escapement goal was no longer a concern, the Togiak River Section weekly schedule was once again extended for 48 hours to 9:00 a.m. Sunday, August 2. Harvests remained slightly above average through this week, bringing cumulative harvest to 552,086 fish. The following week participation and harvest levels dropped but catches remained above average. Counting towers ceased operations August 5 after counting a season total of 313,946 sockeye salmon.

In 2009, a second shorebased processor began operations in Togiak. For the first time since 2004, and for only the second time in 10 years, there was a market for coho salmon in Togiak. The week of August 10 brought a downturn in sockeye harvest and the addition of coho salmon to the harvest. Participation was below historical averages for August, but catches per delivery were average through this week and into the week of August 17. Given the low level of participation and harvest, a final emergency order provided a 48-hour extension the week of August 17. A few permit holders continued fishing into the beginning of September, but catches per delivery were low and buying ceased for the season on September 9.

The 2009 sockeye salmon harvest in Togiak District was 574,280 fish, 4% below the preseason forecasted harvest and the ninth largest in the past 20 years (Appendix A3). Total assessed escapement taken from Togiak River counting towers was 313,946 fish. Due to poor survey conditions and flight availability problems, Togiak District was not surveyed to assess salmon escapement in 2009. Although escapement information is incomplete, the total sockeye salmon run ranked sixth among the last 20 years (Appendix A17). Commercial Chinook salmon harvest was 47% of the 20-year average, while harvests of chum and coho salmon were 89% and 57%, 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 2009 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 2008 that were not available for the 2008 annual management report.

REGULATIONS

Permits are required to harvest salmon for subsistence purposes in Bristol Bay. Since 1990, under state regulations, all Alaska State 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.

At its regulatory meeting in Dillingham in December 2006, the Alaska Board of Fisheries 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. The Nushagak commercial district, starting in 1988, has been opened for subsistence fishing by EO during extended commercial closures.

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 2008. As noted, final subsistence harvest estimates for 2009 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 1988 through 2008 plus the recent 5-year average harvests prior to 2009.

2009 BRISTOL BAY HERRING FISHERY

This report reviews stock assessment activities, provides an overview of the Togiak District herring fishery from 1978 to 2008 and summarizes the 2009 season.

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.

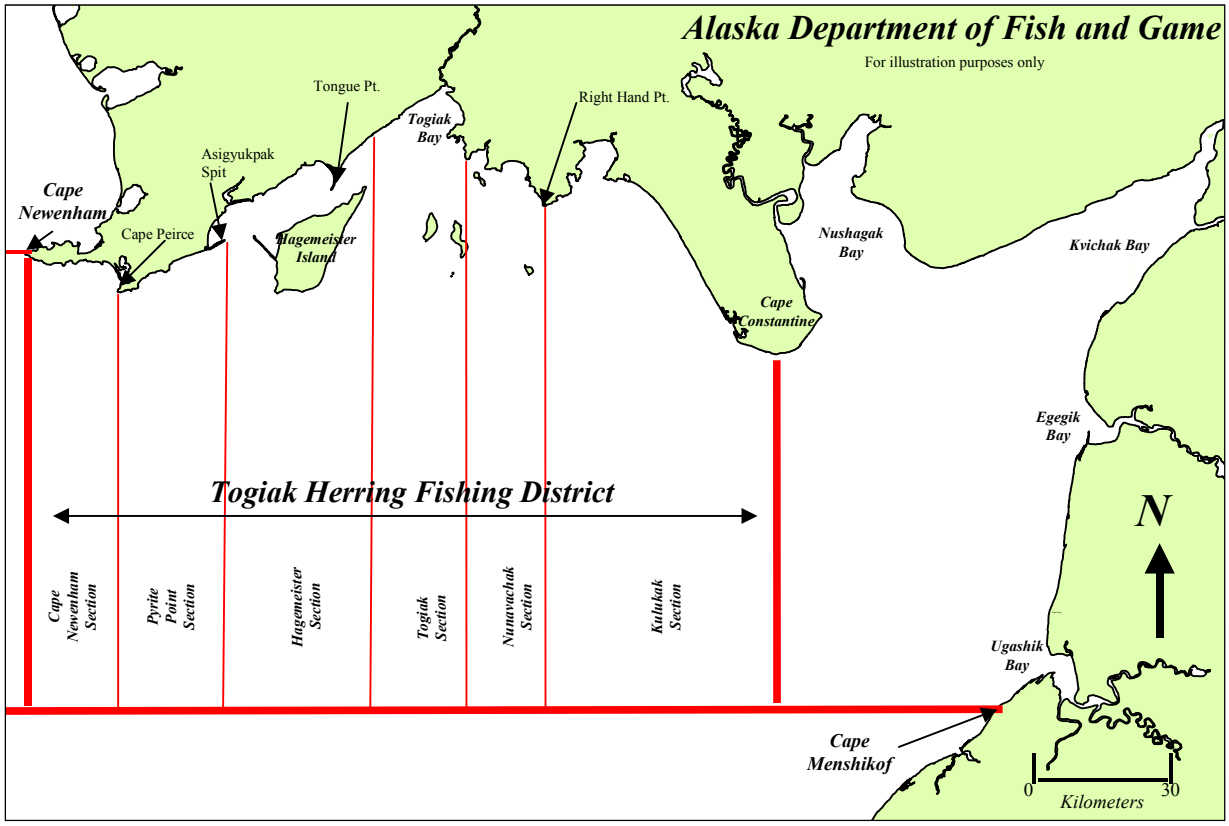

Figure 2.–Togiak Herring District, Bristol Bay.

Pacific herring (*Clupea pallasii*) have been documented throughout Bristol Bay, but the major concentration returns to the Togiak area each spring to spawn and is the focus of herring sac roe and spawn-on-kelp fisheries. In the Togiak District, herring are commercially harvested for sac roe using gillnets and purse seines while herring spawn on rockweed kelp *(Fucus* spp.*)* is harvested by hand.

The herring sac roe fishery began in the Togiak District in 1967, followed by the first fishery for spawn on kelp in 1968. Effort and harvest levels remained low for the first 10 years of the

fishery. Increased interest, favorable market conditions, and additional incentives provided by the Fishery Conservation and Management Act of 1976 (the 200 mile limit) resulted in a rapid expansion of the Togiak herring fishery in 1977.

The Togiak herring fishery is the largest in Alaska. From 1989 to 2008, sac roe harvests averaged approximately 20,000 tons, worth an average of $5.83 million annually (Appendices B2 and B6). Spawn-on-kelp harvests have occurred in only 2 of the last 10 years. Given current market conditions, historic harvests and value are of limited utility when contemplating future harvest or value. In 2009, sac roe harvests brought $2.5 million to permit holders, 79% of the most recent 10-year average. No spawn-on-kelp fishery occurred in 2009.

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 5 years, ADF&G has been converting aerial survey data collection to use Geographic Information Systems (GIS) performing "real-time" data entry and analysis.

The status of the Togiak herring population is considered stable. Annual biomass estimates have ranged from 83,229 tons in 1991 to 193,847 tons estimated in 1993 (Appendix B5). Abundance was estimated to be high in the late 1970s, declined in mid 1980s and remained relatively low and stable through 1991. Biomass levels from 1992 to 1994 increased from 156,957 to 185,412 tons and estimates since 1995 range from 115,155 to 176,288 tons estimated after the 2006 season.

From 1989 to 2009, herring were generally first observed in the district in late April or early May, but were observed entering near shore areas as early as April 19 and as late as June 3. Biomass typically increases rapidly and peaks within 1 to 7 days of the first observation. In recent years, it has been difficult to get good surveys during the peak of the harvest; in 2002, the peak survey occurred after the fishery was completed. The herring run appears to be more protracted with lower peak biomass estimates but with more herring present for a longer period. In general, spawn is first observed any time within 3 days of the first herring observation. Spawning trends differ slightly from those observed for biomass. Spawning in all but 2 years accelerated rapidly, peaked from 1 to 4 days after the first occurrence of spawn and generally continued for a month in less intense "spot" spawns. Small "spot" spawns have been observed as late as June 14.

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. Two major recruitment events have occurred since ADF&G began monitoring the biomass in 1978. The 1977 and 1978 year classes recruited into the fishery in 1982 and 1983 and comprised a

substantial component of the biomass until the early 1990s. Other lesser recruitment events have occurred since that time with the most recent being in 1997, 2001, and 2002, appearing as age-12, -8, and -7 herring, respectively, in the 2009 season.

SAC ROE HERRING FISHERY OVERVIEW

Fishing and Industry Participation

Unlike most herring fisheries in Alaska, the Togiak sac roe fishery is not a limited entry fishery. Gillnets, purse seines, and hand purse seines are legal gear. Since fishing effort is not limited, effort levels can vary substantially each year. Herring market conditions are one of the leading factors influencing effort in a given year, but other factors also influence fleet size. Since the majority of herring permit holders in Togiak participate in other fisheries like Bristol Bay salmon, the health of the salmon market and markets for other fish indirectly affect effort in the herring fishery. Herring prices paid to permit holders the prior year and run timing also affect effort. In the last 8 years, processors have developed cooperative fleets for the purse seine fishery. Under limited markets, processors choose the makeup of their fishing fleets to maximize their efficiency, thereby influencing the number of participants.

Fishing effort in the sac roe fishery increased through the late 1980s, decreased early in the 1990s, then increased again to a peak in 1996, but has generally declined since 1997 (Appendix B1). Gillnet effort increased to 320 vessels in 1989, declined to a low of 75 vessels in 1993, and then peaked in 1996 with 461 vessels and has since declined to a low in 2007 of 25. Purse seine effort increased steadily from 1978 through 1989, when 310 vessels were observed. From 1990 to 1997, the purse seine fleet fluctuated between 200 and 300 vessels, but has declined to less than 100 vessels since 1998. In 2009, the total number of purse seines was 23, an increase from an all time low in 2007 of 21.

Reduction in fleet size has led to the development of cooperative seine fisheries that focus on fish with high quality roe rather than on quantity. Reduced fleet size has led to changes in the way the fishery is managed. Since fishing is less aggressive, managers can allow extended openings leading to increased selectivity and smaller sets.

Industry participation in the fishery peaked between 1979 and 1982, when 33 processors participated in the herring fishery. From 1988 through 1997, 16 to 22 companies purchased herring in Togiak (Appendix B1). Over the past 7 years, industry participation has steadily declined to a low in 2007 of 5 companies. In 2009, processor participation was 6 companies. Processing capacity has also declined from a high of 4,850 tons per day in 1996 to a low of 1,420 tons per day in 2007 and to 2,015 tons per day in 2009.

Gear Specifications

The Alaska Board of Fisheries reduced the legal amount of gear in 1989 to limit harvesting capacity and control problems with waste. Prior to 1989, gillnet length was restricted to 150 fathoms. Each permit holder was restricted to the use of one legal limit of gear, but up to 300 fathoms could be operated from a fishing vessel. Under these gear allowances, lost and abandoned nets accounted for substantial amounts of waste during some years. In 1989, the BOF reduced the legal compliment of gillnet gear to a maximum of 100 fathoms in length per permit holder, restricted the operation from one vessel to 100 fathoms, and granted ADF&G the authority to reduce length to 50 fathoms inseason. The BOF changed this regulation in 1992 when it restricted herring gillnet length to 50 fathoms but granted ADF&G the ability to allow up

to 100 fathoms of gear by emergency order. This change enabled ADF&G to maintain an orderly fishery, helping to ensure roe quality and minimize potential waste. Gillnet depth remains unrestricted.

In October of 1989, the BOF reduced purse seines to 100 fathoms in length and 16 fathoms in depth. In 1995, the BOF further restricted purse seine depth to 625 meshes, of which 600 could be no larger than 1.5 inches. Depth was reduced in 1995 to control harvesting capacity. Adjustments in allowable gear have appeared to control waste and preserve order in the fishery without a substantial reduction in harvesting capacity.

Harvest and Management Performance

The commercial sac roe and spawn-on-kelp harvests in the Togiak District have been regulated by emergency order since 1981. From 1981 through 1987, informal policies directed ADF&G to ensure that minimum threshold biomass levels were observed before opening the herring fishery and to manage the fishery so that exploitation did not exceed 20%. In 1988, the BOF incorporated the threshold and exploitation rate policies into the Bering Sea Herring Fishery Management Plan (5 AAC 27.060) for Togiak District and other Bering Sea herring fisheries. Herring biomass in the Togiak District has been estimated at levels well above threshold requirements since 1981.

The average annual exploitation rate for the last 20 years was 16.6% but for the last 10 years has been 15.6% (Appendix B2). Annual exploitation has ranged from 21.2% to 11.5% and has not exceeded 20% since 2001. Although the sac roe, spawn-on-kelp, and Dutch Harbor food and bait fisheries take Togiak herring, only sac roe harvests were used in calculating exploitation rates from 1981 to 1983. Estimates of herring biomass equivalent to spawn-on-kelp harvests and harvests in the Dutch Harbor fishery were not included when calculating exploitation rates until 1984 and 1988.

Herring purse seine and gillnet sac roe harvests are managed for allocation guidelines set forth in the Bristol Bay Herring Management Plan (BBHMP) (5 AAC 27.865). This plan states that, before opening the sac roe fishery, 1,500 short tons must be set aside for the spawn-on-kelp fishery and 7% of the remaining available harvest must be allocated to the Dutch Harbor food and bait fishery. After the spawn-on-kelp and the Dutch Harbor harvests are subtracted, the remaining harvestable surplus is allocated to the Togiak sac roe fishery: 30% of the harvestable surplus to the gillnet fleet, and 70% to the purse seine fleet. From 1988 through 2000, these percentages were set at 25% gillnet and 75% purse seine. The BOF modified these allocation percentages to the current ratio in 2001. To achieve gillnet and purse seine ratios, ADF&G adjusts fishing time and area for each gear type.

The management plan was modified again by the BOF in December 2003. The BOF allowed inseason allocation management to be uncoupled after each gear type had harvested 80% of its allocation. The other change allowed up to 50% of the spawn-on-kelp allocation to be reallocated to the sac roe fishery if it was not harvested in a spawn-on-kelp fishery. In 2006, the BOF again changed the management plan and allowed the inseason allocation management to be uncoupled when both gear types had harvested 50% of their respective quotas.

Management Guidelines for Commercial Herring Sac Roe Fisheries (5 AAC 27.059) state ADF&G may manage sac roe fisheries to minimize harvest of recruit size herring and to enhance product value by opening areas in which sampling has demonstrated high herring roe content and

large herring size. The BBHMP also states that the primary objective in the sac roe fishery is to prosecute an orderly, manageable fishery while striving for the highest level of product quality and a minimum of waste. Given these regulations and comments from industry, the department considers maximizing quality and value primary objectives in the Togiak herring fishery.

In 1992, over 20,000 tons of herring were harvested by purse seines in one 20-minute period. This magnitude of harvest from a single opening, combined with a limited processing capacity, resulted in holding times up to 7 days and large-scale deterioration of flesh and roe quality. The poor product quality resulting from the 1992 harvest, coupled with increasing market demands for high quality roe, compelled ADF&G to recognize quality problems associated with extended holding times of 3 days or longer. Limiting individual harvests to less than 3 days of processing capabilities became a management objective after 1992.

From 1992 until 2000, ADF&G limited harvests by carefully controlling the open area and duration of each purse seine opening. Since 2000, the fishery has been somewhat more self-regulating in that processors have smaller fleets and are more restrictive about how long they will hold herring before processing. The reduced processing capacity makes it impossible for the whole quota to be processed in less than 10 days.

Although controlling harvest used to be the major management concern, 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 must guard against large harvests that could exceed the fishery exploitation rate. However in 2009, with one of the lowest processing capacities in recent history, it was likely that there would be some portion of the quota left unharvested.

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.

SPAWN-ON-KELP FISHERY OVERVIEW

Similar to the sac roe fishery, the spawn-on-kelp harvest in the Togiak District has been regulated by emergency order since 1981. Since 1984, the spawn-on-kelp fishery has been managed under guidelines provided in the Togiak District Herring Spawn on Kelp Management Plan (5 AAC 27.834). The plan essentially provides this fishery an allocation of 350,000 lbs of product, roughly equivalent to 1,500 tons of herring. The plan also directs ADF&G to 1) rotate harvest areas (Figure 3) on a 2 to 3 year basis, 2) ensure product quality, and 3) include the herring equivalent to the spawn-on-kelp harvest when calculating exploitation.

Fishing effort in the spawn-on-kelp fishery increased steadily since its inception, and peaked at 532 participants in 1991 (Appendix B4). The fishery became limited to interim use and permanent permit holders in 1990. Following the 1991 season, the BOF limited the role of non-permit holders in the spawn-on-kelp fishery to assisting with transporting kelp after the period closure. By 1993, most permits issued for this fishery became permanent, stabilizing the number of permits at approximately 300.

The fishery was open from 1986 to 2003, but closed from 1997 to 2001, and has been closed since 2004. Actual harvests exceeded the 350,000 lb guideline harvest level by more than 10% in 6 years and fell short by more than 10% in 4 years (Appendix B7). For the other years in which a fishery occurred, actual harvests were within 10% of the guideline. The 2 to 3 year rotation schedule for kelp harvest areas was adhered to in all years except 1987. In 1987, area K-9 was opened after harvest in area K-10 fell short of the harvest guideline. The western half of area K-9 was opened the previous year.

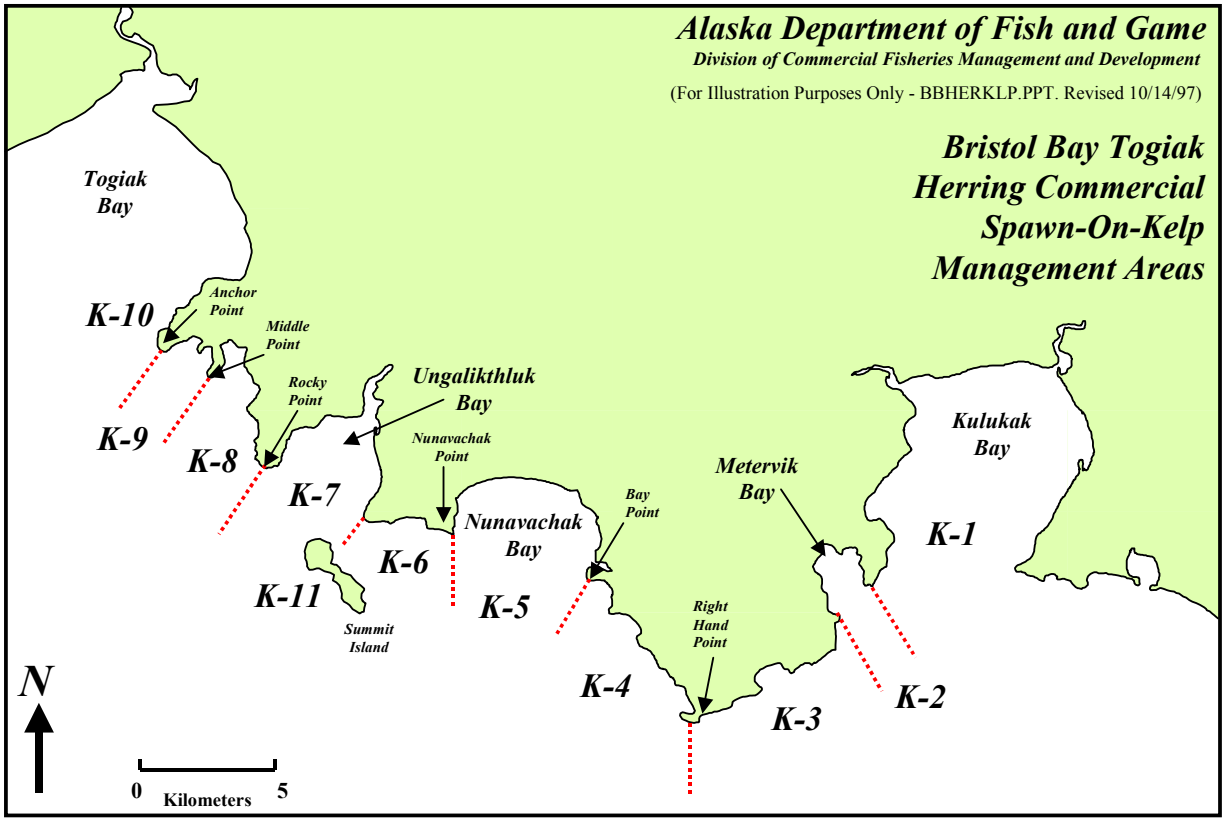

Figure 3.–Spawn-on-kelp management areas (K-1 through K-11), Togiak District, Bristol Bay.

To ensure product quality, ADF&G, industry representatives, and permit holders collect spawn-on-kelp samples to display at a public meeting each season, usually after the peak of herring spawning has occurred. Management decisions are based on comments from industry and users regarding sample quality.

2009 Season Summary

Biomass Estimation

Aerial surveys of the Togiak District began May 4, 2009. Herring were first sighted in the district on the morning of May 13 during a survey by ADF&G staff. On May 15, another survey was flown but there was very little increase in herring biomass from the May 13 observations. On May 16 department staff documented 48,000 tons of herring under average survey conditions. On May 19, poor weather allowed only a partial survey with no herring observed. Pilot availability and poor weather prevented another survey until May 22. Over this time, reports from spotter pilots indicated a large biomass was present in western parts of the district.

Under good survey conditions on May 22, 76,000 tons of herring and 9 miles of spawn were documented. Conditions remained good for surveys on May 24 and May 26, when 94,000 and 54,000 tons of herring, respectively, were observed. Over the course of the season, 11 miles of spawn were documented; this did not include spawn reported by spotter pilots on days we did not fly.

Age Composition

Five thousand four hundred (5,400) herring were sampled for age, size, and sex information between May 19 and May 26, 2009 from the commercial fishery. Samples were collected from the commercial purse seine and commercial gillnet fishery. Sampling in 2009 provided improved spatial and temporal coverage over that of 2008.

Two age cohorts dominated the Togiak commercial fisheries (purse seine and gillnet) in 2009. The younger cohort was composed of age-6 to -8 fish and the older of age-11 to -12 fish. Together, these cohorts comprised 61% of the harvest biomass. Mean length and weight from the purse seine fishery samples were 274 mm and 321 g, while fish sampled from the gillnet fishery averaged 299 mm and 435 g. The sex composition was 50% male and 50% female in the commercial fishery. All these estimates should be considered preliminary.

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 Alaska Board of Fisheries in December 2006. The plan specifies a maximum allowable exploitation rate of 20% and allocates the harvestable surplus among all the fisheries harvesting the Togiak herring stock. The 2009 preseason forecasted biomass was 121,800 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, 1,600 tons for the Dutch Harbor food and bait fishery, and the remaining 21,260 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 (forecast harvest of 14,882 tons in 2009) and 30% of the removal is taken by gillnets (forecast harvest of 6,378 tons in 2009).

The Bristol Bay Herring Management Plan and other regulations direct the department 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 2009 season, management staff again planned to allow long duration seine openings over a large area of the district and to let the processors limit harvest for their individual fleets based on processing capacity. Input from the fleet and industry indicated that this would slow the "race for fish" and allow for improved quality and value.

During the winter of 2008–2009, climatic conditions were colder than the recent average. There was a long cold spell in southwestern Alaska beginning in February and extending well into April and the sea surface still had ice offshore of Cape Constantine through April. Water temperatures in the Bering Sea and in Togiak Bay were colder than recent historical averages as well.

To predict spawning timing for Togiak herring, the department used a temperature model based on sea surface temperatures from Unimak Pass. These temperatures predicted the first spawn would be on May 3, with the first harvest occurring on May 3. Air temperature was colder in

April than expected, and the sea surface remained ice covered with temperatures colder than average.

Department staff polled processing companies prior to the season to assess processing capacity for the 2009 season and to inquire about additional concerns or issues. The poll indicated that one less company would participate in the 2009 Togiak herring fishery than in the 2008 season. The processing capacity for 2009 was estimated to be 2,015 tons per day. There were no major concerns preseason, and no need for a preseason teleconference.

Purse Seine Summary

The Togiak purse seine fishery opened at 8:00 p.m. on May 16 after one test fish sample. Due to the small number of boats and processors participating in the fishery, there was no need to have a department test fishery. Instead, all participants could make sets and determine whether the fish were of marketable quality at their own pace and by their own standards.

The first purse seine opening was 98 hours. The first harvest did not occur until late on May 19. Fishing was extended in 24 to 72 hour blocks until 10:00 p.m. May 26. Harvest during this time was orderly but fish size began to decrease more sharply than expected. The average size of fish caught on May 19 was 428 grams; by May 22 the average was 378 grams, and on May 23 it dropped again to 319 grams. The average size of purse seine fish continued to decrease and averaged 230 grams on May 25. The preseason forecast indicated that a large group of age 5 fish would be present in Togiak in 2009, so the decrease in size was expected. As fish size decreased, searching for fish of the best quality occurred resulting in increased number of wrapped and released sets. This activity increased on May 25 and continued on May 26. Reports also indicated that more spawned out herring were being encountered and that overall fish quality, size and roe percentage was decreasing. The average roe percentage for fish caught on May 26 was 9.4%. The purse seine fishery was extended on May 25, from 10:00 p.m. until 10:00 p.m. May 26. On May 26, the decision was made to wait until harvest information was received on the morning of May 27 before any additional fishing time was allowed. On May 27, department staff concluded from decreasing roe percentages, smaller size fish harvested over several days and an increasing number of sets being wrapped and released, that the best course of action was to close the purse seine fishery for the remainder of the 2009 season

The purse seine fishery harvest was 12,967 tons of herring with an average weight of 348 grams and an average roe percentage of 9.2%. Approximately 2,400 tons of herring, 17% of the guideline harvest, remained unharvested.

Gillnet Summary

The Togiak gillnet fishery was opened at 8:00 p.m. May 16 until further notice. There was no test fishing prior to the opening, 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 19. Harvest continued at a steady pace through May 22. Harvest on May 23 was 352 tons and decreased until the last fisherman quit on May 29. After the harvest of May 24, the gillnet fleet had harvested 50% of its quota and the allocation no longer needed to be managed inseason. The gillnet fishery remained open until it closed by regulation at 11:59 p.m. May 31. The final harvest was 4,140 tons, or 65% of the quota.

Spawn on Kelp

No companies registered to buy herring spawn-on-kelp in 2009, therefore there were no openings and no commercial harvest.

EXPLOITATION

The 2009 herring fisheries were managed for a maximum exploitation rate of 20% of the preseason biomass estimate. The purse seine harvest was 12,967 tons, with an average weight of 348 grams and an average roe percentage of 9.2% (Table 30). The gillnet harvest was 4,140 tons, with an average weight of 434 grams and an average roe percentage of 9.6%, making the combined harvest 17,107 tons. The Dutch Harbor food and bait fishery harvested 1,335 tons of herring, thus the total harvest for 2009 is estimated to be 18,442 tons. Based on the preseason biomass estimate of 121,800 tons, the 2009 exploitation rate would be approximately 15%.

EXVESSEL VALUE

The projected exvessel value of the 2009 Togiak herring fishery is approximately $2.5 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, 2009.

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		5,296	5,545	4	2,000-10,000	2,266	2,648	3,279	19
Alagnak River		2,031	2,689	24	320 minimum	971	953	1,718	45
Naknek River		4,787	4,692	-2	800-1,400	1,169	3,539	3,523	0
	Total	12,114	12,926	6	6,970-11,600	4,406	7,140	8,520	16
EGEGIK DISTRICT		9,590	12,728	25	800-1,400	1,146	8,193	11,582	29
UGASHIK DISTRICT		2,377	3,917	39	500-1,200	1,364	1,449	2,553	43
NUSHAGAK DISTRICT									
Wood River		5,013	6,447	22	700-1,500	1,319	3,758	5,128	27
Igushik River		2,255	931	-142	150-300	514	1,960	416	-371
Nushagak-Mulchatna		1,659	2,611	36	340-760	484	1,058	2,127	50
	Total	8,927	9,989	11	1,190-2,560	2,317	6,776	7,671	12
TOGIAK DISTRICT		769	888	13	120-270	314	595	574	-4
TOTAL BRISTOL BAY		33,777	40,448	16	9,560-16,960	9,547	24,153	30,900	22

[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, 2009.

District and	2-Ocean			3-Ocean			
River System	1.2 (2005)	2.2 (2004)	Total	1.3 (2004)	2.3 (2003)	Total	Total
NAKNEK-KVICHAK DISTRICT							
Kvichak River	2,050	1,745	3,795	1,465	36	1,501	5,296
Alagnak River	695	14	709	1,274	48	1,322	2,031
Naknek River	1,293	587	1,880	2,443	464	2,907	4,787
Total	4,038	2,346	6,384	5,182	548	5,730	12,114
EGEGIK DISTRICT	1,690	1,738	3,428	3,853	2,309	6,162	9,590
UGASHIK DISTRICT	681	280	961	1,395	21	1,416	2,377
NUSHAGAK DISTRICT							
Wood River	2,184	106	2,290	2,680	43	2,723	5,013
Igushik River	505	85	590	1,640	25	1,665	2,255
Nushagak River	255	2	257	1,221	28	1,249	1,659
Total	2,944	193	3,137	5,541	96	5,637	8,927
TOGIAK DISTRICT	56	23	79	648	42	690	769
TOTAL BRISTOL BAY [a]							
Number	9,409	4,580	13,989	16,619	3,016	19,635	33,777
Percent	28	14	41	49	9	58	100

[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, 2009.

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	921	2,278	3,199	2,204	125	2,329	9	5,545
	Percent	16.6	41.1	57.7	39.7	2.3	42.0	0.2	99.7
Alagnak River									
	Number	692	197	889	1,594	197	1,791	52	2,689
	Percent	25.7	7.3	33.1	59.3	7.3	66.6	0.2	99.9
Naknek River									
	Number	1,338	844	2,182	1,769	513	2,282	162	4,692
	Percent	28.5	18.0	46.5	37.7	10.9	48.6	3.5	98.6
Total	Number	2,951	3,319	6,270	5,567	835	6,402	223	12,926
	Percent	22.8	25.7	48.5	43.1	6.5	49.5	1.7	99.8
EGEGIK DISTRICT									
	Number	639	6,152	6,791	3,566	2,223	5,789	69	12,728
	Percent	5.0	48.3	53.4	28.0	17.5	45.5	0.5	99.4
UGASHIK DISTRICT									
	Number	870	1,318	2,188	1,518	143	1,661	12	3,917
	Percent	22.2	33.6	55.9	38.8	3.7	42.4	0.3	98.6
NUSHAGAK DISTRICT									
Wood River									
	Number	2,503	119	2,622	3,659	91	3,750	27	6,447
	Percent	38.8	1.8	40.7	56.8	1.4	58.2	0.4	98.8
Igushik River									
	Number	166	10	176	735	16	751	2	931
	Percent	17.8	1.1	18.9	78.9	1.7	80.7	0.2	99.8
Nushagak River									
	Number	417	8	425	1,828	35	1,863	237	2,611
	Percent	16.0	0.3	16.3	70.0	1.3	71.4	9.1	96.7
Total	Number	3,086	137	3,223	6,222	142	6,364	266	9,989
	Percent	30.9	1.4	32.3	62.3	1.4	63.7	2.7	98.6
TOGIAK DISTRICT [c]									
	Number	313	48	361	503	14	517	6	888
	Percent	35.2	5.4	40.7	56.6	1.6	58.2	0.7	99.5
TOTAL BRISTOL BAY [d]									
	Number	7,859	10,974	18,833	17,376	3,357	20,733	576	40,446
	Percent	19.4	27.1	46.6	43.0	8.3	51.3	1.4	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, 2009.

District and River System		Catch	Escapement		Total Run
NAKNEK-KVICHAK DISTRICT					
Kvichak River		3,278,651	2,266,140		5,544,791
Alagnak River		1,717,905	970,818		2,688,723
Naknek River		3,522,789	1,169,466		4,692,255
	Total	8,519,345	4,406,424		12,925,769
EGEGIK DISTRICT		11,582,050	1,146,276		12,728,326
UGASHIK DISTRICT		2,553,045	1,364,550	[a]	3,917,595
NUSHAGAK DISTRICT					
Wood River		5,127,548	1,319,232		6,446,780
Igushik River		416,321	514,188		930,509
Nushagak-Mulchatna		2,126,884	484,149		2,611,033
	Total	7,670,753	2,317,569		9,988,322
TOGIAK DISTRICT					
Togiak Lake			313,946		313,946
Togiak River/Tributaries		517,191		[b]	517,191
Kulukak System		57,089		[b]	57,089
Other Systems [c]		0		[b]	0
	Total	574,280	313,946		888,226
TOTAL BRISTOL BAY		30,899,473	9,548,765		40,448,238

[a] Egegik River Tower count; does not include 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, 2009.

Date	Naknek R. Mouth	Pederson Point	Cutbank & Graveyard	Gravel Spit	Half Moon Bay	Middle Naknek	Johnston Hill	Division Buoy	Ships Anchorage	Deadmans Sands

Note: No test fishing in 2009.

Table 6.–Summary of sockeye salmon test fishing indices in the Nushagak District, by index area and date, Bristol Bay, 2009.

Date	Hanson Point	Across Hanson Pt	Tule Point	Picnic Point	Grassy Island
6/18	0	0	133	0	0
	0	261	162	0	0
6/19	0	0	800	4,602	257
	0	0	130	0	0
6/20	3,273	0	1,051	132	5,811
	126	134	1,646	0	0
6/21	1,815	816	2,654	417	0
	635	1,551	1,444	0	0
6/21	896	1,380	1,978	262	1,497
	259	1,394	2,369	0	0
6/22	5,630	823	1,212	0	128
	3,867	2,411	1,106	0	0
6/22	2,182	1,483	4,105	0	9,373
	555	2,509	9,143	0	0
6/23	2,652	4,311	4,619	259	719
	4,655	6,723	1,315	0	0
6/23	1,903	271	8,393	606	10,008
	247	271	8,457	0	0
6/24	32,132	5,902	1,492	0	0
	7,633	9,198	3,949	0	0
6/24	1,452	881	6,106	0	260
	526	674	4,645	0	0
6/25	9,164	2,008	0	0	365
	3,247	2,438	630	0	0
6/25	2,380	2,065	5,703	0	0
	1,270	1,776	3,692	0	0
6/26	5,724	1,794	758	0	0
	3,036	3,054	649	0	0
6/26	943	1,348	2,340	121	0
	812	1,437	4,301	0	0
6/27	1,500	821	0	0	0
	1,106	1,216	128	0	0
6/28	10,080	2,021	1,680	126	3,916
	6,881	1,932	2,700	0	0
6/29	4,252	1,051	1,690	0	523
	3,627	2,705	2,079	0	0
6/30	913	788	2,098	261	1,800
	3,916	971	3,050	0	0
7/1	1,161	1,976	3,524	1,198	1,108
	799	2,432	4,539	0	0
7/2	244	3,400	980	0	0
	271	3,216	1,611	0	0

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 AM tide; the second during PM tide. Blank cells represent no test fishing at that location and time. Blank cells indicate no data.

Table 7.–Commercial fishing emergency orders, by district and statistical area, Bristol Bay, 2009.

Number[a]	Start Date	Start Time		End Date	End Time	Effective time	
Naknek/Kvichak District							
Drift Net							
AKN.48	July 04	10:00 a.m.	to	July 04	7:00 p.m.	9.0 hours	
AKN.61	July 08	1:30 p.m.	to	July 08	9:30 p.m.	8.0 hours	
AKN.64	July 09	2:00 p.m.	to	July 09	11:00 p.m.	8.0 hours	
AKN.67	July 10	3:00 p.m.	to	July 10	11:00 p.m.	8.0 hours	
AKN.80	July 20	9:00 a.m.					[b]
AKN.81	July 24	9:00 a.m.	to	July 27	9:00 a.m.	72.0 hours	
Set Net							
AKN.01	June 1	9:00 a.m.	to	July 24	9:00 a.m.		[b,c]
AKN.18	June 24	1:00 p.m.	to	June 24	8:00 p.m.	7.0 hours	
AKN.20	June 25	2:30 a.m.	to	June 25	9:30 p.m.	19.0 hours	
AKN.22	June 26	3:00 a.m.	to	June 26	10:00 p.m.	19.0 hours	
AKN.26	June 27	4:00 a.m.	to	June 28	12:00 a.m.	20.0 hours	
AKN.30	June 28	5:30 p.m.	to	June 29	1:30 a.m.	8.0 hours	
AKN.33	June 29	5:30 a.m.	to	June 29	2:00 p.m.	8.5 hours	
AKN.36	June 29	2:00 p.m.	to	June 30	2:30 p.m.	24.5 hours	
AKN.39	June 30	2:30 p.m.	to	July 01	4:00 p.m.	25.5 hours	
AKN.42	July 01	4:00 p.m.	to	July 02	5:00 p.m.	25.0 hours	
AKN.45	July 02	5:00 p.m.					[d]
AKN.78	July 25	9:00 a.m.	to	July 28	9:00 a.m.	72.0 hours	
Naknek Section							
Drift Net							
AKN.01	June 1	9:00 a.m.	to	July 24	9:00 a.m.		[b,c]
AKN.18	June 24	1:00 p.m.	to	June 24	8:00 p.m.	7.0 hours	
AKN.20	June 25	2:00 p.m.	to	June 25	9:30 p.m.	7.5 hours	
AKN.22	June 26	2:00 p.m.	to	June 26	10:00 p.m.	8.0 hours	
AKN.26	June 27	3:00 p.m.	to	June 28	12:00 a.m.	9.0 hours	
AKN.30	June 28	5:30 p.m.	to	June 29	1:30 a.m.	8.0 hours	
AKN.33	June 29	5:30 a.m.	to	June 29	2:00 p.m.	8.5 hours	
AKN.36	June 29	6:00 p.m.	to	June 30	4:00 a.m.	10.0 hours	
AKN.36	June 30	6:00 a.m.	to	June 30	2:30 p.m.	8.5 hours	
AKN.39	June 30	7:00 p.m.	to	July 01	5:00 a.m.	10.0 hours	
AKN.39	July 01	7:00 a.m.	to	July 01	4:00 p.m.	9.0 hours	
AKN.42	July 01	8:00 p.m.	to	July 02	6:00 a.m.	10.0 hours	
AKN.42	July 02	8:00 a.m.	to	July 02	5:00 p.m.	9.0 hours	
AKN.45	July 02	9:00 p.m.	to	July 03	7:00 a.m.	10.0 hours	
AKN.45	July 03	9:00 a.m.	to	July 03	6:00 p.m.	9.0 hours	
AKN.48	July 03	10:00 p.m.	to	July 04	8:00 a.m.	10.0 hours	
AKN.50	July 04	11:00 p.m.	to	July 05	9:00 a.m.	10.0 hours	
AKN.50	July 05	11:00 a.m.	to	July 05	7:00 p.m.	8.0 hours	
AKN.52	July 06	12:00 a.m.	to	July 06	10:00 a.m.	10.0 hours	
AKN.52	July 06	12:00 p.m.	to	July 06	8:00 p.m.	8.0 hours	
AKN.57	July 07	1:00 a.m.	to	July 07	11:00 a.m.	10.0 hours	
AKN.57	July 07	1:00 p.m.	to	July 07	9:00 p.m.	8.0 hours	
AKN.60	July 08	1:30 a.m.	to	July 08	11:30 a.m.	10.0 hours	

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Number[a]	Start Date	Start Time		End Date	End Time	Effective time
Naknek Section						
Drift Net						
AKN.60	July 08	1:30 p.m.	to	July 08	9:30 p.m.	8.0 hours
AKN.64	July 09	2:00 a.m.	to	July 09	12:00 p.m.	10.0 hours
AKN.67	July 10	3:00 a.m.	to	July 10	1:00 p.m.	10.0 hours
AKN.70	July 11	3:00 a.m.	to	July 11	1:00 p.m.	10.0 hours
AKN.70	July 11	4:00 p.m.	to	July 12	12:00 a.m.	8.0 hours
AKN.73	July 12	3:00 a.m.	to	July 12	1:00 p.m.	10.0 hours
AKN.73	July 12	4:00 p.m.	to	July 13	1:00 a.m.	9.0 hours
AKN.76	July 13	4:00 a.m.	to	July 13	2:00 p.m.	10.0 hours
AKN.76	July 13	5:00 p.m.	to	July 14	2:00 a.m.	9.0 hours
AKN.78	July 14	5:00 a.m.	to	July 14	3:00 p.m.	10.0 hours
AKN.78	July 14	6:00 p.m.	to	July 15	3:00 a.m.	9.0 hours
AKN.80	July 15	5:00 a.m.	to	July 20	9:00 a.m.	124.0 hours
AKN.81	July 24	9:00 a.m.	to	July 27	9:00 a.m.	72.0 hours
Egegik District						
Drift Net						
AKN.02	June 01	9:00 a.m.	to	June 12	9:00 a.m.	
AKN.05	June 15	4:15 a.m.	to	June 15	1:15 p.m.	9.0 hours
AKN.06	June 17	5:15 a.m.	to	June 17	2:15 p.m.	9.0 hours
AKN.08	June 18	6:15 a.m.	to	June 18	3:15 p.m.	9.0 hours
AKN.09	June 19	7:15 a.m.	to	June 19	3:15 p.m.	8.0 hours
AKN.10	June 20	8:15 a.m.	to	June 20	2:15 p.m.	6.0 hours
AKN.13	June 21	9:15 a.m.	to	June 21	3:15 p.m.	6.0 hours
AKN.14	June 22	10:00 a.m.	to	June 22	4:00 p.m.	6.0 hours
AKN.15	June 23	11:00 a.m.	to	June 23	5:00 p.m.	6.0 hours
AKN.16	June 24	12:00 p.m.	to	June 24	5:00 p.m.	5.0 hours
AKN.19	June 25	1:30 p.m.	to	June 25	6:30 p.m.	5.0 hours
AKN.21	June 26	2:30 p.m.	to	June 26	7:30 p.m.	5.0 hours
AKN.23	June 26	7:30 p.m.	to	June 26	9:30 p.m.	2.0 hours
AKN.23	June 27	2:45 a.m.	to	June 27	9:45 a.m.	7.0 hours
AKN.23	June 27	3:45 p.m.	to	June 27	11:45 p.m.	7.0 hours
AKN.28	June 28	4:00 a.m.	to	June 28	11:00 a.m.	7.0 hours
AKN.28	June 28	5:00 p.m.	to	June 28	11:59 a.m.	7.0 hours
AKN.31	June 29	4:45 a.m.	to	June 29	10:45 p.m.	6.0 hours
AKN.31	June 29	5:00 p.m.	to	June 29	10:00 p.m.	5.0 hours
AKN.34	June 30	6:00 a.m.	to	June 30	10:00 a.m.	4.0 hours
AKN.37	June 30	5:30 p.m.	to	July 01	1:30 a.m.	8.0 hours
AKN.40	July 02	7:15 a.m.	to	July 02	3:15 p.m.	8.0 hours
AKN.40	July 02	8:30 p.m.	to	July 03	4:30 a.m.	8.0 hours
AKN.43	July 03	8:45 a.m.	to	July 03	1:45 p.m.	5.0 hours
AKN.46	July 03	10:15 p.m.	to	July 04	2:15 a.m.	4.0 hours
AKN.46	July 04	8:45 a.m.	to	July 04	1:45 p.m.	5.0 hours
AKN.51	July 04	10:30 p.m.	to	July 05	6:00 a.m.	7.5 hours
AKN.51	July 05	10:15 a.m.	to	July 05	5:15 p.m.	7.5 hours
AKN.53	July 06	10:30 a.m.	to	July 06	4:30 p.m.	6.0 hours
AKN.53	July 06	6:30 p.m.	to	July 09	11:30 p.m.	5.0 hours

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Number[a]	Start Date	Start Time		End Date	End Time	Effective time	
Egegik District							
Drift Net							
AKN.55	July 07	12:30 p.m.	to	July 07	7:0 p.m.	7.0 hours	
AKN.58	July 08	12:45 p.m.	to	July 08	5:45 p.m.	5.0 hours	
AKN.62	July 09	1:15 p.m.	to	July 09	7:15 p.m.	6.0 hours	
AKN.65	July 10	6:00 a.m.	to	July 10	9:00 a.m.	3.0 hours	
AKN.65	July 10	2:15 p.m.	to	July 10	9:15 p.m.	7.0 hours	
AKN.68	July 11	1:45 a.m.	to	July 11	9:45 a.m.	8.0 hours	
AKN.68	July 11	2:45 p.m.	to	July 11	10:45 p.m.	8.0 hours	
AKN.71	July 12	3:15 p.m.	to	July 12	10:15 p.m.	7.0 hours	
AKN.74	July 13	4:30 p.m.	to	July 14	10:30 a.m.	6.0 hours	
AKN.77	July 14	3:45 a.m.	to	July 14	11:45 a.m.	8.0 hours	[e]
AKN.77	July 14	4:45 p.m.	to	July 15	12:45 a.m.	8.0 hours	
AKN.79	July 15	4:00 a.m.		July 24	9:00 a.m.	221.0 hours	[b]
AKN.81	July 24	9:00 a.m.	to	July 27	9:00 a.m.	72.0 hours	
Set Net							
AKN.02	June 01	9:00 a.m.	to	June 12	9:00 a.m.		
AKN.05	June 15	4:15 a.m.	to	June 15	1:15 p.m.	9.0 hours	
AKN.06	June 17	5:15 a.m.	to	June 17	2:15 p.m.	9.0 hours	
AKN.08	June 18	6:15 a.m.	to	June 18	3:15 p.m.	9.0 hours	
AKN.09	June 18	8:00 p.m.	to	June 19	4:00 a.m.	8.0 hours	
AKN.09	June 19	7:15 a.m.	to	June 19	3:15 p.m.	8.0 hours	
AKN.10	June 20	8:15 a.m.	to	June 20	4:15 p.m.	8.0 hours	
AKN.13	June 21	9:15 a.m.	to	June 21	5:15 p.m.	8.0 hours	
AKN.14	June 22	10:00 a.m.	to	June 22	6:00 p.m.	8.0 hours	
AKN.15	June 23	11:00 a.m.	to	June 23	7:00 p.m.	8.0 hours	
AKN.16	June 24	12:00 p.m.	to	June 24	8:00 p.m.	8.0 hours	
AKN.19	June 25	1:30 p.m.	to	June 25	9:30 p.m.	8.0 hours	
AKN.21	June 26	2:15 a.m.	to	June 26	10:15 p.m.	8.0 hours	
AKN.21	June 26	2:30 p.m.	to	June 26	10:30 p.m.	8.0 hours	
AKN.23	June 27	2:45 a.m.	to	June 27	10:45 a.m.	8.0 hours	
AKN.23	June 27	3:45 p.m.	to	June 27	11:45 p.m.	7.0 hours	
AKN.28	June 28	4:00 a.m.	to	June 28	12:00 p.m.	8.0 hours	
AKN.28	June 28	5:00 p.m.	to	June 29	1:00 a.m.	8.0 hours	
AKN.31	June 29	4:45 a.m.	to	June 29	12:45 p.m.	8.0 hours	
AKN.34	June 30	5:30 a.m.	to	June 30	1:30 p.m.	8.0 hours	
AKN.34	June 30	6:30 p.m.	to	July 01	2:30 a.m.	8.0 hours	
AKN.37	July 01	6:15 a.m.	to	July 01	2:15 p.m.	8.0 hours	
AKN.37	July 01	7:45 p.m.	to	July 02	3:45 a.m.	8.0 hours	
AKN.40	July 02	7:15 a.m.	to	July 02	3:15 p.m.	8.0 hours	
AKN.40	July 02	8:30 p.m.	to	July 03	4:30 a.m.	8.0 hours	
AKN.43	July 03	7:45 a.m.	to	July 03	3:45 p.m.	8.0 hours	
AKN.46	July 03	9:45 p.m.	to	July 04	5:45 a.m.	8.0 hours	
AKN.46	July 04	8:45 a.m.	to	July 04	4:45 p.m.	8.0 hours	
AKN.51	July 04	10:00 p.m.	to	July 05	6:00 a.m.	8.0 hours	
AKN.51	July 05	9:45 a.m.	to	July 05	5:45 p.m.	8.0 hours	

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Table 7.–Page 4 of 8.

Number[a]	Start Date	Start Time		End Date	End Time	Effective time	
Egegik District							
Set Net							
AKN.53	July 05	10:30 p.m.	to	July 06	6:30 a.m.	8.0 hours	
AKN.53	July 06	10:00 a.m.	to	July 06	6:00 p.m.	8.0 hours	
AKN.55	July 06	11:30 p.m.	to	July 07	7:30 a.m.	8.0 hours	
AKN.55	July 07	12:00 p.m.	to	July 07	8:00 p.m.	8.0 hours	
AKN.58	July 08	12:15 p.m.	to	July 08	8:15 p.m.	8.0 hours	
AKN.62	July 09	1:45 a.m.	to	July 09	9:45 a.m.	8.0 hours	
AKN.62	July 09	1:00 p.m.	to	July 09	9:00 p.m.	8.0 hours	
AKN.65	July 10	1:15 a.m.	to	July 10	9:15 a.m.	8.0 hours	
AKN.65	July 10	1:45 p.m.	to	July 10	9:45 p.m.	8.0 hours	
AKN.68	July 11	1:45 a.m.	to	July 11	9:45 a.m.	8.0 hours	
AKN.68	July 11	2:45 p.m.	to	July 11	10:45 p.m.	8.0 hours	
AKN.71	July 12	2:30 a.m.	to	July 12	10:30 a.m.	8.0 hours	
AKN.71	July 12	3:15 p.m.	to	July 12	11:15 p.m.	8.0 hours	
AKN.74	July 13	3:00 a.m.	to	July 13	11:00 a.m.	8.0 hours	
AKN.74	July 13	4:15 p.m.	to	July 14	12:15 a.m.	8.0 hours	
AKN.77	July 14	3:45 a.m.	to	July 14	11:45 a.m.	8.0 hours	e
AKN.77	July 14	4:45 p.m.	to	July 15	12:45 a.m.	8.0 hours	
AKN.79	July 15	4:00 a.m.		July 24	9:00 a.m.	221.0 hours	b
AKN.81	July 24	9:00 a.m.	to	July 27	9:00 a.m.	72.0 hours	
Ugashik District							
Drift Net							
AKN.03	June 1	9:00 a.m.	to	June 19	9:00 a.m.		b
AKN.12	June 22	8:30 a.m.	to	June 22	6:30 p.m.	10.0 hours	
AKN.25	June 27	11:30 a.m.	to	June 27	5:30 p.m.	6.0 hours	
AKN.32	June 28	2:00 p.m.	to	June 28	8:00 p.m.	6.0 hours	
AKN.35	June 29	3:00 p.m.	to	June 29	9:00 p.m.	6.0 hours	
AKN.35	June 30	4:00 p.m.	to	June 30	10:00 p.m.	6.0 hours	
AKN.38	July 01	4:00 a.m.	to	July 01	12:00 p.m.	6.0 hours	
AKN.41	July 02	5:00 a.m.	to	July 02	11:00 a.m.	6.0 hours	
AKN.44	July 03	6:30 a.m.	to	July 03	12:30 p.m.	6.0 hours	
AKN.47	July 04	7:30 a.m.	to	July 04	3:30 p.m.	8.0 hours	
AKN.49	July 04	3:30 p.m.	to	July 05	7:30 p.m.	28.0 hours	
AKN.54	July 05	7:30 p.m.	to	July 06	7:30 p.m.	24.0 hours	
AKN.56	July 06	7:30 p.m.	to	July 07	7:30 p.m.	24.0 hours	
AKN.59	July 07	7:30 p.m.	to	July 08	7:30 p.m.	24.0 hours	
AKN.63	July 08	7:30 p.m.	to	July 09	7:30 p.m.	24.0 hours	
AKN.66	July 09	7:30 p.m.	to	July 10	7:30 p.m.	24.0 hours	
AKN.69	July 10	7:30 p.m.	to	July 11	7:30 p.m.	24.0 hours	e
AKN.72	July 11	7:30 p.m.	to	July 12	7:30 p.m.	24.0 hours	
AKN.75	July 12	7:30 p.m.	to	July 24	9:00 a.m.	277.5 hours	b
AKN.81	July 24	9:00 a.m.	to	July 27	9:00 a.m.	72.0 hours	

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Table 7.–Page 5 of 8.

Number[a]	Start Date	Start Time		End Date	End Time	Effective time	
Ugashik District							
Set Net							
AKN.03	June 1	9:00 a.m.	to	June 19	9:00 a.m.		[b]
AKN.12	June 22	8:30 a.m.	to	June 22	6:30 p.m.	10.0 hours	
AKN.17	June 24	10:30 a.m.	to	June 24	8:30 p.m.	10.0 hours	
AKN.25	June 27	11:30 a.m.	to	June 27	9:30 p.m.	10.0 hours	
AKN.32	June 28	2:00 p.m.	to	June 28	10:00 p.m.	8.0 hours	
AKN.35	June 29	3:00 p.m.	to	June 29	11:00 p.m.	8.0 hours	
AKN.35	June 30	4:00 p.m.	to	June 30	11:59 p.m.	8.0 hours	
AKN.38	July 01	4:00 a.m.	to	July 01	2:00 p.m.	8.0 hours	
AKN.41	July 02	5:00 a.m.	to	July 02	3:00 p.m.	10.0 hours	
AKN.44	July 03	6:30 a.m.	to	July 03	4:30 p.m.	10.0 hours	
AKN.47	July 04	7:30 a.m.	to	July 04	5:30 p.m.	10.0 hours	
AKN.49	July 04	5:30 p.m.	to	July 05	7:30 p.m.	26.0 hours	
AKN.54	July 05	7:30 p.m.	to	July 06	7:30 p.m.	24.0 hours	
AKN.56	July 06	7:30 p.m.	to	July 07	7:30 p.m.	24.0 hours	
AKN.59	July 07	7:30 p.m.	to	July 08	7:30 p.m.	24.0 hours	
AKN.63	July 08	7:30 p.m.	to	July 09	7:30 p.m.	24.0 hours	
AKN.66	July 09	7:30 p.m.	to	July 10	7:30 p.m.	24.0 hours	
AKN.69	July 10	7:30 p.m.	to	July 11	7:30 p.m.	24.0 hours	[e]
AKN.72	July 11	7:30 p.m.	to	July 12	7:30 p.m.	24.0 hours	
AKN.75	July 12	7:30 p.m.	to	July 24	9:00 a.m.	277.5 hours	
AKN.81	July 24	9:00 a.m.	to	July 27	9:00 a.m.	72.0 hours	
Nushagak District							
Nushagak Section							
Drift Net							
DLG.02	June 07	2:00 a.m.	to	June 07	2:00 p.m.	12.0 hours	[h,i]
DLG.04	June 11	4:00 a.m.	to	June 11	4:00 p.m.	12.0 hours	[h,i]
DLG.12	June 21	10:00 p.m.	to	June 22	1:00 a.m.	3.0 hours	[h,i]
DLG.17	June 23	4:00p.m.	to	June 23	9:00 p.m.	5.0 hours	[g]
DLG.19	June 24	2:00 p.m.	to	June 24	8:00 p.m.	6.0 hours	
DLG.19	June 25	6:00 a.m.	to	June 25	11:00 a.m.	5.0 hours	
DLG.20	June 25	6:00 p.m.	to	June 26	12:00 a.m.	6.0 hours	
DLG 20	June 26	6:00 a.m.	to	June 26	11:00 a.m.	5.0 hours	
DLG.23	June 26	5:00 p.m.	to	June 26	10:00 p.m.	5.0 hours	
DLG.25	June 27	8:00 p.m.	to	June 28	1:00 a.m.	5.0 hours	
DLG.25	June 28	9:00 a.m.	to	June 28	3:00 p.m.	6.0 hours	
DLG.26	June 28	8:00 p.m.	to	June 29	4:00 a.m.	8.0 hours	
DLG.26	June 29	8:00 a.m.	to	June 29	3:00 p.m.	7.0 hours	
DLG.27	June 29	8:00 p.m.	to	June 30	5:00 a.m.	9.0 hours	
DLG.27	June 30	9:00 a.m.	to	June 30	4:00 p.m.	7.0 hours	
DLG.28	June 30	8:00 p.m.	to	July 01	6:00 a.m.	10.0 hours	
DLG.28	July 01	9:00 a.m.	to	July 01	7:00 p.m.	10.0 hours	
DLG.29	July 01	10:00 p.m.	to	July 02	8:00 a.m.	10.0 hours	
DLG.29	July 02	1:00 p.m.	to	July 02	9:00 p.m.	8.0 hours	
DLG.30	July 03	1:00 a.m.	to	July 03	9:00 a.m.	8.0 hours	
DLG.30	July 03	1:00 p.m.	to	July 03	9:00 p.m.	8.0 hours	

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Table 7.–Page 6 of 8.

Number[a]	Start Date	Start Time		End Date	End Time	Effective time	
Nushagak District							
Nushagak Section							
Drift Net							
DLG.32	July 03	9:00 p.m.	to	July 04	9:00 a.m.	12.0 hours	f
DLG.32	July 04	1:00 p.m.	to	July 04	9:00 p.m.	8.0 hours	
DLG.33	July 05	2:00 a.m.	to	July 05	10:00 a.m.	8.0 hours	
DLG.34	July 05	2:00 p.m.	to	July 05	10:00 p.m.	8.0 hours	
DLG.34	July 06	2:00 a.m.	to	July 06	10:00 a.m.	8.0 hours	
DLG.35	July 06	2:00 p.m.	to	July 06	10:00 p.m.	8.0 hours	
DLG.35	July 07	5:00 a.m.	to	July 07	11:00 a.m.	6.0 hours	
DLG.36	July 07	4:00 p.m.	to	July 07	10:00 p.m.	6.0 hours	
DLG.37	July 08	3:00 p.m.	to	July 08	11:00 p.m.	8.0 hours	
DLG.37	July 09	6:00 a.m.	to	July 09	12:00 p.m.	6.0 hours	
DLG.38	July 09	4:00 p.m.	to	July 10	12:00 a.m.	8.0 hours	
DLG.38	July 10	6:00 a.m.	to	July 10	1:00 p.m.	7.0 hours	
DLG.40	July 10	5:00 p.m.	to	July 11	1:00 a.m.	8.0 hours	
DLG.40	July 11	7:00 a.m.	to	July 11	2:00 p.m.	7.0 hours	
DLG.41	July 12	12:00 a.m.	to				e
DLG .43			to	July 20	12:00 p.m.	12.0 hours	
DLG .43	July 21	9:00 a.m.	to	July 21	5:00 p.m.	8.0 hours	g
DLG.46	Aug 06	12:01 a.m.	to	Aug 06	11:59 p.m.	24.0 hours	j
Set Net							
DLG.02	June 07	1:00 a.m.	to	June 07	1:00 p.m.	12.0 hours	h,i
DLG.04	June 11	4:00 a.m.	to	June 11	4:00 p.m.	12.0 hours	h,i
DLG.12	June 22	12:00 a.m.	to	June 22	3:00 a.m.	3.0 hours	h,i
DLG.16	June 23	1:00 a.m.	to	June 23	11:00 a.m.	10.0 hours	g
DLG.17	June 23	11:00 a.m.	to	June 23	9:00 p.m.	10.0 hours	f,g
DLG 18	June 24	2:00 a.m.	to	June 24	11:00 a.m.	9.0 hours	
DLG.19	June 24	11:00 a.m.	to	June 25	11:00 a.m.	24.0 hours	f
DLG.20	June 25	11:00 a.m.	to	June 26	12:00 p.m.	25.0 hours	f
DLG.23	June 26	12:00 p.m.	to	June 26	10:00 p.m.	10.0 hours	f
DLG.24	June 27	4:00 a.m.	to	June 28	5:00 a.m.	25.0 hours	
DLG.25	June 28	5:00 a.m.	to	June 28	6:00 p.m.	13.0 hours	f
DLG.26	June 28	6:00 p.m.	to	June 29	6:00 p.m.	24.0 hours	f
DLG.27	June 29	6:00 p.m.	to	June 30	7:00 p.m.	25.0 hours	f
DLG.28	June 30	7:00 p.m.	to	July 01	8:00 p.m.	25.0 hours	f
DLG.29	July 01	8:00 p.m.	to	July 02	9:00 p.m.	25.0 hours	f
DLG.30	July 02	9:00 p.m.	to	July 03	10:00 p.m.	25.0 hours	f
DLG.32	July 03	10:00 p.m.	to				d
DLG .43			to	July 20	12:00 p.m.	12.0 hours	
DLG .43	July 21	9:00 a.m.	to	July 21	5:00 p.m.	8.0 hours	g
DLG.46	Aug 06	12:01 a.m.	to	Aug 06	11:59 p.m.	24.0 hours	j
Igushik Section							
Drift Net							
DLG.02	June 07	1:00 a.m.	to	June 07	1:00 p.m.	12.0 hours	h,i
DLG.04	June 11	4:00 a.m.	to	June 11	4:00 p.m.	12.0 hours	h,i
DLG.12	June 22	12:00 a.m.	to	June 22	3:00 a.m.	3.0 hours	h,i
DLG.19	June 24	2:00 p.m.	to	June 24	8:00 p.m.	6.0 hours	c

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Table 7.–Page 7 of 8.

Number[a]	Start Date	Start Time		End Date	End Time	Effective time	
Igushik Section							
Drift Net							
DLG.19	June 25	12:00 a.m.	to	June 25	4:00 a.m.	4.0 hours	c
DLG.20	June 25	2:00 p.m.	to	June 25	7:00 p.m.	5.0 hours	
DLG.20	June 26	3:00 a.m.	to	June 26	7:00 a.m.	4.0 hours	
DLG 23	June 26	2:00 p.m.	to	June 26	6:00 p.m.	4.0 hours	
DLG.25	June 27	3:00 p.m.	to	June 27	9:00 p.m.	6.0 hours	
DLG.25	June 28	5:00 a.m.	to	June 28	10:00 a.m.	5.0 hours	
DLG.27	June 30	9:00 a.m.	to	June 30	4:00 p.m.	7.0 hours	
DLG.28	June 30	8:00 p.m.	to	July 01	6:00 a.m.	10.0 hours	
DLG.28	July 01	9:00 a.m.	to	July 01	7:00 p.m.	10.0 hours	
DLG.29	July 01	10:00 p.m.	to	July 02	8:00 a.m.	10.0 hours	
DLG.29	July 02	1:00 p.m.	to	July 02	9:00 p.m.	8.0 hours	
DLG.30	July 03	1:00 a.m.	to	July 03	9:00 a.m.	8.0 hours	
DLG.30	July 03	1:00 p.m.	to	July 03	9:00 p.m.	8.0 hours	
DLG.32	July 03	9:00 p.m.	to				d
DLG .43			to	July 23	5:00 p.m.	17.0 hours	
DLG .43	July 26	9:00 a.m.	to	July 26	5:00 p.m.	8.0 hours	g
DLG.46	Aug 06	12:01 a.m.	to	Aug 06	11:59 p.m.	24.0 hours	j
Igushik Section							
Set Net							
DLG.02	June 07	1:00 a.m.	to	June 07	1:00 p.m.	12.0 hours	h,i
DLG.04	June 11	4:00 a.m.	to	June 11	4:00 p.m.	12.0 hours	h,i
DLG.06	June 15	6:00 a.m.	to	June 15	2:00 p.m.	8.0 hours	c
DLG.08	June 16	7:00 a.m.	to	June 16	3:00 p.m.	8.0 hours	
DLG.08	June 17	8:00 a.m.	to	June 17	4:00 p.m.	8.0 hours	
DLG.09	June 18	8:30 a.m.	to	June 18	4:30 p.m.	8.0 hours	
DLG 09	June 19	9:00 a.m.	to	June 19	5:00 p.m.	8.0 hours	
DLG.11	June 20	10:00 a.m.	to	June 20	6:00 p.m.	8.0 hours	
DLG.11	June 21	11:00 a.m.	to	June 21	7:00 p.m.	8.0 hours	g
DLG.12	June 22	12:00 a.m.	to	June 22	3:00 a.m.	3.0 hours	h,i
DLG.14	June 22	12:00 p.m.	to	June 22	8:00 p.m.	8.0 hours	
DLG.14	June 23	1:00 p.m.	to	June 23	9:00 p.m.	8.0 hours	
DLG.18	June 23	9:00 p.m.	to	June 24	10:00 p.m.	25.0 hours	f
DLG.19	June 24	10:00 p.m.	to	June 25	11:00 a.m.	13.0 hours	f
DLG.20	June 25	11:00 a.m.	to	June 26	12:00 p.m.	25.0 hours	f
DLG.23	June 26	12:00 p.m.	to	June 26	10:00 p.m.	10.0 hours	f
DLG.24	June 27	4:00 a.m.	to	June 28	5:00 a.m.	25.0 hours	
DLG.25	June 28	5:00 a.m.	to	June 28	6:00 p.m.	13.0 hours	
DLG.26	June 28	6:00 p.m.	to	June 29	6:00 p.m.	24.0 hours	f
DLG.27	June 29	6:00 p.m.	to	June 30	7:00 p.m.	25.0 hours	f
DLG.28	June 30	7:00 p.m.	to	July 01	8:00 p.m.	25.0 hours	f
DLG.29	July 01	8:00 p.m.	to	July 02	9:00 p.m.	25.0 hours	f
DLG.30	July 02	9:00 p.m.	to	July 03	10:00 p.m.	25.0 hours	f
DLG.32	July 03	10:00 p.m.	to				d
DLG .43			to	July 23	5:00 p.m.	17.0 hours	
DLG .43	July 26	9:00 a.m.	to	July 26	5:00 p.m.	8.0 hours	g
DLG.46	Aug 06	12:01 a.m.	to	Aug 06	11:59 p.m.	24.0 hours	j

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Table 7.–Page 8 of 8.

Number[a]	Start Date	Start Time		End Date	End Time	Effective time	
Togiak District							
Drift and Set Net							
DLG.10	June 22	9:00 a.m.	to	June 24	9:00 p.m.	12.0 hours	[k]
DLG.10	June 22	9:00 a.m.	to	June 25	9:00 a.m.	24.0 hours	[k]
DLG.22	July 01	9:00 p.m.	to	July 02	9:00 a.m.	12.0 hours	[k]
DLG.31	July 08	9:00 p.m.	to	July 09	9:00 a.m.	12.0 hours	[k]
DLG.39	July 15	9:00 a.m.	to	July 16	9:00 a.m.	24.0 hours	[k]
DLG.42	July 22	9:00 p.m.	to	July 23	9:00 a.m.	12.0 hours	[k]
DLG.44	July 24	9:00 a.m.	to	July 26	9:00 a.m.	48.0 hours	[f]
DLG.45	July 30	9:00 a.m.	to	Aug 02	9:00 a.m.	48.0 hours	[f]
DLG.47	Aug 21	9:00 a.m.	to	Aug 23	9:00 a.m.	48.0 hours	[f]

[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] Commercial fishing open until further notice.

[e] The 48-hour waiting period waived.

[f] Extends current fishing period.

[g] Gillnet mesh size is unrestricted.

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

[I] Includes the Chinook Area.

[j] Weekly schedule:12:01 a.m. until 11:59 p.m. Tuesday, Thursday and Sunday, until further notice.

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

Table 8.–Daily district registration of drift gillnet permit holders by district, Bristol Bay, 2009.

Date	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
6/19						
6/20	162	392	44	138	30	766
6/21	176	438	34	197	31	876
6/22 [a]						
6/23	276	500	40	305	35	1,156
6/24	316	537	39	393	35	1,320
6/25	358	541	39	431	40	1,409
6/26 [a]						
6/27	352	456	37	380	44	1,269
6/28	354	448	38	385	44	1,269
6/29	356	446	45	388	44	1,279
6/30	356	435	47	389	46	1,273
7/01	363	424	50	395	46	1,278
7/02	368	420	61	386	48	1,283
7/03	374	409	63	395	49	1,290
7/04	385	398	70	396	49	1,298
7/05	395	364	72	385	49	1,265
7/06	399	352	75	379	49	1,254
7/07	401	341	105	373	49	1,269
7/08 [a]						
7/09	415	320	141	357	50	1,283
7/10	422	312	159	324	51	1,268
7/11	435	297	213	284	52	1,281
7/12	464	286	218	280	52	1,300
7/13	491	286	211	279	52	1,319
7/14	502	291	206	279	52	1,330
7/15 [a]						
7/16 [a]						
Average	369	395	91	342	45	1,243

[a] Registration information not available.

Table 9.–Commercial salmon catch by date and species, in numbers of fish, Naknek-Kvichak District, Bristol Bay, 2009.

Date	Hours fished		Deliveries		Sockeye	Chinook	Chum	Pink	Coho	Total
	Drift	Set	Drift	Set						
6/15 [a]	14.0	14.0	7	1	154	0	3	0	0	157
6/16 [a]	24.0	24.0	13	1	406	0	6	0	0	412
6/17 [a]	24.0	24.0	28	7	3,228	7	65	0	0	3,300
6/18 [a]	24.0	24.0	47	3	5,270	8	110	0	0	5,388
6/19 [a]	9.0	9.0	21	3	3,264	0	65	0	0	3,329
6/22 [a]	14.0	14.0	213	88	117,104	5	603	0	0	117,712
6/23 [a]	9.0	9.0	171	57	71,352	3	248	0	0	71,603
6/24 [a]	7.0	7.0	288	236	172,326	15	2,322	0	0	174,663
6/25 [a]	7.5	19.0	312	348	192,911	20	3,229	0	0	196,160
6/26 [a]	8.0	19.0	332	343	234,927	21	2,450	0	0	237,398
6/27 [a]	9.0	20.0	292	395	303,480	32	2,444	0	0	305,956
6/28 [a]	8.0	8.0	276	245	267,586	10	2,326	0	0	269,922
6/29 [a]	8.5/10.0	18.5	629	421	641,128	22	4,866	0	0	646,016
6/30 [a]	8.5/10.0	24.0	515	370	295,283	25	2,095	0	0	297,403
7/01 [a]	9.0/10.0	24.0	602	343	353,605	31	1,725	0	0	355,361
7/02 [a]	9.0/10.0	24.0	663	374	411,956	38	2,676	0	0	414,670
7/03 [a]	9.0/10.0	24.0	683	477	545,744	38	4,305	0	0	550,087
7/04 [a]	9.0/10.0	24.0	677	584	744,603	60	6,282	0	0	750,945
7/05 [a]	8.0	24.0	723	510	555,037	61	3,744	0	0	558,842
7/06 [a]	10.0/8.0	24.0	750	500	491,286	76	2,964	0	0	494,326
7/07 [a]	10.0/8.0	24.0	728	498	526,528	52	4,597	1	0	531,178
7/08 [a]	10.0/8.0	24.0	742	527	738,719	58	16,840	0	0	755,617
7/09 [a]	10.0/8.0	24.0	722	490	436,362	65	10,783	0	0	447,210
7/10 [a]	10.0/8.0	24.0	747	423	354,187	38	28,059	0	0	382,284
7/11	10.0/8.0	24.0	706	357	215,446	29	2,912	0	0	218,387
7/12	10.0/9.0	24.0	647	327	168,190	15	1,861	1	0	170,067
7/13	10.0/9.0	24.0	610	262	147,699	32	2,293	1	0	150,025
7/14	10.0/9.0	24.0	526	254	108,138	25	1,867	0	0	110,030
7/15	19.0	24.0	240	218	69,736	25	1,817	2	0	71,580
7/16	24.0	24.0	239	211	78,231	34	2,547	1	3	80,816
7/17	24.0	24.0	181	183	66,480	16	2,683	1	1	69,181
7/18	24.0	24.0	123	125	36,498	15	1,693	10	0	38,216
7/19	24.0	24.0	74	94	17,284	19	1,484	3	9	18,799
7/20	24.0	24.0	227	81	56,604	11	34,538	2	82	91,237
7/21	24.0	24.0	25	50	11,264	3	5,133	0	11	16,411

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Table 9.–Page 2 of 2.

Date	Hours Fished		Deliveries		Sockeye	Chinook	Chum	Pink	Coho	Total
	Drift	Set	Drift	Set						
7/22	24.0	24.0	121	67	29,817	10	43,678	1	66	73,572
7/23	24.0	24.0	122	64	25,138	7	26,930	0	55	52,130
7/24	24.0	24.0	60	45	12,079	7	14,823	0	71	26,980
7/25	24.0	24.0	37	29	4,912	5	5,078	0	88	10,083
7/26	24.0	24.0	15	41	3,662	0	1,543	4	45	5,254
7/27	24.0	24.0	18	40	1,338	0	3,469	0	39	4,846
7/28	24.0	24.0	5	12	362	0	937	4	59	1,362
7/29	24.0	24.0	0	2						
7/30	24.0	24.0	1	1						
8/03	14.0	14.0	0	1						
8/04	24.0	24.0	0	1						
8/05 [b]	24.0	24.0	1	1						
8/06 [b]	24.0	24.0	1	1						
8/07	9.0	9.0	1	1						
8/12 [b]	24.0	24.0	1							
8/13	24.0	24.0	1							
Total					8,519,345	938	258,141	31	542	8,778,997

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, 2009.

Date	Hours fished		Deliveries		Sockeye	Chinook	Chum	Pink	Coho	Total
	Drift	Set	Drift	Set						
6/9	24.00	24.00		6	131					131
6/10	24.00	24.00		4	293					293
6/11	24.00	24.00		10	890					890
6/12 [a]	9.00	9.00								
6/15	9.00	9.00	43	19	10,734	1	310			11,045
6/17	9.00	9.00	123	78	75,020	16	1,784			76,821
6/18	9.00	13.00	183	141	99,907	19	1,573			101,498
6/19	8.00	12.00	249	159	138,664	31	2,054			140,749
6/20	6.00	8.00	300	146	245,827	15	2,598			248,440
6/21	6.00	8.00	343	170	225,788	5	1,412			227,205
6/22	6.00	8.00	383	169	296,758	8	1,582			298,348
6/23	6.00	8.00	443	212	408,354	7	1,897			410,258
6/24	5.00	8.00	465	232	490,732	7	3,142			493,881
6/25	5.00	8.00	460	224	419,717	11	3,454			423,183
6/26	7.00	16.00	447	400	593,734	7	3,651			597,392
6/27	14.00	16.00	844	308	782,138	19	7,322			789,479
6/28	14.00	15.00	748	305	897,156	9	6,273			903,439
6/29	11.00	9.00	658	141	692,181	5	4,319			696,504
6/30	10.50	13.50	750	330	600,131	10	3,482			603,623
7/1	13.75	14.75	717	316	531,585	11	5,016			536,612
7/2	15.25	15.25	769	317	602,755	10	4,469			607,234
7/3	11.25	15.25	725	317	544,737	8	3,891			548,636
7/4	8.75	15.75	730	351	586,541	7	3,411			589,959
7/5	13.00	15.50	627	230	564,893	12	4,863			569,768
7/6	6.00	15.00	354	306	379,717	13	3,141			382,870
7/7	7.00	15.50	341	332	453,475	4	3,331			456,810
7/8	5.00	8.00	329	182	262,523	1	4,954			267,478
7/9	6.00	16.00	327	355	410,212	1	5,595			415,808
7/10	10.00	16.00	584	284	272,488	3	4,667			277,158
7/11	16.00	16.00	468	234	197,312	11	2,835			200,158
7/12	7.00	16.00	288	224	147,877	4	2,253			150,134
7/13	6.00	15.75	247	185	111,231	3	2,907			114,141
7/14	15.25	15.50	415	170	99,093	5	2,337			101,435
7/15	14.00	14.00	255	92	77,912	1	2,119		1	80,033
7/16	24.00	24.00	241	121	106,886	5	2,653		0	109,545
7/17	24.00	24.00	155	61	48,644	0	2,597		0	51,241
7/18	24.00	24.00	125	51	41,546	2	2,005		0	43,553
7/19	24.00	24.00	64	36	29,806	1	1,610		5	31,422
7/20	24.00	24.00	36	25	23,746	1	2,928		0	26,675
7/21	24.00	24.00	30	24	27,203	0	4,952		3	32,157
7/22	24.00	24.00	36	33	21,354	0	3,342		7	24,703
7/23	24.00	24.00	18	29	9,140	0	734		25	9,899
7/24	24.00	24.00	16	25	14,270	0	529		19	14,818
7/25	24.00	24.00	19	21	13,272	0	545		74	13,891
7/26	24.00	24.00	12	21	2,866	0	327		15	3,208
7/27	24.00	24.00	4	14	6,873	2	785		90	7,749
7/28	24.00	24.00	4	17	5,093	0	0		82	5,175
7/29	24.00	24.00	3	10	824	0	0		69	893
7/30	24.00	24.00	1	12	2,662	0	0		208	2,870

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Table 10.–Page 2 of 2.

Date		Hours fished Drift	Set	Deliveries Drift	Set	Sockeye	Chinook	Chum	Pink	Coho	Total
7/31	[a]	9.0	9.0								
8/3		15.0	15.0	4	16	1,389	0	46		600	2,035
8/4		24.0	24.0	4	8	700	0	25		491	1,216
8/5		24.0	24.0	5	8	1,650	0	76		1,187	2,913
8/6		24.0	24.0	6	8	1,723	0	57		1,491	3,271
8/7		9.0	9.0		5	127	0	0		119	246
8/10		15.0	15.0	9	12	511	0	45		1,358	1,914
8/11		24.0	24.0	8	11	544	0	162		1,591	2,297
8/12		24.0	24.0	5	7	320	0	49		1,479	1,848
8/13		24.0	24.0	4	7	169	0	21		898	1,088
8/14	[a]	9.0	9.0								
8/17	[a]	15.0	15.0								
8/18	[a]	24.0	24.0								
						11,582,050	275	124,131	0	11,572	11,718,028

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, 2009.

		Hours fished		Deliveries							
Date		Drift	Set	Drift	Set	Sockeye	Chinook	Chum	Pink	Coho	Total
6/10	[a]	24.00	24.00								
6/12	[a]	9.00	9.00								
6/15		15.00	15.00	14		2,278	87	57			2,422
6/16		24.00	24.00	29		6,137	166	105			6,408
6/17		24.00	24.00	22		8,218	133	100			8,451
6/18		24.00	24.00	37	1	12,730	113	165			13,008
6/19		9.00	9.00	19		5,541	72	102			5,715
6/22		10.00	10.00	34	7	62,236	8	620			62,864
6/24			10.00		8	2,789	9	147			2,945
6/27		6.00	10.00	33	38	73,189	4	1,243			74,436
6/28		6.00	8.00	28	3	33,061	0	413			33,474
6/29		6.00	8.00	40	35	62,553	1	1,119			63,673
6/30		6.00	8.00	46	26	65,077	4	711			65,792
7/1		8.00	10.00	26	39	43,732	12	455			44,199
7/2		6.00	10.00	59	58	87,354	8	992			88,354
7/3		6.00	10.00	64	59	122,329	9	1,733			124,071
7/4		14.50	14.50	108	58	184,885	6	2,353			187,244
7/5		24.00	24.00	121	44	176,876	21	3,126			180,023
7/6		24.00	24.00	155	57	198,877	43	3,873			202,793
7/7		24.00	24.00	159	70	205,245	31	5,441			210,717
7/8		24.00	24.00	158	59	212,610	27	7,131			219,768
7/9		24.00	24.00	190	70	247,650	31	7,180			254,861
7/10		24.00	24.00	213	48	148,157	14	3,143			151,314
7/11		24.00	24.00	257	40	109,028	16	2,389			111,433
7/12		24.00	24.00	233	33	97,128	10	3,116			100,254
7/13		24.00	24.00	225	31	77,643	15	3,502			81,160
7/14		24.00	24.00	208	15	82,478	22	2,947			85,447
7/15		24.00	24.00	170	28	96,470	11	4,200			100,681
7/16		24.00	24.00	167	33	60,415	11	3,611			64,037
7/17		24.00	24.00	121	22	21,172	5	1,239			22,416
7/18		24.00	24.00	75	15	12,503	2	1,833			14,338
7/19		24.00	24.00	25	11	12,446	1	2,274			14,721
7/20		24.00	24.00	5	3	1,407	2	0			1,409
7/21		24.00	24.00	5	16	5,702	3				5,705
7/22		24.00	24.00	4	17	3,565	0				3,565
7/23		24.00	24.00	6	11	2,996	1	22			3,019
7/24		24.00	24.00	3	9	2,607	0	78		2	2,687
7/25		24.00	24.00	1	7	997	0	22	1	4	1,024
7/26	[a]	24.00	24.00								
7/27	[a]	24.00	24.00								
7/28		24.00	24.00	1	4	759					759
7/29		24.00	24.00		4	398					398
7/30		24.00	24.00								
8/3	[a]	15.00	15.00								

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Table 11.–Page 2 of 2.

Date		Hours fished Drift	Hours fished Set	Deliveries Drift	Deliveries Set	Sockeye	Chinook	Chum	Pink	Coho	Total
8/4	[a]	24.00	24.00								
8/5	[a]	24.00	24.00								
8/6		24.00	24.00		4	642				0	642
8/7	[a]	9.00	9.00								
8/10	[a]	15.00	15.00								
8/11	[a]	24.00	24.00								
8/12	[a]	24.00	24.00								
8/13	[a]	24.00	24.00								
8/17		15.00	15.00	2	4					441	441
8/18		24.00	24.00	1	10					506	506
8/19		24.00	24.00		4					272	272
8/20	[a]	24.00	24.00								
8/24	[a]	15.00	15.00								
8/25	[a]	24.00	24.00								
8/26	[a]	24.00	24.00								
8/27	[a]	24.00	24.00								
8/28	[a]	9.00	9.00								
8/31	[a]	15.00	15.00								
9/1	[a]	24.00	24.00								
9/2	[a]	24.00	24.00								
9/3	[a]	24.00	24.00								
Total						2,553,045	934	65,439	1	3,100	2,622,519

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, 2009.

	Hours fished		Deliveries							
Date	Nushagak	Igushik	Drift	Set	Sockeye	Chinook	Chum	Pink	Coho	Total
6/7	12/12 [b]	12/12 [b]	4	0	0	10	1	0	0	11
6/11	12/12 [b]	12/12 [b]	27	1	6	537	17	0	0	560
6/15	0/0	0/8	0	8	479	15	5	0	0	499
6/16	0/0	0/8	0	8	379	20	4	0	0	403
6/17	0/0	0/8	0	10	1,006	80	10	0	0	1,096 [a]
6/18	0/0	0/8	0	13	1,233	199	13	0	0	1,445
6/19	0/0	0/8	0	31	4,273	161	46	0	0	4,480
6/20	0/0	0/8	0	40	3,608	86	39	0	0	3,733
6/21	2/0 [b]	0/8	24	51	11,260	516	260	0	0	12,036
6/22	1/3 [b]	3/11 [b]	67	105	14,255	1,512	1,650	0	0	17,417
6/23	5/20	0/11	256	394	230,707	2,294	53,360	0	1	286,362
6/24	6/22	6/24	363	414	277,177	2,458	52,201	0	0	331,836
6/25	11/24	9/24	560	330	308,224	1,760	45,266	0	0	355,250
6/26	10/22	8/22	751	338	312,835	1,883	60,023	0	2	374,743
6/27	4/20	6/20	195	307	197,362	993	24,585	0	0	222,940
6/28	10/24	5/24	632	490	707,364	1,959	72,820	0	5	782,148
6/29	15/24	0/24	733	421	715,678	1,229	58,847	0	0	775,754
6/30	16/24	11/24	517	318	382,851	557	34,940	1	0	418,349
7/1	18/24	18/24	638	324	289,357	1,264	36,898	2	1	327,522
7/2	16/24	16/24	790	285	532,209	1,067	44,737	2	0	578,015
7/3	19/24	19/24	676	495	822,452	1,019	52,610	4	0	876,085
7/4	8/24	24/24	455	303	246,131	485	21,684	0	0	268,300
7/5	16/24	24/24	621	378	361,496	583	32,295	7	0	394,381
7/6	16/24	24/24	697	447	483,672	620	32,481	3	0	516,776
7/7	12/24	24/24	616	343	352,099	476	23,491	9	2	376,077
7/8	8/24	24/24	352	533	331,779	444	19,911	11	0	352,145
7/9	14/24	24/24	634	465	302,521	315	23,047	13	1	325,897
7/10	14/24	24/24	388	316	139,683	243	9,209	21	2	149,158
7/11	8/24	24/24	319	288	131,193	201	10,075	21	6	141,496
7/12	24/24	24/24	288	329	134,302	255	10,008	18	12	144,595
7/13	24/24	24/24	357	249	121,435	358	14,028	22	47	135,890
7/14	24/24	24/24	221	221	59,802	143	8,598	45	47	68,635
7/15	24/24	24/24	203	189	47,933	80	8,998	23	127	57,161
7/16	24/24	24/24	128	221	47,372	84	8,526	33	190	56,205
7/17	24/24	24/24	130	195	53,929	72	8,660	29	869	63,559
7/18	24/24	24/24	78	127	21,510	28	3,400	8	954	25,900
7/19	24/24	24/24	41	87	9,342	22	1,215	14	532	11,125
7/20	24/24	24/24	21	50	6,731	24	848	5	564	8,172
7/21	24/24	24/24	10	2	1,923	0	231	0	444	2,598

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Table 12.–Page 2 of 2.

Date	Hours fished		Deliveries							
	Nushagak	Igushik	Drift	Set	Sockeye	Chinook	Chum	Pink	Coho	Total
7/23	24/24	24/24	20	33	4,266	4	212	15	222	4,719
7/26	24/24	24/24	2	6	465	0	40	0	1,337	1,842
7/28	24/24	24/24	3	5	141	0	25	0	623	789
7/30	24/24	24/24	3	6	218	0	6	3	106	333
8/2	24/24	24/24	9	8	34	0	11	0	9,999	10,044
8/4	24/24	24/24	1	11	4	1	1	0	2,583	2,589
8/6	24/24	24/24	2	21	19	0	0	0	3,482	3,501
8/9	24/24	24/24	2	11	28	1	0	0	479	508
8/11	24/24	24/24	2	21	9	0	6	1	4,949	4,965
8/13	24/24	24/24	2	14	1	0	1	0	1,936	1,938
8/16	24/24	24/24	3	10	0	0	0	0	1,121	1,121
8/18	24/24	24/24	5	18	0	0	1	0	3,308	3,309
8/20	24/24	24/24	3	14	0	0	0	0	838	838
8/23	24/24	24/24	0	20	0	0	0	0	740	740
Total	926/1031	599/952	11,849	9,324	7,670,753	24,058	775,340	310	35,529	8,505,990

Note: Blank cells represent days with no data.

[a] Includes the Chinook Area.

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

Table 13.–Commercial salmon catch by date and species, in numbers of fish, Togiak District, Bristol Bay, 2009.

Date [a]	Sockeye	Chinook	Chum	Pink	Coho	Total
6/22	842	94	230		0	1,166
6/23	1,365	428	518		0	2,311
6/24	2,356	322	977		0	3,655
6/25	889	131	304		0	1,324
6/29	8,720	200	3,204		0	12,124
6/30	16,370	352	5,406	3	0	22,131
7/1	18,019	482	4,497		0	22,998
7/2	11,445	334	5,170		0	16,949
7/3	9,247	162	2,272		0	11,681
7/4	7,447	116	1,464		0	9,027
7/5 [b]						
7/6	16,898	279	4,420	7	0	21,604
7/7	22,361	305	9,442	8	0	32,116
7/8	20,209	197	5,829		0	26,235
7/9	15,057	177	6,330	2	0	21,566
7/10	30,556	218	7,876	10	0	38,660
7/11	30,665	88	4,547	16	90	35,406
7/13	21,989	91	8,579	14	1	30,674
7/14	24,243	76	10,607	16	1	34,943
7/15	23,579	82	7,617	15	0	31,293
7/16	20,416	75	9,917	15	0	30,423
7/17	7,222	17	3,125	4	0	10,368
7/20	27,299	26	3,659	7	0	30,991
7/21	16,637	10	1,189	2	0	17,838
7/22	32,554	25	7,490	4	0	40,073
7/23	32,903	19	6,308	8	2	39,240
7/24	30,158	29	5,938	2	0	36,127
7/25	24,886	24	4,086		0	28,996
7/26	2,880	0	352		0	3,232
7/27	15,729	3	1,646	3	1	17,382
7/28	15,146	10	2,514	3	0	17,673
7/29	4,806	3	472	2	1	5,284
7/30	11,008	6	1,101		2	12,117
7/31	17,042	7	2,205		9	19,263
8/1	9,703	4	1,279	2	6	10,994
8/2	4,234	1	502	1	4	4,742
8/3	3,207	2	252	0	6	3,467
8/4	6,308	4	724	6	56	7,098
8/5	2,940	4	421	2	44	3,411
8/6	987	1	197	1	61	1,247
8/7	804	1	128		48	981
8/10	478	1	67		111	657

Table 13.–Page 2 of 2.

Date [a]	Sockeye	Chinook	Chum	Pink	Coho	Total
8/11	848	0	73	0	194	1,115
8/12	767	2	124	0	239	1,132
8/13	305	0	28	0	147	480
8/14	148	0	8	0	39	195
8/17	270	0	23	0	310	603
8/19	181	0	24	0	533	738
8/20	266	0	11	0	994	1,271
8/21	105	2	7	0	997	1,111
8/22	54	1	7	0	690	752
8/24	48	0	1	0	426	475
8/25	105	2	6	0	769	882
8/26	74	1	0	0	1,379	1,454
8/27	47	0	4	0	692	743
8/31 [b]						
9/1 [b]						
9/2 [b]						
9/3 [b]						
9/7 [b]						
9/8 [b]						
9/9 [b]						
Total	574,280	4,417	143,418	153	8,566	730,834

[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 Section, Bristol Bay, 2009.

	Deliveries							
Date[a]	Drift	Set	Sockeye	Chinook	Chum	Pink	Coho	Total
6/22	4	12	396	76	113	0	0	585
6/23	5	29	1,365	428	518	0	0	2,311
6/24	7	37	1,788	322	808	0	0	2,918
6/25	3	14	889	131	304	0	0	1,324
6/29	27	57	5,103	167	2,221	0	0	7,491
6/30	36	87	8,822	314	4,235	3	0	13,374
7/1	38	81	9,872	439	3,824	0	0	14,135
7/2	61	92	11,445	334	5,170	0	0	16,949
7/3	23	82	9,247	162	2,272	0	0	11,681
7/4	12	44	7447	116	1,464	0	0	9,027
7/5 [b]								
7/6	45	81	10,912	249	3,246	7	0	14,414
7/7	58	105	12,348	255	7,934	8	0	20,545
7/8	63	90	12,177	171	5,151	0	0	17,499
7/9	75	89	15,057	177	6,330	2	0	21,566
7/10	86	139	30,556	218	7,876	10	0	38,660
7/11	59	106	30,665	88	4,547	16	90	35,406
7/13	62	84	15,232	84	7,712	14	1	23,043
7/14	66	89	20,012	65	9,777	16	1	29,871
7/15	75	96	21,835	82	7,492	15	0	29,424
7/16	84	93	20,416	75	9,917	15	0	30,423
7/17	18	47	7,222	17	3,125	4	0	10,368
7/20	72	95	27,299	26	3,659	7	0	30,991
7/21	32	92	16,637	10	1,189	2	0	17,838
7/22	83	130	32,554	25	7,490	4	0	40,073
7/23	91	145	32,903	19	6,308	8	2	39,240
7/24	97	123	30,158	29	5,938	2	0	36,127
7/25	66	87	24,886	24	4,086	0	0	28,996
7/26	18	7	2,880		352	0	0	3,232
7/27	70	21	15,729	3	1,646	3	1	17,382
7/28	72	60	15,146	10	2,514	3	0	17,673
7/29	26	30	4,806	3	472	2	1	5,284
7/30	44	57	11,008	6	1,101	0	2	12,117
7/31	70	56	17,042	7	2,205	0	9	19,263

Table 14.–Page 2 of 2.

	Deliveries							
Date[a]	Drift	Set	Sockeye	Chinook	Chum	Pink	Coho	Total
8/1	46	18	9,703	4	1279	2	6	10,994
8/2	19	11	4,234	1	502	1	4	4,742
8/3	17	20	3,207	2	252	0	6	3,467
8/4	37	42	6,308	4	724	6	56	7,098
8/5	15	30	2,940	4	421	2	44	3,411
8/6	1	17	987	1	197	1	61	1,247
8/7	3	8	804	1	128	0	48	981
8/10	21	14	478	1	67	0	111	657
8/11	36	29	848	0	73	0	194	1,115
8/12	23	21	767	2	124	0	239	1,132
8/13	19	17	305	0	28	0	147	480
8/14	0	6	148	0	8	0	39	195
8/17	6	10	270	0	21	0	310	601
8/19	2	18	181	0	24	0	533	738
8/20	4	19	266	0	11	0	994	1,271
8/21	5	18	105	2	7	0	997	1,111
8/22	6	12	54	1	7	0	690	752
8/24	25	10	48	0	1	0	426	475
8/25	50	21	105	2	6	0	769	882
8/26	11	28	74	1	0	0	1,379	1,454
8/27	4	21	47	0	4	0	692	743
8/31 [b]								
9/1 [b]								
9/2 [b]								
9/3 [b]								
9/7 [b]								
9/8 [b]								
9/9 [b]								
	359	416	31,897	26	3,888	12	8,459	44,282

[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, 2009.

	Deliveries							
Date[a]	Drift	Set	Sockeye	Chinook	Chum	Pink	Coho	Total
6/22			[b]					
6/24			[b]					
6/29	14	21	3,617	33	983	1	0	4,634
6/30	16	14	7,548	38	1,171	0	0	8,757
7/1	22	17	8,147	43	673	0	0	8,863
7/6	19	23	5,986	30	1,174	0	0	7,190
7/7	16	21	10,013	50	1,508	0	0	11,571
7/8	11	15	8,032	26	678	0	0	8,736
7/13	3	21	6,757	7	867	0	0	7,631
7/14	4	16	4,231	11	830	2	0	5,074
7/15	3	6	1,744	0	125	0	0	1,869
Total	110	154	57,089	256	8,295	3	0	65,643

[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, 2009.

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, 2009.

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, 2009.

District and River System		Sockeye	Chinook	Chum	Pink	Coho	Total
NAKNEK-KVICHAK DISTRICT							
Kvichak River		3,278,651					
Alagnak River		1,717,905					
Naknek River		3,522,789					
	Total	8,519,345	938	258,141	31	542	8,778,997
EGEGIK DISTRICT		11,582,050	275	124,131	0	11,572	11,718,028
UGASHIK DISTRICT		2,553,045	934	65,439	1	3,100	2,622,519
NUSHAGAK DISTRICT							
Wood River		5,127,548					
Igushik River		416,321					
Nushagak River		2,126,884					
	Total	7,670,753	24,058	775,340	310	35,529	8,505,990
TOGIAK DISTRICT							
Togiak Section		517,191	4,161	135,123	153	8,566	665,194
Kulukak Section		57,089	256	8,295	3	0	65,643
Matogak Section		0	0	0	0	0	0
Osviak Section		0	0	0	0	0	0
	Total	574,280	4,417	143,418	156	8,566	730,837
TOTAL BRISTOL BAY		30,899,473	30,622	1,366,469	498	59,309	32,356,371

Note: Species other than sockeye salmon are not apportioned to individual rivers.

Table 19.–Daily sockeye salmon escapement tower counts by river system, east side Bristol Bay, 2009.

	Kvichak River		Naknek River		Alagnak River		Egegik River		Ugashik River	
Date	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
6/18							24,282	24,282		
6/19							39,474	63,756		
6/20			11,406	11,406			53,598	117,354		
6/21	330	330	14,676	26,082			31,770	149,124		
6/22	4464	4,794	19,314	45,396			11,592	160,716		
6/23	4,206	9,000	14,010	59,406	24	24	17,706	178,422		
6/24	594	9,594	53,652	113,058	144	168	43,332	221,754		
6/25	4,248	13,842	30,030	143,088	1,266	1,434	39,798	261,552		
6/26	36,528	50,370	27,780	170,868	2,832	4,266	69,762	331,314		
6/27	38,472	88,842	36,414	207,282	888	5,154	40,014	371,328		
6/28	13,014	101,856	60,936	268,218	534	5,688	19,410	390,738		
6/29	3,390	105,246	116,568	384,786	5,766	11,454	28,044	418,782	4,902	4,902
6/30	112,410	217,656	111,030	495,816	55,548	67,002	55,218	474,000	9,180	14,082
7/01	198,996	416,652	40,476	536,292	90,486	157,488	72,864	546,864	27,162	41,244
7/02	271,620	688,272	36,060	572,352	55,278	212,766	97,800	644,664	67,212	108,456
7/03	219,396	907,668	44,178	616,530	37,404	250,170	35,088	679,752	67,836	176,292
7/04	96,708	1,004,376	81,702	698,232	39,252	289,422	33,306	713,058	115,404	291,696
7/05	158,004	1,162,380	63,912	762,144	111,906	401,328	60,756	773,814	96,336	388,032
7/06	184,302	1,346,682	64,608	826,752	43,098	444,426	43,134	816,948	101,328	489,360
7/07	186,546	1,533,228	47,220	873,972	62,730	507,156	45,372	862,320	135,900	625,260
7/08	115,128	1,648,356	80,328	954,300	46,932	554,088	33,888	896,208	69,372	694,632
7/09	99,096	1,747,452	83,232	1,037,532	108,702	662,790	59,472	955,680	127,386	822,018
7/10	135,822	1,883,274	48,768	1,086,300	85,110	747,900	77,160	1,032,840	229,758	1,051,776
7/11	152,244	2,035,518	20,706	1,107,006	41,862	789,762	52,830	1,085,670	167,742	1,219,518
7/12	71,580	2,107,098	15,228	1,122,234	23,172	812,934	24,360	1,110,030	66,840	1,286,358
7/13	25,470	2,132,568	12,810	1,135,044	32,400	845,334	14,172	1,124,202	10,428	1,296,786
7/14	24,120	2,156,688	15,246	1,150,290	45,372	890,706	13,464	1,137,666	4,062	1,300,848
7/15	50,796	2,207,484	10,224	1,160,514	36,498	927,204	5,262	1,142,928	12,738	1,313,586
7/16	36,552	2,244,036	8,952	1,169,466	11,484	938,688	3,348	1,146,276	10,104	1,323,690
7/17	7,362	2,251,398			14,778	953,466			4,782	1,328,472
7/18	5,898	2,257,296			17,352	970,818			1,482	1,329,954
7/19	8,844	2,266,140							5,454	1,335,408
7/20									1,890	1,337,298
7/21									5,484	1,342,782
7/22									3,336	1,346,118

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

Table 20.–Daily sockeye salmon escapement tower counts by river system, Westside Bristol Bay, 2009.

	Wood River		Igushik River		Togiak River	
Date	Daily	Cum.	Daily	Cum.	Daily	Cum.
6/19	3,948	3,948				
6/20	16,380	20,328				
6/21	31,602	51,930				
6/22	36,810	88,740				
6/23	65,430	154,170				
6/24	81,888	236,058	3,438	3,438		
6/25	39,912	275,970	6,330	9,768		
6/26	27,768	303,738	5,298	15,066		
6/27	15,072	318,810	5,820	20,886		
6/28	27,300	346,110	4,302	25,188		
6/29	39,456	385,566	3,456	28,644		
6/30	74,328	459,894	7,512	36,156		
7/01	43,122	503,016	14,814	50,970		
7/02	70,278	573,294	17,664	68,634	2,064	2,064
7/03	25,446	598,740	22,764	91,398	3,240	5,304
7/04	91,326	690,066	38,418	129,816	786	6,090
7/05	83,838	773,904	36,456	166,272	612	6,702
7/06	58,536	832,440	31,224	197,496	912	7,614
7/07	59,364	891,804	39,582	237,078	3,126	10,740
7/08	82,482	974,286	37,830	274,908	6,144	16,884
7/09	117,882	1,092,168	33,240	308,148	6,822	23,706
7/10	61,410	1,153,578	27,450	335,598	5,112	28,818
7/11	36,864	1,190,442	22,044	357,642	3,216	32,034
7/12	28,482	1,218,924	17,826	375,468	2,784	34,818
7/13	23,178	1,242,102	17,952	393,420	5,886	40,704
7/14	21,558	1,263,660	15,888	409,308	7,056	47,760
7/15	9,696	1,273,356	16,926	426,234	8,820	56,580
7/16	13,584	1,286,940	17,958	444,192	8,856	65,436
7/17	13,572	1,300,512	10,824	455,016	5,306	70,742
7/18	18,720	1,319,232	14,172	469,188	4,578	75,320
7/19			11,844	481,032	2,364	77,684
7/20			11,304	492,336	3,384	81,068
7/21			9,378	501,714	9,132	90,200
7/22			7,386	509,100	23,832	114,032
7/23			5,088	514,188	29,142	143,174
7/24					21,504	164,678
7/25					20,730	185,408
7/26					21,018	206,426
7/27					15,258	221,684
7/28					11,658	233,342
7/29					13,302	246,644
7/30					17,868	264,512
7/31					16,956	281,468
8/01					9,300	290,768
8/02					8,634	299,402
8/03					5,502	304,904
8/04					4,698	309,602
8/05					4,344	313,946

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, 2009.

	Sockeye		Chinook		Chum		Pink		Coho		Total	
Date	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
6/6	0	0	0	0	1,783	1,783	0	0	0	0	1,783	1,783
6/7	0	0	0	0	870	2,653	0	0	0	0	870	2,653
6/8	0	0	0	0	1,228	3,881	0	0	0	0	1,228	3,881
6/9	0	0	210	210	972	4,853	0	0	0	0	1,182	5,063
6/10	0	0	315	525	1,155	6,008	0	0	0	0	1,470	6,533
6/11	0	0	250	775	1,658	7,666	0	0	0	0	1,908	8,441
6/12	32	32	272	1,047	1,148	8,814	0	0	0	0	1,452	9,893
6/13	102	134	297	1,344	1,041	9,855	0	0	0	0	1,440	11,333
6/14	42	176	724	2,068	770	10,625	0	0	0	0	1,536	12,869
6/15	0	176	3,175	5,243	587	11,212	0	0	0	0	3,762	16,631
6/16	279	455	1,539	6,782	812	12,024	0	0	0	0	2,630	19,261
6/17	306	761	540	7,322	1,017	13,041	0	0	0	0	1,863	21,124
6/18	168	929	1,024	8,346	1,412	14,453	0	0	0	0	2,604	23,728
6/19	1,137	2,066	9,428	17,774	6,644	21,097	0	0	0	0	17,209	40,937
6/20	5,715	7,781	11,860	29,634	18,455	39,552	0	0	0	0	36,030	76,967
6/21	18,620	26,401	3,889	33,523	36,598	76,150	0	0	0	0	59,107	136,074
6/22	24,840	51,241	5,134	38,657	14,499	90,649	0	0	0	0	44,473	180,547
6/23	33,882	85,123	4,924	43,581	41,186	131,835	0	0	0	0	79,992	260,539
6/24	38,920	124,043	4,354	47,935	44,754	176,589	0	0	0	0	88,028	348,567
6/25	34,706	158,749	2,058	49,993	36,196	212,785	0	0	0	0	72,960	421,527
6/26	15,191	173,940	1,703	51,696	27,134	239,919	0	0	0	0	44,028	465,555
6/27	10,676	184,616	1,750	53,446	18,786	258,705	0	0	0	0	31,212	496,767
6/28	4,987	189,603	2,069	55,515	16,386	275,091	0	0	0	0	23,442	520,209
6/29	21,248	210,851	2,998	58,513	9,744	284,835	0	0	0	0	33,990	554,199
6/30	28,696	239,547	3,698	62,211	13,409	298,244	0	0	0	0	45,803	600,002
7/1	32,357	271,904	2,153	64,364	10,315	308,559	0	0	0	0	44,825	644,827
7/2	18,175	290,079	2,074	66,438	10,660	319,219	0	0	0	0	30,909	675,736
7/3	6,724	296,803	1,046	67,484	7,148	326,367	0	0	0	0	14,918	690,654

-continued-

Table 21.–Page 2 of 2.

	Sockeye		Chinook		Chum		Pink		Coho		Total	
Date	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
7/4	16,963	313,766	3,505	70,989	13,216	339,583	0	0	0	0	33,684	724,338
7/5	28,118	341,884	3,148	74,137	15,756	355,339	0	0	0	0	47,022	771,360
7/6	13,021	354,905	2,290	76,427	10,976	366,315	0	0	0	0	26,287	797,647
7/7	18,397	373,302	1,230	77,657	16,282	382,597	0	0	0	0	35,909	833,556
7/8	19,754	393,056	749	78,406	10,799	393,396	0	0	0	0	31,302	864,858
7/9	29,019	422,075	293	78,699	18,761	412,157	0	0	0	0	48,073	912,931
7/10	19,328	441,403	291	78,990	4,741	416,898	0	0	0	0	24,360	937,291
7/11	9,603	451,006	696	79,686	2,691	419,589	0	0	0	0	12,990	950,281
7/12	7,012	458,018	230	79,916	3,516	423,105	0	0	0	0	10,758	961,039
7/13	7,880	465,898	198	80,114	2,183	425,288	0	0	0	0	10,261	971,300
7/14	6,328	472,226	425	80,539	2,631	427,919	0	0	0	0	9,384	980,684
7/15	5,066	477,292	305	80,844	2,705	430,624	0	0	0	0	8,076	988,760
7/16	2,062	479,354	521	81,365	1,953	432,577	0	0	0	0	4,536	993,296
7/17	2,893	482,247	82	81,447	3,672	436,249	0	0	307	307	6,954	1,000,250
7/18	1,902	484,149	33	81,480	2,232	438,481	0	0	148	455	4,315	1,004,565

Table 22.–Comparison of daily sockeye salmon escapement estimates by tower count, aerial survey, and river test fishing enumeration methods, Kvichak River, Bristol Bay, 2009.

	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]
6/20								
6/21	330	330		42	167	167	7,014	
6/22	4,464	4,794		42	160	327	13,734	
6/23	4,206	9,000		42	0	327	13,734	
6/24	594	9,594		42	1,609	1,936	81,312	50,000
6/25	4,248	13,842		42	306	2,242	94,164	75,000
6/26	36,528	50,370		42	115	2,357	98,994	50,000
6/27	38,472	88,842		46	88	2,445	112,470	25,000
6/28	13,014	101,856		43	146	2,591	111,413	10,000
6/29	3,390	105,246		41	4,061	6,652	272,732	150,000
6/30	112,410	217,656		52	1,764	8,416	437,632	200,000
7/01	198,996	416,652		63	882	9,298	585,774	160,000
7/02	271,620	688,272		92	1,027	10,325	949,900	250,000
7/03	219,396	907,668		103	597	10,922	1,124,966	200,000
7/04	96,708	1,004,376		103	1,258	12,180	1,254,540	250,000
7/05	158,004	1,162,380		106	539	12,719	1,348,214	200,000
7/06	184,302	1,346,682		119	288	13,007	1,547,833	200,000
7/07	186,546	1,533,228		123	734	13,741	1,690,143	150,000
7/08	115,128	1,648,356		127	964	14,705	1,867,535	200,000
7/09	99,096	1,747,452		127	1,034	15,739	1,998,853	250,000
7/10	135,822	1,883,274		128	554	16,293	2,085,504	200,000
7/11	152,244	2,035,518		131	344	16,637	2,179,447	150,000
7/12	71,580	2,107,098		129	333	16,970	2,189,130	80,000
7/13	25,470	2,132,568		127	570	17,540	2,227,580	100,000
7/14	24,120	2,156,688		125	287	17,827	2,228,375	70,000
7/15	50,796	2,207,484						
7/16	36,552	2,244,036						
7/17	7,362	2,251,398						
7/18	5,898	2,257,296						
7/19	8,844	2,266,140						

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, 2009.

	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]
6/14				22	29	29	638	
6/15				36	55	84	3,024	
6/16				44	901	985	43,340	
6/17				58	1,586	2,571	149,118	150,000
6/18	24,282	24,282		52	449	3,020	157,040	130,000
6/19	39,474	63,756		52	343	3,363	174,876	110,000
6/20	53,598	117,354		49	385	3,748	183,652	65,000
6/21	31,770	149,124		49	193	3,941	193,109	45,000
6/22	11,592	160,716		48	500	4,441	213,168	55,000
6/23	17,706	178,422		48	808	5,249	251,952	75,000
6/24	43,332	221,754		56	525	5,774	323,344	100,000
6/25	39,798	261,552		55	1,820	7,594	417,670	160,000
6/26	69,762	331,314		57	340	7,934	452,238	120,000
6/27	40,014	371,328		49	392	8,326	407,974	40,000
6/28	19,410	390,738		49	560	8,886	435,414	45,000
6/29	28,044	418,782		50	482	9,368	468,400	50,000
6/30	55,218	474,000		52	1,103	10,471	544,492	70,000
7/01	72,864	546,864		53	550	11,021	584,113	40,000
7/02	97,800	644,664		62	450	11,471	711,202	60,000
7/03	35,088	679,752		62	240	11,711	726,082	40,000
7/04	33,306	713,058		61	746	12,457	759,877	50,000
7/05	60,756	773,814		64	263	12,720	814,080	40,000
7/06	43,134	816,948		66	516	13,236	873,576	50,000
7/07	45,372	862,320		65	1,228	14,464	940,160	80,000
7/08	33,888	896,208		66	546	15,010	990,660	100,000
7/09	59,472	955,680		66	1,135	16,145	1,065,570	100,000
7/10	77,160	1,032,840		65	446	16,591	1,078,415	50,000
7/11	52,830	1,085,670		66	191	16,782	1,107,612	25,000
7/12	24,360	1,110,030		66	184	16,966	1,119,756	18,000
7/13	14,172	1,124,202						
7/14	13,464	1,137,666						
7/15	5,262	1,142,928						
7/16	3,348	1,146,276						

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 1989–2006 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, 2009.

	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]
6/22				26	22	22	572	
6/23				33	27	49	1,617	
6/24				36	58	107	3,852	
6/25				40	36	143	5,720	
6/26				42	22	165	6,930	
6/27				44	79	244	10,736	
6/28				45	525	769	34,605	20,000
6/29	4,902	4,902		43	1,463	2,232	95,976	90,000
6/30	9,180	14,082		46	1,912	4,144	190,624	175,000
7/01	27,162	41,244		32	1,261	5,405	172,960	120,000
7/02	67,212	108,456		38	994	6,399	243,162	130,000
7/03	67,836	176,292		43	922	7,321	314,803	130,000
7/04	115,404	291,696		54	924	8,245	445,230	125,000
7/05	96,336	388,032		66	2,321	10,566	697,356	300,000
7/06	101,328	489,360		63	3,703	14,269	898,947	400,000
7/07	135,900	625,260		63	3,781	18,050	1,137,150	400,000
7/08	69,372	694,632		66	937	18,987	1,253,142	500,000
7/09	127,386	822,018		58	936	19,923	1,155,534	400,000
7/10	229,758	1,051,776		61	622	20,545	1,253,245	200,000
7/11	167,742	1,219,518		66	644	21,189	1,398,474	175,000
7/12	66,840	1,286,358		65	345	21,534	1,399,710	80,000
7/13	10,428	1,296,786		62	233	21,767	1,349,554	60,000
7/14	4,062	1,300,848		62	385	22,152	1,373,424	50,000
7/15	12,738	1,313,586		60	243	22,395	1,343,700	40,000
7/16	10,104	1,323,690		60	205	22,600	1,356,000	35,000
7/17	4,782	1,328,472						
7/18	1,482	1,329,954						
7/19	5,454	1,335,408						
7/20	1,890	1,337,298						
7/21	5,484	1,342,782						
7/22	3,3336	1,346,118						

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, 2009.

	Name of Operator/Buyer[a]	Base of Operations	District[b]	Method[c]	Export
1	Alaska General Seafoods	Kenmore, WA	K,E	C,EF,F	AIR
2	Alaska Salmon Wild	Ruidoso, NM	K	F	AIR
3	Baywatch Seafoods, LLC	Woodinville, WA	K,E,U,N,T	C,EF,F	SEA,AIR
4	Bloom in Alaska	Juneau, AK	N	EF	AIR
5	Charles B. Gordon	Vashon, WA	N	F	AIR
6	Coffee Point Seafoods of WA, LLC	Seattle, WA	E	EF,F	SEA
7	Copper River Seafoods	Anchorage, AK	N,T	EF	AIR
8	David Boone	Homer, AK	E	F	SEA
9	Dylan & Sarah Braund	Anchorage, AK	N	EF	AIR
10	Ekuk Fisheries	Seattle, WA	N	F	SEA
11	Friedman Family Fisheries, Inc.	Baltimore, MD	N	F	SEA
12	Great Ruby Fish Company	Neknek, AK	K	EF,F	SEA,AIR
13	Icicle Seafoods, Inc.	Seattle, WA	K,E,U,N	C,F, EF,S	SEA,AIR
14	Kathy Ann	Dillingham, AK	N	EF	AIR
15	Leader Creek Fisheries, LLC	Seattle, WA	K,E,U,N	EF,F	SEA,AIR
16	My Girl	Naknek, AK	K	F	AIR
17	Naknek Family Fisheries	Naknek, AK	K	EF,F	AIR
18	Norquest Seafoods, Inc.	Seattle, WA	K,E,U,N	F	SEA
19	Northland Fisheries, LLC.	Everett, WA	U, E	C	SEA
20	Ocean Beauty Seafoods, Inc.	Seattle, WA	K,E,U,N,T	C,EF,F,S	SEA,AIR
21	Ole Oksvold	Seattle, WA	E	EF	AIR
22	Paul Friis-Mikkelsen	Dillingham, AK	N	F	AIR
23	Pederson Point	Seattle, WA	K,E	F	SEA
24	Peter Pan Seafoods, Inc.	Seattle, WA	K,E,U,N	C,EF,F,S	SEA,AIR
25	Reid Tenkley	Naknek, AK	K	EF	AIR
26	Rob Jones	Anchorage, AK	U	EF	AIR
27	Robin Samuelsen	Dillingham, AK	N	EF	AIR
28	Salmon Guy Seafoods	Asheville, NC	N	F	AIR
29	Shannon Ford	Auburn, WA	K	F	AIR
30	Snopac Products, Inc.	Seattle, WA	K,E,U,N	EF,F	SEA,AIR
31	Terry Medjo	Denver, CO	N	EF	AIR
32	Togiak Fisheries	Seattle, WA	T	F	SEA
33	Trident Seafoods	Seattle, WA	K,E,U,N	C,EF,F	SEA,AIR
34	Ugashik Wild Salmon	Ugashik, AK	U	C	AIR
35	West Coast Wild Salmon	Portland, OR	N	EF	AIR
36	Whiz-Bang Fisheries, Inc.	Friday Harbor, WA	K	F	AIR
37	Wild Alaska Salmon and Seafood	King Salmon, AK	K	EF,F	AIR
38	Wild Premium Salmon	Egegik, AK	E	EF	AIR
39	Yard Arm Knot Fisheries, LLC	Seattle, WA	K,E,U,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, 2009.

Species	Total Catch (lbs.)	Mean Weight (lbs.)	Mean Price ($/lb.)	Exvessel Value ($)
Sockeye	182,306,891	5.90	0.70	127,614,824
Chinook	532,035	17.50	0.75	399,026
Chum	8,608,755	6.30	0.15	1,291,313
Pink	1,597	3.20	0.20	319
Coho	405,561	6.90	0.40	162,224
Total	191,854,839			129,467,707

Note: Weighted averages used.

Table 27.–Subsistence salmon harvest by species, in numbers of fish, by district and location fished, Bristol Bay, 2008.

Area and river system	Number of permits issued[a]	Estimated salmon harvests					
		Chinook	Sockeye	Coho	Chum	Pink	Total
NAKNEK-KVICHAK DISTRICT	481	719	69,823	1,437	404	801	73,184
Naknek River Subdistrict	271	684	20,260	1,397	345	769	23,456
Kvichak River/Iliamna Lake Subdistrict:	215	35	49,563	40	59	31	49,728
Igiugig	10	5	1,595	0	29	0	1,629
Iliamna Lake-General	35	0	6,638	0	0	0	6,638
Kijik	1	0	300	0	0	0	300
Kokhanok	25	26	14,142	10	10	6	14,194
Kvichak River	10	0	405	0	0	0	405
Lake Clark	47	0	4,027	0	0	0	4,027
Levelock	1	4	30	30	20	25	109
Newhalen River	58	0	10,984	0	0	0	10,984
Pedro Bay	20	0	5,388	0	0	0	5,388
Six Mile Lake	18	0	6,054	0	0	0	6,054
EGEGIK DISTRICT	37	91	1,502	295	35	4	1,928
UGASHIK DISTRICT	14	47	1,660	222	17	9	1,955
NUSHAGAK DISTRICT	571	12,960	26,828	5,133	4,552	1,923	51,395
Wood River	163	2,726	6,780	816	468	260	11,051
Nushagak River	109	4,564	6,209	804	2,547	211	14,334
Nushagak Bay Noncommercial	232	4,469	8,119	2,294	1,259	801	16,942
Nushagak Bay Commercial	42	346	1,435	761	164	582	3,288
Igushik/Snake River	63	855	4,285	458	114	69	5,780
TOGIAK DISTRICT	91	1,337	3,770	541	701	114	6,463
Total	1,178	15,153	103,583	7,627	5,710	2,851	134,924

Note: 2008 numbers were not available at the time of publication. Due to rounding, the sum of columns and rows may not equal the estimated total. Sum of sites may exceed district totals, and sum of districts may exceed area total, because permit holders may use more than one site.

[a] Harvests are extrapolated for all permits issued based on those returned and on the area fished as recorded on the permit. Of 1,062 permits issued for the management area, 871 were returned (82.0%).

Table 28.–Daily observed estimates (tons) of herring by index area, Togiak District, 2009.

				Estimated Biomass by Index Area [a]													
Date	Start Time	Survey Rating [b]	Miles of Spawn	NUS	KUK	MET	NVK	UGL	TOG	TNG	MTG	OSK	PYR	CPN	HAG	WAL	Daily Total
4 May	11:30	2.2															
8 May	11:10	1.8															
11 May	11:00	1.6															
13 May	11:00	1.7							462								462
15 May	09:00	2.0				5	36	1,270	320								1,632
16 May	15:00	1.2		13,038	6,066	9,882	12,158	2,512	4,583								48,239[c]
19 May	14:00	4.0	[d] 5.2														
22 May	09:30	3.1	8.8		11,052	768	4,876	4,933	25,456	14,277	5,547	5,286	413		3,289		75,897
24 May	16:30	2.2	1.3	12,803	9,204	1,695	6,143	1,942	58,732	2,946	99	330					93,894
26 May	13:30	2.1			18,814		3,048	34	29,282	523	1,556	315					53,572
Total linear miles of spawn			15.3										Peak biomass estimate				93,894

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.

[c] Partial survey due to poor weather conditions.

[d] Vessel count and spawn survey only.

Table 29.–Emergency order (EO) commercial fishing periods for herring sac roe and spawn-on-kelp, Togiak District, 2009.

EO #	Area [a]		Date and Time				
Herring Sac Roe Gillnet							
DLG-02	Egg Island Section		5/16	8:00 p.m.	to	end of season	
Herring Sac Roe Purse Seine							
DLG-01	Right Hand Pt. to Anchor Pt., Togiak Reef to Cape Newenham		5/16	8:00 p.m.	to	5/20	10:00 p.m.
DLG-03	Right Hand Pt. to Anchor Pt., Togiak Reef to Cape Newenham	extension	5/20	10:00 p.m.	to	5/22	10:00 p.m.
DLG-04	Right Hand Pt. to Anchor Pt., Togiak Reef to Cape Newenham	extension	5/22	10:00 p.m.	to	5/25	10:00 p.m.
DLG-05	Right Hand Pt. to Anchor Pt., Togiak Reef to Cape Newenham	extension	5/25	10:00 p.m.	to	5/26	10:00 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, 2009.

			Kulukak		Nunavachak		Togiak		Hagemeister		Pyrite Point		Cape Newenham		Total	
Date	Duration	Periods	Tons	Roe %	Tons	Roe %	Tons	Roe %	Tons	Roe %	Tons	Roe %	Tons	Roe %	Tons	Roe %
Purse Seine																
15 May					21.0	[a]									21.0	
16 May	98:00	1			1,840.9	9.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,840.9	9.7
20 May	24:00	2			2,527.3	9.7	0.0	0.0	637.1	9.6	0.0	0.0	0.0	0.0	3,164.4	9.7
21 May	24:00	3			784.8	9.0	0.0	0.0	319.5	11.4	0.0	0.0	0.0	0.0	1,104.3	9.7
22 May	24:00	4			411.2	8.9	0.0	0.0	998.7	9.6	91.6	8.3	157.1	10.3	1,658.6	9.4
23 May	24:00	5			192.6	8.9	326.0	9.4	93.2	7.5	0.0	0.0	0.0	0.0	611.8	9.0
24 May	24:00	6			903.3	9.0	396.6	7.7	415.4	9.7	0.0	0.0	0.0	0.0	1,715.3	8.9
25 May	24:00	7			360.3	8.8	365.0	8.7	455.4	8.6	0.0	0.0	0.0	0.0	1,180.7	8.7
26 May	24:00	8			170.4	8.9	140.1	8.9	1,080.4	7.5	279.4	7.9	0.0	0.0	1,670.3	7.8
Subtotal	266:00				7,211.8	9.4	1,227.7	8.6	3,999.7	9.0 [a]	371.0	8.0	157.1	10.3	12,967.3	9.2
Gillnet																
16 May	98:00	1	166.8	8											166.8	8
20 May	24:00	2	1014.8	9.8											1014.8	9.8
21 May	24:00	3	860.4	9.9											860.4	9.9
22 May	24:00	4	600.8	10.1											600.8	10.1
23 May	24:00	5	352.5	10.1											352.5	10.1
24 May	24:00	6	168.8	9.6											168.8	9.6
25 May	24:00	7	320.9	9.1											320.9	9.1
26 May	24:00	8	264.1	9.4											264.1	9.4
27 May	24:00	9	184.9	9.2											184.9	9.2
28 May	24:00	10	176.9	8.9											176.9	8.9
29 May	24:00	11	29.1	9.9											29.1	9.9
Subtotal	338:00		4,140.0	9.6											4,140.0	9.6

-continued-

Table 30.–Page 2 of 2.

Date	Duration	Periods	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																
15 May					21.0	[a]									21.0	
16 May			166.8	8	1840.9	9.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2,007.7	9.6
20 May			1014.8	9.8	2,527.3	9.7	0.0	0.0	637.1	9.6	0.0	0.0	0.0	0.0	4,179.2	9.7
21 May			860.4	9.9	784.8	9.0	0.0	0.0	319.5	11.4	0.0	0.0	0.0	0.0	1,964.7	9.8
22 May			600.8	10.1	411.2	8.9	0.0	0.0	998.7	9.6	91.6	8.3	157.1	10.3	2,259.4	9.6
23 May			352.5	10.1	192.6	8.9	326.0	9.4	93.2	7.5	0.0	0.0	0.0	0.0	964.3	9.4
24 May			168.8	9.6	903.3	9.0	396.6	7.7	415.4	9.7	0.0	0.0	0.0	0.0	1,884.1	8.9
25 May			320.9	9.1	360.3	8.8	365.0	8.7	455.4	8.6	0.0	0.0	0.0	0.0	1,501.6	8.8
26 May			264.1	9.4	170.4	8.9	140.1	8.9	1,080.4	7.5	279.4	7.9	0.0	0.0	1,934.4	8.0
27 May			184.9	9.2											184.9	9.2
28 May			176.9	8.9											176.9	8.9
29 May			29.1	9.9											29.1	9.9
Total			4,140.0	9.7	7190.8	9.4	1227.7	8.6	3999.7	4.2 [a]	371.0	8.0	157.1	10.3	17,107.3	9.3

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, 2009.

Year		Total Run		Harvest[a]		Escapement	
Class	Age	(tons)	%	(tons)	%	(tons)	%
1989	20	0	0	0	0.0	0	0.0
1990	19	41	0	0	0.0	41	0.0
1991	18	0	0	7	0.0	-7	0.0
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	7.0
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	15.0
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	0.0
Total		142,133	100	17,107	100.0	125,026	100.0

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

Table 32.–Commercial herring sac roe and spawn-on-kelp buyers in Togiak District, 2009.

			Product Purchased		
			Sac Roe		
	Operator/Buyer[a]	Base of Operation	Gillnet	Purse Seine	Spawn-on-Kelp
1	Icicle Seafoods	P/Vs Bering Star, Discovery Star	X	X	
2	Norquest Seafoods, Inc.	P/V Pribilof	X	X	
3	Trident Seafoods	S/P Naknek, P/V Alaska Packer	X	X	
4	Y.A.K. Inc.	S/P Red Salmon Cannery	X	X	
5	Togiak Fisheries	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, 1989–2009.

	Kvichak River			Naknek River [a]		
	Range			Range		
Year	Lower	Upper	Actual	Lower	Upper	Actual
1989	6,000	10,000	8,318	800	1,400	1,612
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			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
20-Year Avg.	3,700	9,300	3,993	800	1,621	1,791
1989-98 Avg.	4,600	8,600	5,189	800	1,400	1,584
1999-08 Avg.	2,800	10,000	2,797	800	1,820	1,998
2009	2,000	10,000	2,266	800	1,400	1,170

	Egegik River			Ugashik River		
	Range			Range		
Year	Lower	Upper	Actual	Lower	Upper	Actual
1989	800	1,200	1,610	500	900	1,681
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
20-Year Avg.	800	1,340	1,475	500	1,110	1,173
1989-98 Avg.	800	1,280	1,652	500	1,020	1,299
1999-08 Avg.	800	1,400	1,299	500	1,200	1,046
2009	800	1,400	1,146	500	1,200	1,346

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	Wood River			Igushik River		
	Range			Range		
Year	Lower	Upper	Actual	Lower	Upper	Actual
1989	800	1,200	1,186	150	250	462
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
20-Year Avg.	705	1,320	1,553	150	270	390
1989-98 Avg.	710	1,200	1,374	150	250	396
1999-08 Avg.	700	1,440	1,732	150	290	384
2009	700	1,500	1,725	150	300	1,055

	Nushagak River [b]			Togiak River		
	Range			Range		
Year	Lower [c]	Upper	Actual	Lower	Upper	Actual
1989	300	700	513	100	200	84
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
20-Year Avg.	322	757	543	116	225	193
1989-98 Avg.	336	754	522	128	235	164
1999-08 Avg.	309	760	564	104	214	223
2009	340	760	484	120	270	314

[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–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, 1989–2009.

	Drift Net [a]						Set Net [a]						Total
Year	Resident	Non-Resident	Drift Total	Permits Fished	% Fished	Interim Use	Resident	Non-Resident	Set Total	Permits Fished	% Fished	Interim Use	Drift Set
1989	1,036	831	1,867	1,855	99%	91	785	240	1,025	971	95%	18	2,838
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
20-Year Avg.	953	926	1,879	1,715	91%	46	737	272	1,009	886	88%	6	2,804
1989-98 Avg.	989	897	1,886	1,872	99%	78	767	254	1,021	949	93%	10	2,835
1999-08 Avg.	918	955	1,872	1,558	83%	15	707	290	997	823	83%	2	2,772
2009	864	999	1,863	1,642	88%	0	674	307	981	855	87%	0	2,844

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.

Appendix A3.–Sockeye salmon commercial catch by district, in numbers of fish, Bristol Bay, 1989–2009.

Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
1989	13,809,956	8,901,994	3,146,239	2,788,185	88,923	28,735,297
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
20-Year Avg.	8,503,645	8,702,620	2,693,576	5,231,721	491,414	25,676,489
1989-98 Avg.	10,786,538	11,034,990	3,114,512	3,843,084	390,054	29,169,177
1999-08 Avg.	6,220,752	6,370,250	2,272,639	6,620,359	592,774	21,795,724
2009	8,519,345	11,582,050	2,553,045	7,670,753	574,280	30,899,473

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

Appendix A4.–Chinook salmon commercial catch by district, in numbers of fish, Bristol Bay, 1989–2009.

Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
1989	6,611	2,034	2,112	17,637	11,366	39,760
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	1,344	416	1,191	18,968	3,087	25,006
20-Year Avg.	3,099	939	1,462	52,306	9,302	64,869
1989-98 Avg.	4,933	1,173	1,676	61,536	10,329	79,647
1999-08 Avg.	1,266	704	1,248	43,077	8,274	48,449
2009	938	275	934	24,058	4,417	30,622

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

Appendix A5.–Chum salmon commercial catch by district, in numbers of fish, Bristol Bay, 1989–2009.

Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
1989	310,869	136,185	84,673	523,910	203,171	1,258,808
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
20-Year Avg.	187,166	79,082	71,225	482,565	161,969	946,641
1989-98 Avg.	203,126	83,200	55,343	371,156	164,815	877,640
1999-08 Avg.	171,206	74,964	87,106	593,974	159,123	1,015,642
2009	258,141	124,131	65,439	775,340	143,418	1,366,469

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

Appendix A6.–Pink salmon commercial catch by district, in numbers of fish, Bristol Bay, 1989–2009.

Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
1989	75	6	29	156	172	438
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
20-Year Avg.	73,661	1,489	138	50,431	43,446	169,165
1989-98 Avg.	132,672	2,626	235	52,470	41,800	229,803
1999-08 Avg.	14,650	353	42	48,392	45,091	108,527
2009	31	0	1	310	156	498

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, 1989–2009.

Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
1989	22,668	49,175	33,942	77,077	56,972	239,834
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	7,059	2,220	1,159	73,889	2,032	192,974
20-Year Avg.	5,533	27,933	11,939	29,719	16,666	97,120
1989-98 Avg.	8,951	40,369	21,368	23,682	30,771	125,140
1999-08 Avg.	2,116	15,496	2,510	35,756	2,561	69,100
2009	542	11,572	3,100	35,529	8,566	59,309

Appendix A8.–Total salmon commercial catch by district, in numbers of fish, Bristol Bay, 1989–2009.

Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
1989	14,150,179	9,089,394	3,266,995	3,406,958	360,620	30,274,146
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	10,651,517	7,528,622	2,472,742	7,629,892	1,082,937	29,365,710
20-Year Avg.	8,738,199	8,812,896	2,779,430	5,825,425	699,251	26,924,078
1989-98 Avg.	11,071,383	11,159,030	3,193,506	4,336,639	613,116	30,373,673
1999-08 Avg.	6,405,016	6,466,763	2,365,353	7,314,211	785,385	23,091,194
2009	8,778,997	11,718,028	2,622,519	8,505,990	730,837	32,356,371

[a] Total includes General District catch.

Appendix A9.–Commercial sockeye salmon catch, in percent, by gear type and district, Bristol Bay, 1989–2009.

	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
1989	89	11				90	10	87	13	58	42					55	45	87	13
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
20-Year Avg.	85	12	6	76	23	87	13	89	11	75	23	3		72	28	56	44	83	17
1989-98 Avg.	86	13	8			90	10	90	10	70	30					54	47	87	13
1999-08 Avg.	84	11	5	76	23	84	16	88	12	80	17	3		71	29	58	42	79	21
2009	80	12	9			85	15	87	13	76	20	4				60	40	82	18
Allocation [d]	84	8	8	84	16	86	14	90	10	74	20	6		74	26	n.a.	n.a.	n.a.	n.a.

[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] 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–present, as they were used to make management decisions regarding allocation.

Appendix A10.–Sockeye salmon escapement by district, in numbers of fish, Bristol Bay, 1989–2009.

Year	Naknek-Kvichak [a]	Egegik [b]	Ugashik [c]	Nushagak [d]	Togiak [e]	Total
1989	9,676,244	1,611,566	1,713,281	2,189,501	125,080	15,315,672
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
20-Year Avg.	6,867,778	1,475,341	1,195,949	2,489,312	241,250	12,318,075
1989-98 Avg.	6,972,244	1,652,072	1,324,298	2,305,754	230,585	12,484,953
1999-08 Avg.	6,763,312	1,298,610	1,067,601	2,672,871	251,916	12,151,197
2009	4,406,424 [h]	1,146,276	1,364,338	2,317,569 [f]	313,946 [g]	9,548,553

[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 1984–2004.

[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, 1989–2009.

		Escapement				
Year	Catch	Kvichak [a]	Alagnak [b]	Naknek [a]	Total	Total Run
1989	13,809,956	8,317,500	196,760	1,161,984	9,676,244	23,486,200
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	2,472,690	7,411,104	17,792,948
20-Year Avg.	8,503,645	3,992,796		1,768,239	6,946,000	15,449,645
1989-98 Avg.	10,786,538	5,188,828		1,538,326	6,972,264	17,758,803
1999-08 Avg.	6,220,752	2,796,763		1,998,152	6,919,736	13,140,488
2009	8,519,345	2,266,140	970,818	1,169,466	4,406,424	12,925,769

[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, 1989–2009.

	Kvichak		Alagnak			Naknek		
Year	Number	%	Number	%		Number	%	Total Run [b]
1989	19,774	84.2	534	2	[a]	3,179	14	23,487
1990	17,521	66	555	2	[a]	8,427	32	26,503
1991	8,032	43	604	3	[a]	9,918	53	18,554
1992	10,445	65	487	3	[a]	5,021	31	15,953
1993	9,313	63	817	6	[a]	4,687	32	14,817
1994	22,232	86	634	2	[a]	3,033	12	25,899
1995	27,431	87	651	2	[a]	3,564	11	31,646
1996	3,458	31	706	6	[a]	6,860	62	11,024
1997	1,683	50	244	7	[a]	1,409	42	3,336
1998	3,412	54	388	6	[a]	2,546	40	6,346
1999	12,947	73	1,070	6	[a]	3,740	21	17,757
2000	2,862	34	731	9	[a]	4,789	57	8,382
2001	1,426	17	409	5	[a]	6,639	78	8,474
2002	704	19	336	9	[a]	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
20-Year Avg.	8,446	47	1,763	12		5,179	40	15,388
1989-98 Avg.	12,330	63	562	4		4,864	33	17,757
1999-09 Avg.	4,561	32	2,964	20		5,494	48	13,019
2009	5,545	43	2,689	21		4,692	36	12,926

[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, 1989–2009.

		Escapement			
Year	Catch	Egegik [a]	Shosky Cr. [b]	King Salmon River [b]	Total Run
1989	8,901,994	1,610,916	50	600	10,513,560
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	6,495,908	1,432,500	0	1,500	7,929,908
2008	7,379,871	1,259,568	0	250	8,639,689
20-Year Avg.	8,702,620	1,486,567	14	394	10,258,409
1989-98 Avg.	11,034,990	1,651,852	28	264	12,687,062
1999-08 Avg.	6,370,250	1,298,582	2	616	7,667,884
2009	11,582,050	1,146,276	0	4	12,728,330

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, 1989–2009.

		Escapement			
Year	Catch	Ugashik [a] River	King Salmon [b] River	Dog Salmon [b] River	Total Run
1989	3,146,239	1,681,296	25,480	6,505	4,859,520
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	2,319,789	588,632	0 [c]	7,700	2,916,121
20-Year Avg.	2,693,576	1,169,783	13,669	12,492	3,889,519
1989-98 Avg.	3,114,512	1,299,320	16,385	8,593	4,438,810
1999-08 Avg.	2,272,639	1,040,245	10,954	16,391	3,340,229
2009	2,553,045	1,346,630 [d]	0 [c]	17,920	3,917,595

[a] Tower count.

[b] Aerial survey.

[c] King Salmon system still impacted 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, 1989–2009.

		Escapement							
Year	Catch	Wood [a]	Igushik [a]	Nuyakuk [a]	Nush/Mul [b]	Nushagak [c]	Snake [d]	Total	Total Run
1989	2,788,185	1,186,410	461,610			513,421	28,060	2,189,501	4,977,686
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		3,271,926	10,175,083
20-year Avg.	5,231,721	1,553,268	389,708	151,575	363,088	539,620	18,171	2,500,766	7,732,487
1989-98 Avg.	3,843,084	1,374,996	395,768	184,907	219,310	522,271	18,171	2,311,205	6,154,289
1999-08 Avg.	6,620,359	1,731,540	383,648	134,909	434,978	556,968		2,672,156	9,292,515
2009	7,670,753	1,319,232	514,188	[f]		484,149		2,317,569	9,988,322

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 1988–91, 1994–95 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, 1989–2009.

	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]
1989	2,519	51	1,214	24					513	704	1,217	24	28	1	4,978
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
20-Year Avg.	4,571	59	1,336	18	152	31	363	69	540	1,221	1,760	23	21	0	7,689
1989-98 Avg.	3,389	56	1,284	20	185	45	219	55	522	939	1,461	24	21	0	6,155
1999-08 Avg.	5,753	63	1,388	15	135	24	435	76	557	1,503	2,060	22			9,201
2009	6,447	65	931	9					484	2,127	2,611	26			9,989

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, 1989–2009.

	Catch				Escapement						
					Togiak						
Year	Togiak	Kulukak	Os/Mat [a]	Total	Lake [b]	River [c]	Tributaries [d]	Kulukak [e]	Other [f]	Total	Total Run
1989	68,375	14,116	6,441	88,932	84,480	15,200	4,560	20,840		125,080	214,012
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]	626,248	24,470	0	650,718	205,680					205,680	856,398
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
2009 [i]	517,191	57,089	0	574,280	313,946					313,946	888,226

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, 1989–2009.

Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
1989	23,486,200	10,513,560	4,859,520	4,977,686	214,012	44,050,978
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
20-Year Avg.	15,245,733	10,179,612	3,889,662	7,720,640	730,138	36,786,463
1989-98 Avg.	17,758,803	12,687,062	4,438,810	6,148,786	620,639	42,146,946
1999-08 Avg.	12,732,664	7,672,162	3,340,515	9,292,495	839,636	30,830,371
2009	12,925,769	12,728,326	3,917,595	9,988,322	888,226	40,448,238

[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, 1989–2009.

	Harvests by Fishery				Inriver	Spawning	
Year	Commercial	Sport	Subsistence	Total	Abundance [a]	Escapement [b]	Total Run
1989	17,637	3,614	8,122	29,373	78,302	72,600	101,973
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	62,976	5,900	17,709	86,585	97,812	86,705	173,290
1994	119,480	10,627	15,490	145,597	95,954	83,102	228,699
1995	79,943	4,951	13,701	98,595	85,622	77,018	175,613
1996	72,011	5,391	15,941	93,343	52,127	42,227	135,570
1997	64,156	3,497	15,318	82,971		82,000	164,971
1998	117,079	5,827	12,258	135,164	117,495	108,037	243,201
1999	10,893	4,237	10,057	25,187	62,331	54,703	79,890
2000	12,055	6,017	9,470	27,542	56,374	47,674	75,216
2001	11,568	5,899	26,939	44,406	99,155	83,272	127,678
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	12,392	83,265	172,559	161,528	244,793
2006	84,881	7,473	9,971	102,325	124,683	116,088	218,413
2007	51,350	9,669	14,001 [c]	75,020	60,464	48,356	123,376
2008	18,634	6,700	14,132	40,388	96,641	87,169	127,557
20-Year Avg.	52,488	5,913	14,035	72,482	91,276	81,454	153,935
1989-98 Avg.	61,538	5,360	13,816	80,714	86,496	77,645	158,358
1999-08 Avg.	43,438	6,466	14,254	64,250	95,578	85,263	149,512
2009	24,058	7,844 [c]	13,221 [c]	45,123	81,480	70,351	115,474

Note: Blank cells represent no data.

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

[b] Spawning escapement estimated from the following: 1997 - from comprehensive aerial surveys. 1988–1996, 1998–2008 - from inriver abundance estimated by sonar minus inriver harvests.

[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, 1989–2009.

Year	Harvests by Fishery				Spawning Escapement [b]	Total Run
	Commercial	Sport [a]	Subsistence	Total		
1989	11,366	234	551	12,151	10,540	22,691
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	[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	[c]	[d]
2007	7,755	1,501	1,234	10,490	[c]	[d]
2008	3,094	580 [e]	1,339 [e]	5,013	[c]	[d]
20-Year Avg.	9,304	716	981	11,001	13,582	24,860
1989-98 Avg.	10,334	515	692	11,541	12,919	24,460
1999-08 Avg.	8,274	917	1,271	10,461	14,687	N/A
2009	4,417	1,253 [e]	1,365 [e]	7,035	[c]	[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, 1989–2009.

	Nushagak District			Togiak District		
Year	Catch	Escapement [a]	Total Run	Catch	Escapement [b]	Total Run
1989	523,903	377,512	901,415	203,178	143,890	347,068
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 [d]	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,d]	250,264
2007	953,275	161,483	1,114,758	202,486	[c]	202,486
2008	541,469	326,300	867,769	301,855	279,580 [d]	581,435
20-Year Avg.	481,137	311,815	792,952	161,988	129,450	291,439
1989-98 Avg.	371,441	269,226	640,667	164,840	129,782	294,621
1999-08 Avg.	590,832	354,404	945,236	159,137	129,082	288,219
2009	775,340	438,481	1,213,821	143,418	[c]	143,418

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, 1989–2009.

	Harvests by Fishery				Spawning	Total
Year	Commercial	Subsistence [a]	Sport	Total	Escapement [b]	Run
1989	35,814	976	416	37,206		
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	2,032	541	3,420	5,993		[c]
20-Year Avg.	14,946	566	1,194	16,705	31,056	47,760
1989-98 Avg.	27,046	768	557	28,372	39,615	67,987
1999-08 Avg.	2,845	363	1,830	5,038	5,378	10,415
2009	8,566	312 [e]	2,377 [e]	11,254		[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, 1989–2009.

Year	Sockeye	Chinook	Chum	Pink	Coho
1989	5.6	19.1	6.3		7.4
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	7.0
1993	6.0	17.4	6.5		6.8
1994	5.5	18.0	6.5	3.7	8.2
1995	5.5	19.8	6.3	3.6	6.7
1996	6.3	18.0	7.3	3.5	6.8
1997	6.0	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	16.0	6.5	4.0	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	17.0	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
20-Year Ave.	5.9	16.8	6.7	3.6	7.0
1989-98 Ave.	5.8	17.6	6.6	3.6	7.2
1999-08 Ave.	6.0	16.0	6.9	3.6	6.7
2009	5.9	17.5	6.3	3.2	6.9

Note: Blank cells represent no data.

Appendix A24.–Average price paid in dollars per pound for salmon, by species, Bristol Bay, 1989–2009.

Year	Sockeye	Chinook	Chum	Pink	Coho
1989	1.25	0.82	0.26	0.32	0.71
1990 [a]	1.09	0.91	0.27	0.29	0.73
1991	0.75	0.67	0.22	0.15	0.60
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	0.20	0.14	0.43
1996	0.81	0.51	0.11	0.05	0.31
1997	0.90	0.52	0.10	0.07	0.50
1998	1.22	0.62	0.10	0.08	0.48
1999	0.84	0.53	0.10	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
20-Year Ave.	0.78	0.61	0.15	0.12	0.47
1989-98 Ave.	0.96	0.70	0.19	0.16	0.56
1999-08 Ave.	0.60	0.51	0.11	0.07	0.38
2009	0.70	0.75	0.15	0.20	0.40

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, 1989–2009.

Year	Sockeye	Chinook	Chum	Pink [a]	Coho	Total
1989	205,654	627	2,028		1,263	209,573
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
20 Year Ave.	118,608	699	970	97	355	120,685
1989-98 Ave.	155,954	940	1,175	143	556	158,711
1999-08 Ave.	81,261	458	765	42	153	82,659
2009	127,615	400	1,291		162	129,468

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, 1989–2009.

	South Unimak			Shumigan Island			Total		
	Sockeye			Sockeye			Sockeye		
Year	Actual	Quota [a]	Chum	Actual	Quota [a]	Chum	Actual	Quota [a]	Chum
1989	1,348	1,199	408	397	264	48	1,745	1,463	456
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	2013	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
20-yr Average	973	1,894	257	438	418	150	1,383	2,311	407
1989-98 Average	1,325	2,005	347	433	442	127	1,757	2,447	475
1999-08 Average	622	1,337	167	444	295	173	1,009	1,632	340
2009	594		201	573		496	1,167		697

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, 1989–2009.

Year [a]	Permits Issued	Sockeye	Chinook	Chum	Pink	Coho	Total
NAKNEK KVICHAK DISTRICT							
1989	411	87,103	970	693	277	1,927	90,970
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
20-Year Avg.	509	77,653	1,323	844	957 [c]	1,218	81,684
1989-1998 Avg.	525	88,534	1,668	1,160	990 [c]	1,502	93,561
1999-2008 Avg.	493	67,771	978	529	924 [c]	934	69,806
2009 [b]	474	69,816	879	433	635	1,010	72,772
EGEGIK DISTRICT							
1989	50	1,636	50	33	1	414	2,134
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
20-Year Avg.	50	2,337	96	105	49 [c]	597	3,169
1989-1998 Avg.	56	2,683	93	110	76 [c]	606	3,545
1999-2008 Avg.	44	1,991	98	100	23 [c]	587	2,793
2009 [b]	39	1,802	120	156	26	644	2,748

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Year	Permits Issued	Sockeye	Chinook	Chum	Pink	Coho	Total
UGASHIK DISTRICT							
1989	22	1,309	32	35	2	214	1,592
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
20-Year Avg.	27	1,449	65	48	57 [c]	362	1,947
1989-1998 Avg.	31	1,678	86	73	51 [c]	396	2,268
1999-2008 Avg.	23	1,220	45	23	6 [c]	327	1,626
2009 [b]	20	1060	44	28	22	265	1,419
NUSHAGAK DISTRICT							
1989	432	34,535	8,122	5,704	407	8,679	57,447
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
20-Year Avg.	510	26,208	13,191	4,227	1,969 [c]	5,415	50,250
1989-1998 Avg.	497	28,098	13,816	4,562	2,279 [c]	6,073	53,823
1999-2008 Avg.	523	24,318	12,565	3,992	1,660 [c]	4,758	46,676
2009 [b]	508	22,827	12,880	4,176	1,336	4,322	45,451

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Year	Permits Issued	Sockeye	Chinook	Chum	Pink		Coho	Total
TOGIAK DISTRICT								
1989	40	2,825	551	891	112		976	5,355
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
20-Year Avg.	49	2,574	981	506	108	[c]	566	4,852
1989-1998 Avg.	34	2,329	692	533	81	[c]	768	4,377
1999-2008 Avg.	64	2,818	1,271	480	135	[c]	363	5,327
2009 [b]	58	2,713	1,365	459	124		312	4,888
TOTAL BRISTOL BAY AREA								
1989	955	127,408	9,725	7,356	799		12,210	157,498
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
20-Year Avg.	1,142	110,763	15,665	5,779	3,113	[c]	8,156	142,320
1989-1998 Avg.	1,143	123,322	16,369	6,437	3,477	[c]	9,346	157,589
1999-2008 Avg.	1,141	98,204	14,961	5,122	2,748	[c]	6,967	127,051
2009 [b]	1,093	99,778	15,295	5,249	2,139		6,550	129,013

[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, 1989–2009.

Year [a,b]	Levelock	Igiugig	Pedro Bay	Kokhanok	Iliamna-Newhalen [c]	Nondalton	Port Alsworth	Other [d]	Total
1989	5,100	1,200	6,700	13,000	24,700	18,500	2,200	[e]	71,400
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
20-Year Avg.	1,841	1,477	5,050	13,036	16,916	11,732	2.724	2,394	55,109
1989-98 Avg.	2,976	1,530	6,453	13,621	20,745	14,264	2,862	2,624	64,812
1999-08 Avg.	706	1,424	3,647	12,452	13,087	9,322	2,586	2,186	45,407
2009 [f]	409	1,331	4,541	15,512	15,738	8,462	2,770	2,247	51,010

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] No permits issued. Only residents of the Naknek/Kvichak watershed could obtain subsistence permits.

[f] 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]	Manokotak	Aleknagik	Ekwok	New Stuyahok	Koliganek	Other [d]	Total
1989	31,800 [e]	5,800	2,000	4,700	9,700	3,800	[f]	57,800
1990	28,860 [e]	6,600	2,300	4,900	9,900	8,000	700	61,260
1991	34,399 [e]	5,873	3,043	4,532	8,326	5,438	2,163	63,774
1992	31,702 [e]	4,317	2,184	5,971	11,325	3,708	2,635	61,842
1993	25,315 [e]	3,048	2,593	2,936	12,169	4,180	2,538	52,779
1994	30,145 [e]	3,491	2,289	4,343	8,056	4,513	2,322	55,159
1995	24,998 [e]	2,453	1,468	2,046	6,911	2,983	2,406	43,265
1996	27,161 [e]	3,883	1,733	2,866	8,892	3,319	2,113	49,967
1997	23,255 [e]	3,988	1,989	1,797	6,427	4,179	4,598	46,233
1998	24,072 [e]	4,069	1,112	3,555	5,419	3,166	4,958	46,351
1999	26,502 [e]	3,413	1,532	1,805	4,556	2,772	5,389	45,969
2000	27,931 [e]	3,173	1,111	3,946	3,715	2,792	2,362	45,029
2001	26,435 [e]	3,700	2,129	2,218	7,294	2,209	4,096	48,080
2002	25,004 [e]	3,254	1,517	2,735	6,043	3,098	3,247	44,897
2003	26,955 [e]	4,214	2,044	2,291	10,817	5,721	3,034	55,076
2004	23,308 [e]	2,052	2,206	1,891	6,714	3,619	3,364	43,154
2005	21,898 [e]	1,576	1,795	1,388	9,673	8,422	3,088	47,841
2006	22,184 [e]	1,655	2,048	1,499	6,160	3,886	2,941	40,373
2007	25,237 [e]	2,442	1,382	1,267	8,284	3,054	3,278	44,944
2008	27,446 [e]	5,429	3,309	1,902	5,690	4,423	3,196	51,395
20-Year Avg.	26,730	3,722	1,989	2,929	7,804	4,164	3,075	50,259
1989-98 Avg.	28,171	4,352	2,071	3,765	8,713	4,329	2,715	53,843
1999-08 Avg.	25,290	3,091	1,907	2,094	6,895	4,000	3,400	46,676
2009 [g]	24,015	2,631	2,148	1,589	7,304	4,681	3,173	45,541

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] Subsistence harvests by non-watershed residents.

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

[f] No permits issued. Only residents of the Nushagak watershed could obtain subsistence permits.

[g] 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, 1989–2009.

				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]
1989	19		5/9-5/14	320	5.0	2,844	7.8	310	3.0	9,415	8.5	12,259
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	18,649	9.4	23,813
1998	15	2,475	4/29-5/10	152	46.0	5,952	12.5	123	16.5	16,824	9.6	22,776
1999	12	2,400	5/18-5/26	171	28.0	4,858	11.5	96	4.7	14,368	9.2	19,226
2000	12	2,100	5/6-5/14	227	67.0	5,464	10.6	90	15.8	14,957	10.1	20,421
2001	11	2,255	5/6-5/13	96	84.0	6,491	10.6	64	26.0	15,879	9.2	22,370
2002	8	1,920	5/3-5/13	82	102.0	5,216	10.9	37	57.5	11,833	9.3	17,049
2003	7	1,920	4/25-5/7	75	142.0	6,505	10.9	35	110.2	15,158	8.9	21,663
2004	6	2,150	4/29-5/9	54	162.0	4,980	10.4	31	78.0	13,888	9.5	18,868
2005	8	2,330	4/30-5/8	56	149.0	5,841	11.2	33	83.0	15,071	9.6	20,912
2006	7	2,060	5/12-5/21	49	143.9	7,132	10.8	28	113.0	16,821	9.2	23,953
2007	5	1,420	5/10-5/25	25	366.0	4,012	11.2	21	244.0	13,120	10.0	17,132
2008	7	1,950	5/16-5/31	27	312.0	4,832	11.4	28	292.0	15,691	8.4	20,523
1989-2008 Avg.	13	2,754		166	100	5,273	11	138	55	15,419	9	20,692
1999-2008 Avg.	8	2,051		86	156	5,533	11	46	102	14,679	9	20,212
2009	6	2,015	5/16-5/31	32	314.0	4,140	10.2	21	266.0	12,967	10.3	17,107

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, 1989–2009.

Year	Biomass Estimate[a] (short tons)	S-O-K Herring Equivalent	Dutch Harbor Food/Bait	Sac Roe				Total Harvest	Exploitation Rate
				Gillnet[b]	Purse Seine[c]	Waste[d]	Total[e]		
1989	80,100	2,499	3,081	2,844	9,415		12,259	17,839	22.3%
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	0	1,950	5,164	18,298	350	23,462	25,412	20.3%
1998	121,000	0	1,994	5,952	16,424	400	22,376	24,370	20.1%
1999	124,946	1,605	2,398	4,858	14,170	198	19,028	23,031	18.4%
2000	130,904	0	2,014	5,464	14,857	100	20,321	22,335	17.1%
2001	119,818	0	1,439	6,491	15,660	219	22,151	23,590	19.7%
2002	120,196	260	2,846	5,216	11,793	40	17,009	20,115	16.7%
2003	126,213	55	1,487	6,505	14,778	380	21,283	22,825	18.1%
2004	143,124	0	1,258	4,980	13,785	103	18,765	20,023	14.0%
2005	108,585	0	1,154	5,841	14,287	784	20,128	21,282	19.6%
2006	129,976	0	953	7,132	16,321	500	23,453	24,406	18.8%
2007	134,566	0	1,214	4,012	12,800	320	16,812	18,026	13.4%
2008	130,516	0	1,536	4,832	15,691	0	20,523	22,059	16.9%
1989-08 Ave.	122,430	717	1,877	5,273	15,242	283	20,515	23,109	18.9%
1999-08 Ave.	126,884	192	1,630	5,533	14,398	264	19,931	21,753	17.1%
2009	121,800	0	1,335	4,140	12,967		17,107	18,442	15.1%

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] Does not include waste.

Appendix B3.–Age composition, by weight, of total inshore herring run, Togiak District, 1989–2009.

	Age Composition (%) [a]							Total [b]
Year	3 [c]	4	5	6	7	8	9 +	Run (tons)
1989			5.0	11.0	4.0	15.0	65.0	98,965
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

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, 1989–2009.

Year	Companies	Fishery Dates	Hours	Effort [a]	Area	Total Harvest in pounds	Herring Equivalent (in tons)	Openings	Average Roe %
1989	11	5/14	4.0	487	K 9	559,780	2,499	1	8.3
1990	7	5/11	3.0	481	K 8	413,844	1,617	1	9.5
1991	7	5/13	2.5	532	K 4	348,357	1,310	1	9.7
1992	5	5/23	3.3	386	K 9	363,600	1,482	2	9.1
1993	2	5/1-5/2	7.0	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	10.0
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	12.0	200	K 8, K 9	455,800	1,899	2	9.6
1997		no fishery							
1998		no fishery							
1999	1	5/23	8.0	130	K 9	419,563	1,605	2	9.8
2000		no fishery							
2001		no fishery							
2002	1	5/14	2.0	50	K 9	67,793	260	1	9.8
2003	1	5/3-5/4	3.0	35	K 3	[b]		1	[b]
2004		no fishery							
2005		no fishery							
2006		no fishery							
2007		no fishery							
2008		no fishery							
1999-2008 Average	1		4	72		167,080	640	1	10
2004-2008 Average	1								
2009		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, 1989–2009.

Year	Preseason Forecast [a]	Biomass Estimate		Spawn Estimates	
				Observations	Miles
1989	80,100	98,965		69	53
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
1989-08 Ave.	114,931	137,672		81	53
1999-08 Ave.	122,534	139,635		77	44
2009	121,800	142,133		36	15

[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, 1989–2009.

	Herring			
Year	Sac Roe	Food/Bait	Spawn-on-Kelp	Total
1989	4,983	19	448	5,450
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
1989-08 Ave.	5,538	4	285	5,827
1999-08 Ave.	3,058	0	113	3,171
2009	2,500	0	[a]	2,500

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, 1989–2009.

	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]
1989	3,376	2,844	-16	10,128	9,415	-7	350,000	559,780	60
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	15,691	-3	350,000	[d]	
1989-08 Ave.	5,869	5,273	-9	15,827	15,412	-1	350,000	328,693	-6
1999-08 Ave.	6,608	5,533	-15	16,262	14,670	-9	350,000	167,080	-52
2009	6,378	4,140	-35	14,882	12,967	-13	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.

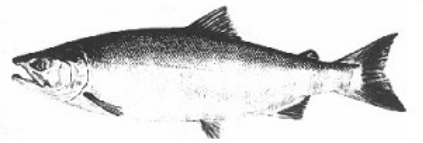
[d] No fishery conducted.

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

APPENDIX C. 2008 BRISTOL BAY SALMON OUTLOOK

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

Denby S. Lloyd, Commissioner
John Hilsinger, Director



Contact:
Slim Morstad, Area Management Biologist
Paul Salomone, Area Management Biologist
Phone: (907) 246-3341
Fax: (907) 246-3340

Issuing Area Office
PO Box 37
King Salmon, Alaska 99613
Date Issued: April 8, 2009
Time: 4:00 p.m.

BRISTOL BAY

2009 OUTLOOK FOR COMMERCIAL
SALMON FISHING

INTRODUCTION

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

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, KDLG, and KRUP. 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.

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Blue and Green permit district registration cards will be available at the Anchorage, King Salmon, and Dillingham offices beginning May 1. This year a new option is being offered to permit holders, PDF files of blue and green permit district registration cards will be posted on the Bristol Bay homepage (http://www.cf.adfg.state.ak.us/region2/finfish/salmon/bbayhome.php) and can be printed, completed, and mailed to the address on the printout. A permit holder may take salmon only after a department representative at one of the area offices has accepted their registration card.

Fishers 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."

During the 2009 season, catch, escapement, and announcements will be available at the Commercial Fisheries website:

http:/www.cf.adfg.state.ak.us/region2/finfish/salmon/bbayhome.php

REGULATORY CHANGES

There are no regulatory changes from the 2009 season.

SALMON OUTLOOKS

BAYWIDE

The forecasted Bristol Bay sockeye salmon run for 2009 is approximately 33.8 million fish. Based on the forecast, approximately 24.0 million fish are potentially available for commercial harvest (Table 1). Because of the projected surplus, fishers 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 fisheries managers to determine fishing opportunity.

The commercial salmon season in Bristol Bay opens June 1 by regulation. The east side 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

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Chinook salmon), during the early "shoulder" of the run. 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 indicates.

NAKNEK/KVICHAK DISTRICT

An inshore run of approximately 12.1 million sockeye salmon is expected for the Naknek/Kvichak District in 2009. Based on the forecast, the projected harvest in the Naknek/Kvichak District is approximately 7.0 million sockeye salmon; 2.5 million from the Kvichak River, 1.0 million from the Alagnak River and 3.5 million from the Naknek River. The 2009 Kvichak River minimum biological escapement goal will be 2.0 million. The **preseason** point goal for the Kvichak River is 2.6 million. If the return is greater or less than the forecast, the **inseason** point goal will be changed to reflect the actual inseason total run. The Naknek River escapement goal range is 800,000 to 1.4 million with the midpoint objective of 1.1 million. Sockeye salmon returning to the Naknek/Kvichak District are predicted to be 43% age-1.3, 33% age-1.2, 19% age-2.2, and 5% age2.3 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. Monday, June 1 and ending 9:00 a.m. Tuesday, 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 abundance over the past 2 years, special attention will be given to Chinook salmon run strength and effort levels early in June. 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.

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EGEGIK DISTRICT

A forecasted run of approximately 9.6 million sockeye salmon is expected for the Egegik River in 2009. The escapement goal range is 800,000 to 1.4 million sockeye with a midpoint of 1.1 million. Based on the forecast, the expected surplus potentially available for harvest is approximately 8.2 million fish. Approximately 40% of the run is expected to be age-1.3 fish, followed by age-2.3 (24%), age-2.2 (18%), and age-1.2 (18%) fish.

The proportion of harvest between set gillnets and drift gillnets (during the allocation period) in 2008 was approximately 15% and 85% respectively; the sockeye salmon allocation plan specifies 14% and 86%. In 2009, 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, the BOF adopted a regulation that directs the department to avoid "to the extent practicable", continuous fishing with set gillnet gear in the Egegik District. Therefore, set gillnet fishers in Egegik should expect breaks in fishing.

Based on the forecasted run size for 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 12. By emergency order, commercial fishing will be allowed in the Egegik District from 9:00 a.m. Monday, until 9:00 a.m. Friday. This schedule will be in effect beginning 9:00 a.m. Monday, June 1 and run through 9:00 a.m. Friday, June 12. After June 12, fishing will be scheduled according to sockeye salmon run strength. As in previous years, some openings could occur on short notice. Periods will also be adjusted to allocate harvest between drift and set gillnet gear groups.

The 2005 parent-year escapement for coho salmon was assessed using aerial surveys and produced an index count of 22,450 coho compared to the 1997-2005 average of 12,000. The commercial harvest in 2005 was approximately 20,600 coho, 68% of the recent 20-year average of 30,000. In 2009, 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, 2009).

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Ugashik District

The forecasted Ugashik River sockeye salmon run in 2009 is 2.4 million fish. The escapement goal range is 500,000 to 1.2 million sockeye with a midpoint of 800,000. Based on the forecast, Appendix C1.–Page 2 of 6

approximately 1.5 million fish are potentially available for harvest. Approximately 59% of the run is expected to be age-1.3 fish, 29% age-1.2, 12% age-2.2, and 1% age-2.3 fish.

The allocation of the sockeye salmon harvest between set gillnets and drift gillnets (during the allocation period) in 2008 was approximately 8% and 92% 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 2009.

The emergency order period in the Ugashik District begins Monday June 1 and commercial fishing will be allowed on a 9:00 a.m. Monday to 9:00 a.m. Friday schedule through 9:00 a.m. Friday, June 19. With an expected run to the Kvichak that exceeds a 40% exploitation rate stipulated in regulation, fishing time after June 19 will be allowed under EO authority and will depend on fishery performance and run strength indicators. 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 2009.

Parent-year coho salmon escapements in the Ugashik District were assessed by aerial surveys. The escapement index for Ugashik coho in 2005 was approximately 9,850. However, significant portions of the survey were done under conditions that prohibited a complete assessment of coho streams. Coho harvest in 2005 was approximately 8,000. Recent effort for coho salmon within the Ugashik District has been low. Directed commercial openings for coho salmon in 2009 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. 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 2009).

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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 2009, 5.0 million and 1.7 million respectively, are accurate, the department projects little if any fishing time in the WRSHA.

The Nushagak District Commercial Set and Drift Gillnet Sockeye Salmon Fisheries Management and Allocation Plan remains 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 geographically 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. 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 2009 forecast for Chinook salmon returning to the Nushagak River is 145,000 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, 70,000 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 2009. Permit holders should expect the first two directed Chinook openings on June 7 and June 11. 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

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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 2009 forecasted run of sockeye salmon for the Nushagak District is 8.9 million fish. Based on the forecast approximately 6.8 million fish could potentially be available for harvest. The forecast by river is: Wood River with approximately 5.0 million (escapement goal range 700,000 to 1.5 million with a midpoint of 1.1 million); the Igushik River with approximately 2.3 million (escapement goal range 150,000 to 300,000 with a midpoint of 225,000); and the Nushagak River with approximately 1.7 million (escapement goal range of 340,000 to 760,000 with a midpoint of 550,000). Approximately 33% of the forecasted run is age-1.2 sockeye salmon, <1% age-2.2, 62% age-1.3, and <1% age-2.3 fish.

Management strategies for 2009 include: 1) multiple directed Chinook salmon openings beginning in early June, 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 dictates 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. The management strategy for 2009 is to harvest Chinook salmon surplus to escapement needs prior to large numbers of sockeye arriving. 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 precipitate openings in the WRSHA. Commercial openings in the district would follow as allowed by escapement levels in the Nushagak River.

Igushik River sockeye salmon will be managed independently of the Nushagak/Wood sockeye salmon stocks. Subsistence harvest information from Igushik Beach will be the initial indicator of sockeye salmon entry into the Igushik River. When subsistence information indicates increased passage of sockeye salmon into the river, fishing periods for set gillnets will be announced. Drift gillnet openings (8–12 hours daily) in the Igushik Section will be added as needed to control sockeye salmon escapement. Igushik sockeye salmon returns can be quite variable relative to forecasted run strength. Management will incorporate a readiness to respond with early set gillnet openings, and an attempt to maintain the 6% sockeye harvest allocated to the Igushik Section set gillnet permit holders by only adding drift gillnet openings as needed. If escapement falls below what is necessary to meet the minimum escapement goal of 150,000, the department may reduce fishing area in the Nushagak Section to protect Igushik River sockeye.

In 2009, there is no forecast of the coho salmon run to the Nushagak River. Commercial openings will be announced based on market availability and indications of run strength from subsistence harvests. It is likely that a conservative weekly schedule of 30 hours per week will occur beginning in late July.

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.

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TOGIAK DISTRICT

Commercial fisheries in the Togiak District are managed under the Togiak District Salmon Management Plan (TDSMP), which was adopted by the Alaska Board of Fisheries in January 1996. The plan restricts permit holders from fishing in the Togiak District until July 24 if they have fished in any other district in Bristol Bay, and conversely, restricts permit holders from fishing in any other district until July 24 if they have fished in the Togiak District. The plan 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 down to 18,000 in 1997. Of the two surveys completed over the last 5 years, escapement estimates have averaged over 14,700 Chinook salmon and have both exceeded 13,500, 35% above the 10,000 fish escapement goal. Adequate yearly Chinook escapement can be attributed to mesh size restrictions in late June and early July, as well as to reductions in the weekly fishing schedule during late June. Based on the anticipated Chinook run strength, reduction in the weekly fishing schedule is again likely for the 2009 season. These reductions will likely limit commercial fishing to not more than 72 hours of fishing time during each of the last 2 weeks of June.

The 2009 inshore run of sockeye salmon to the Togiak River is forecasted at 770,000 fish. The sockeye salmon escapement goal for the Togiak River is 150,000 fish past the counting towers located at the outlet of Togiak Lake. Based on the forecast, approximately 600,000 sockeye salmon will potentially be available for commercial harvest. Approximately 10% of the run is expected to be 2-ocean fish and 90% 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. However, escapement will be monitored with consideration for run timing to assure achievement of escapement within the desired range. The Kulukak Section may close earlier than the weekly schedule to protect this small system where little escapement data is available due to a lack of enumeration projects.

Coho salmon returns are not formally 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.

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Table 1.-Spawning escapement goals, and expected harvests of sockeye salmon returning to Bristol Bay River systems in 2009.

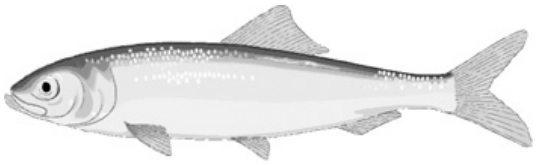
Millions of Sockeye Salmon							
	Forecasted Production by Age Class						
District River	1.2	2.2	1.3	2.3	Total	Spawning Goal	Total Harvest
NAKNEK-KVICHAK:							
Kvichak	2.05	1.75	1.47	0.04	5.30	2.65	2.48
Alagnak	0.70	0.01	1.27	0.05	2.03	1.02	0.95
Naknek	1.29	0.59	2.44	0.46	4.79	1.10	3.54
Total	4.04	2.35	5.18	0.55	12.11	4.76	6.97
EGEGIK	1.69	1.74	3.85	2.31	9.59	1.10	8.19
UGASHIK	.68	0.28	1.40	0.02	2.38	0.85	1.45
NUSHAGAK							
Wood	2.18	0.11	2.68	0.04	5.01	1.10	3.76
Igushik	0.51	0.09	1.64	0.03	2.26	0.23	1.96
Nushagak	0.26	0.00	1.22	0.03	1.66	0.55	1.06
Total	2.94	0.19	5.54	0.10	8.93	1.88	6.78
TOGIAK	0.06	0.02	0.65	0.04	0.77	0.15	0.60
BRISTOL BAY	9.41	4.58	16.62	3.02	33.78	8.74	23.99

APPENDIX D. 2009 TOGIAK HERRING 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
Matthew Jones, Assistant Area Biologist
Phone: (907) 842-5227
Fax: (907) 842-5937

Dillingham Area Office
546 Kenny Wren Road
P.O. Box 230
Dillingham, AK, 99576
Date Issued: February 18, 2009

2009 TOGIAK HERRING FISHERY INFORMATION

This notice is intended to provide information to participants in the 2009 Togiak herring fisheries. The 2009 herring biomass in Togiak District is forecasted to be 121,800 tons, a slight decrease from 2008. The 2009 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 35% of the projected herring run, with ages -6 and under making up another 39% (Figure 1). Ages 9-11 are expected to make up 14% 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 354 grams. This is a decrease of 40 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 121,800 tons, up to 24,360 tons will be available for harvest in 2009. Harvest allocation, in accordance with the BBHMP, will be:

Fishery	**Harvest Allocation**
Spawn-on-Kelp	1,500 tons
Dutch Harbor Food and Bait	1,600 tons
Togiak Sac Roe	21,260 tons
Purse Seine (70%)	14,882 tons
Gillnet (30%)	6,378 tons

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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 2009, 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 2009 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. In order to maximize fishing time, it is the department's plan to open the fishery as soon as threshold biomass is established and allow individual companies to maximize their processing capacity and decide what quality is suitable for their individual market.

Purse Seine

In recent years, the seine fleet has operated in conjunction with the processing industry in cooperative groups. This is likely to be the case again in 2009. Therefore, 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 department planning on opening the 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 6,378 tons, while maintaining the specified 70/30 purse seine/gillnet ratio. Product quality will be a priority throughout the gillnet fishery.

In 2009, 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 ever dwindling number of participants in the gillnet fishery. As in 2008, 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. Obviously, until it is determined that marketable quality fish are present, participants should test cautiously with a small portion of gear.

ADF&G OPERATIONS 2009

Beginning in late April, 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

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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, and 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 one to two for gillnet sets and up to four for purse seine sets.

3 Samples should weigh approximately 10 to 15kg (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.

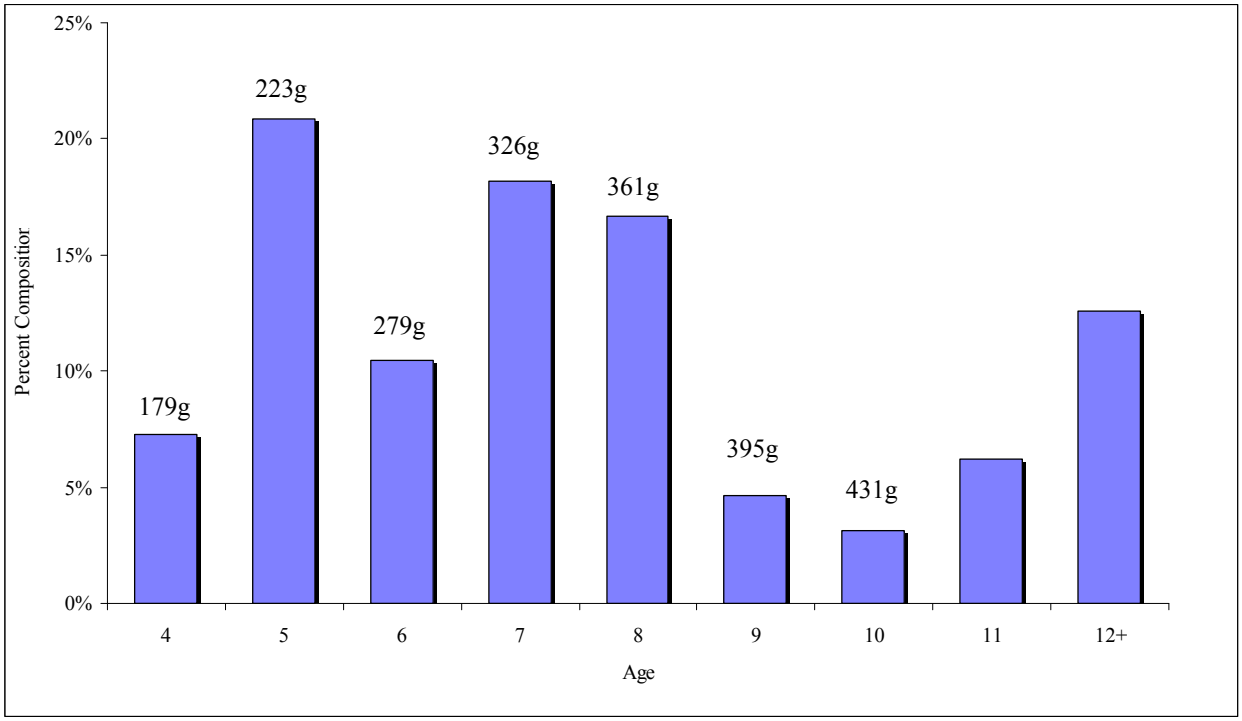

Figure 1. Forecasted age composition in numbers of fish for the Togiak inshore herring run forecast for 2009. Forecasted average weight (grams), by age, is also presented.