Fishery Management Report No. 13-20

2012 Bristol Bay Area Annual Management Report

by

Matt Jones,

Tim Sands,

Slim Morstad,

Paul Salomone,

Greg Buck,

Fred West,

Charles Brazil,

and

Ted Krieg

May 2013

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

Symbols and Abbreviations

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

Weights and measures (metric)

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

Weights and measures (English)

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

Time and temperature

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

Physics and chemistry

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

General

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

Mathematics, statistics

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

FISHERY MANAGEMENT REPORT NO. 13-20

2012 BRISTOL BAY AREA ANNUAL MANAGEMENT REPORT

by

Matt Jones, Tim Sands,
Alaska Department of Fish and Game, Division of Commercial Fisheries, Dillingham

Slim Morstad,
Alaska Department of Fish and Game, Division of Commercial Fisheries, King Salmon

Charles Brazil, Greg Buck, Fred West, Paul Salomone
Alaska Department of Fish and Game, Division of Commercial Fisheries, Anchorage

and

Ted Krieg
Alaska Department of Fish and Game, Division of Subsistence, Dillingham

Alaska Department of Fish and Game
Division of Sport Fish, Research and Technical Services
333 Raspberry Road, Anchorage, Alaska, 99518-1565

May 2013

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.adfg.alaska.gov/sf/publications/ This publication has undergone regional peer review.

Matt Jones, Tim Sands,
Alaska Department of Fish and Game, Division of Commercial Fisheries,
546 Kenny Wren Road, P.O. Box 230, Dillingham, AK 99576 USA

Ted Krieg,
Alaska Department of Fish and Game, Division of Subsistence,
546 Kenny Wren Road, P.O. Box 230, Dillingham, AK 99576 USA

Slim Morstad,
Alaska Department of Fish and Game, Division of Commercial Fisheries,
Main Street, P.O. Box 37, King Salmon, AK 99613 USA

and

Charles Brazil, Greg Buck, Fred West, and Paul Salomone
Alaska Department of Fish and Game, Division of Commercial Fisheries,
333 Raspberry Road, Anchorage, AK, 99518 USA

This document should be cited as:
Jones, M., T. Sands, S. Morstad, C. Brazil, G. Buck, F. West, P. Salomone, and T. Krieg. 2013. 2012 Bristol Bay area annual management report. Alaska Department of Fish and Game, Fishery Management Report No.13-20 , Anchorage.

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

LIST OF TABLES

LIST OF TABLES (Continued)

LIST OF FIGURES

LIST OF APPENDICES

LIST OF APPENDICES (Continued)

ABSTRACT

The 2012 Bristol Bay Area Management Report is the 51st consecutive annual volume reporting on management activities of the Alaska Department of Fish and Game, Division of Commercial Fisheries staff in Bristol Bay. The report emphasizes a descriptive account of the information, decisions, and rationale used to manage the annual Bristol Bay commercial salmon (sockeye *Oncorhynchus nerka*, Chinook *O. tshawytscha*, chum *O. keta*, pink *O. gorbuscha*, and coho *O. kisutch*) and Pacific herring (*Clupea pallasii*) 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 2012. The narrative is constructed beginning with a broad historical perspective followed by annual detail of individual districts. To aid in the use of this document as a reference source, all narrative and data tabulations in this volume are combined in 2 sections: salmon followed by herring. For long term context, historical data are compiled into appendices following the same format, with salmon followed by herring. The extensive set of tables has been updated to record previously unlisted data for easy reference. Fisheries data in this report supersedes information in previous reports. All 2012 harvest data is considered preliminary pending processing of fish tickets. Readers should note that harvest and escapement data are routinely presented throughout the narrative in rounded form for simplicity. Corrections or comments should be directed to the Dillingham office. Attention: Editor Matt Jones, Westside Assistant Area Management Biologist, 546 Kenny Wren Road, Dillingham, AK 99576.

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

INTRODUCTION

MANAGEMENT AREA DESCRIPTION

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

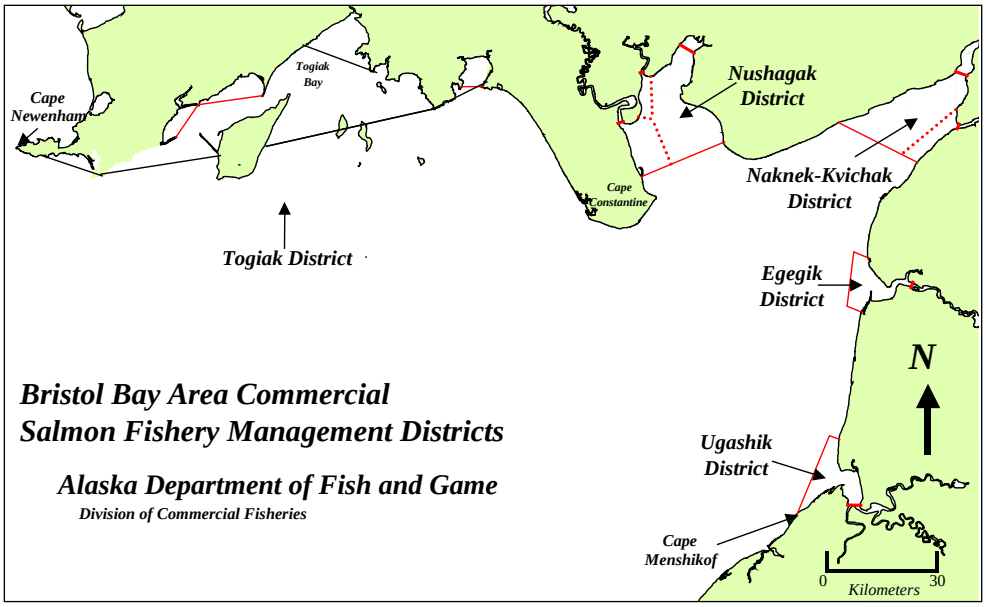


Figure 1.–Bristol Bay area commercial fisheries salmon management districts.

OVERVIEW OF BRISTOL BAY SALMON FISHERIES

The 5 species of Pacific salmon found in Bristol Bay are the focus of major commercial, subsistence, and sport fisheries. Annual commercial catches for the most recent 20-year span (1992–2011) average 25.3 million sockeye, 67,000 Chinook, 924,000 chum, 253,000 (even-years only) pink, and 79,000 coho salmon (Appendices A3–A7). Since 1992, the value of the commercial salmon harvest in Bristol Bay has averaged $116.4 million, with sockeye salmon being the most valuable, averaging $114.4 million annually (Appendix A24). Subsistence catches are comprised primarily of sockeye salmon and average 136,000 fish (Appendix A26). 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 2 drift permit holders to concurrently fish from the same vessel and jointly operate up to 200 fathoms of drift gillnet gear. In 2009, this regulation was modified so that it does not apply when the Naknek Special Harvest Area is in use. Also in 2009, a regulation was adopted that allowed set gillnet permit holders to own and operate 2 permits with associated legal amounts of gear. Drift gillnet permits are the most numerous at 1,862 in Bristol Bay (Area T), and of those, 1,740 registered to fish in 2012. There are a total of 979 set gillnet permits in Bristol Bay and of those, 883 fished in 2012 (Appendix A2).

2012 COMMERCIAL SALMON FISHERY

RUN STRENGTH INDICATORS

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

PRESEASON FORECASTS

Total inshore sockeye salmon production for Bristol Bay in 2012 was forecast to be 32.3 million (Table 1). The Bristol Bay sockeye salmon inshore harvest was predicted to reach 22.8 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 2012 was the sum of individual predictions for 9 river systems (Kvichak, Alagnak, Naknek, Egegik, Ugashik, Wood, Igushik, Nushagak-Mulchatna, and Togiak) and 4 major age classes (ages 1.2, 1.3, 2.2, and 2.3, plus ages 0.3 and 1.4 for Nushagak) (Table 2). Adult escapement and return data from brood years 1976 to 2008 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 2002 through 2011.

SOUTH UNIMAK/SHUMAGIN ISLANDS FISHERY

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

Preliminary catch information for 2012 indicates that the June Shumagin Islands fishery landed 628,000 sockeye salmon, and the June South Unimak fishery landed 900,000 sockeye salmon (Appendix A25). The June South Unimak sockeye and chum salmon harvests represent 101%

and 102% of the 20-year average, respectively. In the June Shumagin Islands fishery, sockeye and chum salmon harvests represent 138% and 99% of the 20-year average. This equates to an overall sockeye salmon harvest 16% above the 20-year average and a chum salmon harvest 1% above the 20-year average.

PORT MOLLER TEST FISHERY

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

GENETICS

Over the last 12 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 2 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 use in the estimates of total runs and development of brood tables. It is important to note that multiple years of data will need to be collected before within- and between-year variation can be assessed. Only after that analysis has been completed can migration patterns among fishing districts be examined.

Genetic sampling was added to the Port Moller test fishery project starting in 2004 and continued through 2012. The intent was to use inseason genetic analysis to identify components of the annual run in time to assist management decisions for individual stocks. ADF&G genetics staff has the ability to complete analysis and deliver results in 3 to 5 days depending on several factors (e.g. timing of airline flights, weather on the fishing grounds, etc). The travel time for fish from Port Moller to Bristol Bay is approximately 7 days depending on several factors (e.g. water temperature, wind, etc). Therefore, results from genetic sampling should be available before those fish reach the fishing districts of Bristol Bay.

ECONOMICS AND MARKET PRODUCTION

In 2012, exvessel value of the inshore commercial salmon harvest was estimated at $115.4 million (Table 3). The 10-year (2002–2011) average exvessel value of Bristol Bay commercial salmon fisheries was $103.8 million (Appendix A24).

During the 2012 season, 8 companies canned, 26 froze, 14 exported fresh, and 5 cured salmon in Bristol Bay. Product was exported by air by 22 companies and exported by sea by 24 companies. A total of 31 processors/buyers reported that they processed fish from Bristol Bay in 2012 (Table 4).

RUN AND HARVEST PERFORMANCE BY SPECIES

Sockeye Salmon

The 2012 inshore sockeye salmon run of 30.0 million fish was below the preseason forecast of 32.3 million (Table 1). Run performance by river system varied in relation to forecasts, but aggregate runs were below forecast in Egegik and Nushagak districts, above forecast in Naknek-Kvichak and Togiak districts, and at forecast in Ugashik district. Sockeye salmon dominated the inshore commercial harvest, totaling 20.6 million fish (Table 5). Sockeye salmon escapement goals were met or exceeded in all systems where spawning requirements have been defined.

Chinook Salmon

Chinook salmon harvests in 2012 were below the recent 20-year averages in all districts except Naknek-Kvichak. The 2012 baywide commercial harvest of 17,000 Chinook salmon was well below the 20-year average of 67,000 fish. The largest producer of Chinook salmon in the Bay, the Nushagak District, achieved a harvest of 12,000 compared to the 20-year average of 54,000 fish (Appendix A4).

Chum Salmon

In 2012, the commercial harvest of 666,000 chum salmon was 28% less than the 20-year average of 924,000 fish. Chum salmon catches were below 20-year averages in all districts except Togiak (Appendix A5).

Pink Salmon

Bristol Bay has a dominant even-year pink salmon cycle. In 2012, the baywide pink salmon harvest was 909,000 fish, well above the 20-year average. Most pink salmon harvest occurs in Nushagak District; 877,000 fish were harvested, representing five times the 20-year average (Appendix A6).

Coho Salmon

The 2012 baywide coho salmon commercial harvest of 110,000 was above the recent 20-year average of 79,000 fish (Appendix A7).

SEASON SUMMARY BY DISTRICT

Naknek/Kvichak District

The 2012 forecast for the Naknek/Kvichak District projected a total run of 15.0 million sockeye salmon; 5.5 million for escapement and 9.5 million for harvest (Table 1). The forecast by river system was 6.8 million for the Kvichak River, 1.9 million for the Alagnak River, and 6.2 million for the Naknek River (Table 2). Sustainable escapement goals (SEG) are a minimum 2.0 million for the Kvichak River and a range of 800 thousand to 1.4 million for Naknek River (Appendix A1). The actual total inshore run to the district for 2012 was 15.9 million sockeye salmon (Table 1). Commercial harvest was 10.0 million sockeye salmon (Appendix A3). The Naknek River Special Harvest Area (NRSHA) did not open in 2012.

ADF&G does not forecast Chinook, chum, coho, or pink salmon for systems in Naknek/Kvichak District. Commercial harvest of Chinook salmon has remained relatively small due to current mesh size restrictions that have been in effect since the early 1990s. Mesh restrictions are set by EO and prohibit gillnets with a mesh size larger than 5.5 inches until July 20.

For the commercial fishery to begin in the full Naknek/Kvichak District, the preseason sockeye salmon forecast for the Kvichak River must be 30% greater than the lower end of the SEG. Should the forecast be below that level, fishing will begin in special harvest areas of Naknek, Egegik and Ugashik Rivers (5 AAC 06.360 (h)). Based on the 2012 sockeye salmon forecast for the Kvichak River, these restrictions were not implemented on June 1. However, fishing with drift gillnets was restricted to the Naknek Section when the fishery first opened while set gillnets were allowed to fish the entire district. Fishing periods during the first 3 weeks of June were from 9:00 a.m. Monday to 9:00 a.m. Friday, beginning 9:00 a.m. Monday, June 4 and ending 9:00 a.m. Friday, June 22 (Table 6).

The Naknek-Kvichak District opened at 9:00 a.m. Monday, June 4, with the first deliveries occurring June 12 (Table 7). During the week of June 11and the 96-hour period that began at 9:00 a.m. Monday, June 18, harvest numbers are confidential (Table 7). Following the closure at 9:00 a.m. June 22, subsequent fishing periods were based on Naknek River escapement.

Escapement counting towers for Naknek and Kvichak rivers were operational during the 2012 season, while the Alagnak tower project was eliminated due to budget constraints. The Naknek River tower began counting on June 19 and the Kvichak River tower began on June 20 (Table 8). The SEGs for both systems were achieved (Appendix A1).

The Kvichak River test fishing project began on June 22 and commercial district test fishing occurred a few days later (Tables 9 and 10). At the end of the weekly fishing schedule on June 22, sockeye salmon passage rates were less than anticipated for Naknek River based on historical run timing curves. Expected escapement through June 22 for Naknek River was 6,450 sockeye salmon while actual escapement was 816 fish (Table 8). For Kvichak River, only 342 sockeye salmon had passed the tower through June 22 (Tables 8 and 9). With escapement below projections, no commercial fishing periods were anticipated until fish were documented in the district or escapement increased. ADF&G test fished in the district on the morning tide of June 25; 25 sets were made in the Naknek Section and indices ranged from a low of 35 to a high of 310 (Table 10). Fish were present throughout the section so a fishing period was scheduled for the morning tide on June 26. A fishing schedule of one tide per day continued until June 30 (Table 6).

By June 30, sockeye salmon escapement to Naknek River was 2 days ahead of projections, while Kvichak River escapement remained about one day behind the cumulative escapement goal curve. By regulation, when this occurs, Naknek-Kvichak District is closed and special harvest areas open to commercial fishing in order to minimize harvest of Kvichak bound sockeye salmon. However, in 2012 genetic information collected from the Port Moller test fishery indicated a greater than forecast sockeye salmon run to Kvichak River. Based on genetic information, the district remained open; with the drift gillnet fleet confined to the Naknek Section (Table 6).

During the week of July 1, escapement into both river systems remained at expected levels, which justified fishing both tides each day with set gillnets (which remained below the 16 percent allocation). The drift gillnet fleet fished a portion of one tide per day through July 3. From July 4 to 9, the drift gillnet fleet fished a portion of both tides each day, while the set gillnet fleet fished continuously (Table 6). However, by July 12 escapement into both rivers began to fall behind projected levels and harvest rates in the commercial districts began to decline (Table 7). By July 11, drift gillnet harvest was 87% and set gillnet harvest was 6% in the

Naknek Section and 7% in the Kvichak Section. With the set gillnet fleet behind in their harvest allocation, they continued fishing while the drift gillnet fleet stood down from July 12 until they resumed fishing at 11:00 p.m. Sunday, July 15. They fished continuously from that point until 9:00 a.m. Friday July 27, when the district went on the fall schedule of 9:00 a.m. Monday to 9:00 a.m. Friday until September 30 (Table 6). The last delivery in the Naknek-Kvichak District occurred on August 16 (Table 7).

The total harvest in Naknek/Kvichak District was 9,992,068 sockeye salmon (Table 11); the 20-year average is 7.8 million (Appendix A3). The Chinook salmon total harvest was 863; the 20-year average is 2,500 fish (Appendix A4). The chum salmon harvest totaled 122,913 fish; the 20-year average is 168,000 (Appendix A5). There was a reported commercial harvest of 3,535 pink salmon and 423 coho salmon (Appendix A6 and A7).

Egegik District

The 2012 Egegik District harvest of 4.9 million sockeye salmon was 13% below the projected harvest of 5.6 million fish (Table 1) and was the sixteenth largest in the last 20 years (Appendix A13). The escapement of 1,233,900 fish was within the SEG range of 800,000 to 1.4 million (Appendix A1). With an approximate inshore total of 6.1 million fish to the Egegik District, the 2012 run ranks fifteenth over the most recent 20 years and represents 91% of the forecast of 6.7 million fish (Table 1; Appendix A13). In 2012, the midpoint of the sockeye salmon run was July 5, one day later than the 20-year average of July 4. Water temperatures in the Bering Sea were below average well into June, leading to speculation the 2012 run would be late.

The 2012 preseason projection for a Kvichak River run that would provide for the minimum escapement of 2.0 million sockeye salmon allowed commercial fishing to begin in the full Egegik District. The district opened to commercial salmon fishing on June 4 (Table 6). Prior to 2008, fishing was passively managed using a 3 day per week schedule early in the season. In anticipation of large runs in 2008, 2009, and 2010, the district was on a 4 day per week schedule until June 16 and then was actively managed until the fall regulatory schedule took effect in July. However, because of concerns over Chinook salmon escapement, the 3 day per week schedule (9:00 a.m. Monday to 9:00 a.m. Wednesday and 9:00 a.m. Thursday to 9:00 a.m. Friday) was used in 2012 from June 4 until June 15 (Table 6).

First deliveries were recorded June 5 (Table 12). Run assessment information on Friday, June 8 indicated low abundance within the district, which remained closed over the weekend of June 9–10.

The district reopened 9:00 a.m. June 11 as scheduled. Harvest for the week of June 11–15 totaled 16,000 fish demonstrating low volume (Table 12). The district closed as scheduled at 9:00 a.m. June 15 and remained closed June 16 (Table 6).

Daily inriver test fishing, which provides estimates of sockeye salmon passage into the lower Egegik River, began on June 15 at established sites just upstream of Wolverine Creek (Table 13). The Egegik River counting tower, which provides daily estimates of sockeye salmon passage into Becharof Lake, became operational at midnight on June 19 and finished the day with a passage estimate of 6 sockeye salmon (Table 13).

Egegik River sockeye salmon runs in 2010 and 2011 were smaller than anticipated and abundance in the last half of the season declined rapidly. This resulted in protracted closures during the second week of July in order to reach the lower end of SEG in both years. In 2012

ADF&G began the season more conservatively. Fishermen were advised: 1) an escapement target of the midpoint or above was desirable for 2012, 2) the department would make a concerted effort to ensure escapement from the early portion of the run, and 3) early fishing opportunity depended on fish passage into the Egegik River.

Because the inriver test fishery indicated movement of fish into the river, an 8 hour set gillnet opening was allowed on June 19 to assess run entry and fish distribution within the district. This period resulted in a harvest of 14,000 fish, indicating volume was low (Table 12).

Early in the 2012 season fish exhibited a tendency to hold in the Egegik Lagoon. Escapement into the river was occurring, as indexed by the inriver test fishery, but the fish were not passing the tower in a timely manner. However, the index fishery and the results from the set gillnet opening June 19 indicated that volume was low. The district remained closed on June 20.

An aerial survey of the Egegik Lagoon on June 21 provided an estimate of approximately 50,000–60,000 fish in the lagoon, while tower counts from June 19 to June 21 totaled 6 fish (Table 8).

Considering the number of fish in the lagoon and information from the test fishery indicating a decrease in passage, another 8 hour set gillnet period was permitted on June 22 (Tables 6 and 13). Harvest from this period was less than 5,000 fish, confirming the low abundance of fish suggested by the test fishery data (Table 12).

On June 23 fish started moving past the tower and by June 24 cumulative escapement totaled just over 60,000 fish. This resulted in 5 hour drift and 8 hour set gillnet openings on the evening tide of June 25 (Table 6). Harvest from this tide totaled 205,000 fish (Table 12). Meanwhile test fishery indices showed increased passage into the river, which resulted in an opening for both gear groups during the evening tide of June 26. Harvest from this period was 238,000 fish (Table 12). Escapement on June 26 was 105,000, with a one-day travel time from the test fishery to the counting towers (Table 13).

With escapement now ahead of run timing curves, 6 hour drift and 8 hour set gillnet openings occurred during the evening tide on June 27. Harvest from this period was 117,000 fish (Tables 6 and 12) while test fishery indices declined. Because of the decrease in abundance indicated by district harvest and the inriver test fishery, the district remained closed on June 28 (Tables 6 and 13).

Information from the Port Moller test fishery indicated an increase in salmon volume could reach the eastside districts as early as June 29. ADF&G implemented a guarding strategy, splitting the gear groups to allow for some harvest while simultaneously preventing a large escapement event. On June 29, the drift gillnet fleet was allowed to fish the evening tide for 5 hours while the set gillnet group fished the daytime tide for 8 hours (Table 6). This strategy was repeated on June 30 with combined harvest from the 2 days near 550,000 fish (Table 12). Escapement began to fall behind desired levels and the district was closed on July 1.

Inriver test fishery indices improved on July 1 and an 8 hour set gillnet period was announced for the daytime tide of July 2 (Tables 6 and 13). Harvest from this period was 121,000, which is large for a set gillnet only opening (Table 12). Escapement information showed that fish passage into the Egegik River had increased and an aerial survey on July 3 revealed approximately 70,000–80,000 fish in the Egegik River Lagoon (Table 13). This prompted 4 hour drift and 8 hour set gillnet openings during the daytime tide on July 3 (Table 6) with a

harvest of 535,000 fish (Table 12). Overnight inriver test fishery indices showed continued passage into the river and the daytime indices showed a large group of fish entered the river during the afternoon tide on July 3. A short notice opening was announced for both gear groups on the evening tide of July 3–4 (Tables 6 and 13) for 18.5 hours to slow the rate of passage. Harvest from this opening was 740,000 sockeye salmon, the largest single day harvest of the season in Egegik District (Table 12).

On July 4, escapement counts at Egegik River tower were 150,000 fish and inriver test fishery indices showed escapement continuing at high rates (Table 13). Harvest allocation favored the set gillnet group, so the drift gillnet fleet was allowed a 4 hour opening on the evening tide of July 4–5 and both groups were open for the daytime tide on July 5. The drift gillnet group fished a 16 hour opening on July 6, while the set gillnet group fished an 8 hour daytime opening, to slow escapement and adjust the allocation between gear groups (Table 6). The fish represented by this series of strong inriver indices began to pass the counting towers with 205,000, 181,000 and 134,000 daily escapements on July 5, 6, and 7, respectively (Table 13). The lower end of the escapement goal range of 800,000 fish was surpassed on July 6.

Fishing returned to daily single tide opportunity for both gear groups from July 7 to 10 (Table 6). On July 10, counts at Egegik River tower were 71,000 fish, with cumulative escapement reaching 1.1 million, surpassing the midpoint of the escapement goal range and prompting the district to be opened for 2 tides per day for both gear groups from July 11 to 15 (Tables 6 and 8). Beginning July 16, continuous fishing was allowed until July 27 when the fall schedule went into effect.

The 2012 Egegik River sockeye salmon run was below forecast and exhibited average but compressed run timing, with the bulk of the run occurring over a 6 day period from July 2 to 7 (Tables 1, 8, and 12). However, the run tapered quickly with daily harvest dropping below 100,000 on July 15 (Table 12). By the end of the EO period on July 17, harvest was 4.8 million and cumulative escapement was 1,233,900 sockeye salmon (Table 8).

The 2012 Egegik River sockeye salmon run was mostly 2- and 3-ocean fish (Table 6), which came from the 2007 and 2008 escapements of 1.4 and 1.3 million fish, respectively. Commercial fishermen harvested approximately 80% of the 2012 Egegik District inshore sockeye salmon run, compared to the average of 84% for the most recent 20-year period. Peak tower counts occurred July 5 and 6 with 205,000 and 181,000 sockeye salmon counted, respectively (Table 8). During the period from June 16 to July 17, a total of 189 hours were fished by the drift gillnet group (16.75 hours more than 2011) and 227.5 hours were fished by the set gillnet gear group (4.75 hours less than 2011), equating to 25% and 30%, respectively, of the 753 available hours. By the end of the EO period on July 17, harvest allocations were 83% drift and 17% set gillnet (Appendix A9).

Commercial harvest of other salmon species in the Egegik District was 39,780 fish, or about 0.8% of the total (Table 5). The reported Chinook salmon harvest was 24 fish, 97% below the 20-year average of 906 fish (Appendix A4). The district chum salmon harvest of 38,191 fish was 48% below the recent 20-year average of 73,000 fish (Appendix A5). Pink salmon harvest was reported as 285. Historical pink salmon harvest information is presented in Appendix A6. The coho salmon harvest of 1,286 fish is 4% of the recent 20-year average of 23,000 fish (Appendix A7).

In summary, the 2012 harvest of 4.9 million sockeye salmon in the Egegik District ranked sixteenth out of the last twenty years, was 47% lower than the most recent 20-year average of approximately 8.5 million fish, and was 13% below forecast (Table 1; Appendix A13). The fishery harvested 80% of the run into the district compared to the 20-year average of 84%. The midpoint of the run was July 5, one day later than the 20-year average. Peak effort occurred on July 8, when 392 drift gillnet vessels, including 87 with dual permits, registered to fish in the district (Table 15). There were 11 processors registered to purchase fish in the Egegik District this season (Table 4).

Ugashik District

The 2012 inshore sockeye salmon run to the Ugashik District of 3.1 million fish ranks twelfth in the most recent 20 years (1992–2011) and was 1% below forecast (Table 1, Appendix A14). The midpoint of the run was July 7, three days earlier than the most recent 20-year average of July 10. The commercial sockeye salmon catch of approximately 2.4 million fish was 14% below the 20-year average and ranked ninth for the same period (Appendix A3). Sockeye salmon escapement to the Ugashik River was 670,578, within the SEG range of 500,000 to 1,200,000 fish (Appendix A1).

The district was opened for a fishing schedule of 4 days per week (9:00 a.m. Monday to 9:00 a.m. Friday) on June 4 by EO (Table 6). Initial landings occurred on June 11 (Table 16). 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 15, when fishery management switched to a tide by tide basis (Table 6).

The preseason forecast for the Ugashik District projected a harvest of 2.2 million sockeye salmon (Table 1). Accordingly, commercial fishermen were advised that fishing time after June 15 would depend on inriver test fishery results, tower escapement levels, and fishery performance.

Another important advisory given to fishermen involved the timing of the escapement. During the past several years a predominance of escapement came from early portions of the run. Fishermen were made aware that ADF&G wished to manage the escapement to better represent the latter portions of the run in the 2012 escapement.

Harvest through June 15 was well below the historical average for the first 2 weeks of June (Table 16). With no escapement assessment, and available indicators suggesting low levels of abundance, the district was closed June 15.

In response to unrestricted transfer between eastside districts until June 25, concurrent openings of districts were used to discourage movement of the drift gillnet fleet between districts that occurs when district openings are offset. Between June 15 and June 25, Egegik River escapement was the primary factor for opening Egegik and Ugashik districts. Since escapement into the Egegik River was low and no drift gillnet openings occurred in Egegik District between June 16 and June 24, the Ugashik District also remained closed.

Initial information from the inriver test fishery became available on June 23 (Table 17). Inriver test fishing, which occurs about 3 miles upstream of Ugashik Village, provided a daily estimate of sockeye salmon passage into the lower part of the Ugashik River. First information suggested that fish were passing into the river but volume was low.

In keeping with the intent to better represent later components of the run in the escapement, 8 hour drift and 10 hour set gillnet openings occurred on June 25 resulting in a harvest of 76,000 fish. A 9 hour opening for both gear groups on June 26 added a harvest of 105,000 fish and 9 hour drift and 12 hour set gillnet openings on June 27 yielded an additional 137,000 fish (Tables 6 and 16). No fishing was permitted on June 28 to allow escapement.

The escapement tower project, operating about 24 miles upstream of Ugashik Village, started counting at midnight on June 27 and ended the day with an estimated passage of 5,724 fish (Table 8). Since the inriver test fishery indices had been similar for the initial 4 days of operation, this first day passage was used to anticipate fish downstream of the tower. Travel time from the inriver test fishery is usually 5 to 7 days.

Based on assessment of escapement, and increasing inriver indices, fishing periods occurred once daily until July 3 (Table 6). Harvest during this period was 727,000 and cumulative escapement was near 31,000 fish (Tables 16 and 17). The district was closed on July 3 to allow for escapement.

A single tide was fished by both gear groups on July 4 followed by a set gillnet period on July 5 (Table 6). Set gillnet only openings can be used to balance allocation, to gauge if fish are entering the river, and to distribute more fish within the district without the presence of the drift gillnet group.

Beginning July 6, ADF&G adopted a less aggressive harvest strategy and concentrated on achieving escapement from the latter portion of the run. The district closed on July 6 but 8 hour drift and 10 hour set gillnet periods were allowed on July 7 (Table 6). Reports from the fishing grounds indicated a volume of fish inside the district. Harvest from the July 7 period was 339,000 fish and the largest of the season (Table 16).

Escapement indices stayed at about the same rate indicating that fish were not traveling fast or the volume was not as large as indicated so fishing time on July 8 was reduced to 5 hour drift and 8 hour set gillnet openings (Tables 6 and 17). No fishing occurred on July 9 to allow for escapement.

Escapement indices rose on July 8 and again on July 9, 10 and 11. Through July 8, cumulative harvest was 1.6 million and cumulative escapement was 111,000, but with several days of fish passage inriver, escapement was progressing at a desirable pace (Table 17).

Single tide openings were permitted July 10 to 12 resulting in a combined harvest of 395,000 fish (Table 16). Meanwhile fish represented by inriver indices on July 8 began arriving at the counting tower, demonstrating a 3 to 4 day travel time (Table 17). Through July 12 cumulative escapement was 380,000, with counts of 111,000 and 72,000 on July 11 and 12, respectively (Table 8). The district remained closed on July 13 to allow for additional escapement.

Fishing resumed on July 14 and 15 with single tide openings of 8 hours for drift and 10 hours for set gillnet (Table 6). July 16 was closed to allow for additional escapement from this segment of the run. The minimum of the escapement goal range of 500,000 fish was surpassed on July 16 and fishing was then allowed continuously until July 27 when the fall schedule went into effect (Table 6).

Harvest declined rapidly from July 14 to 20 (Table 16). Preliminary total harvest of all species was 2,397,874 fish and cumulative escapement at the counting tower was 670,578 sockeye salmon, within the SEG range of 500,000 to 1,200,000 (Table 5 and Appendix A1).

By the end of the emergency order period (July 17), set gillnet fishermen caught approximately 10% and drift gillnet fishermen caught 90% of the sockeye salmon harvest (Appendix A9). The allocation specified in regulation is 10% set gillnet and 90% drift gillnet. Between June 23 and July 17, set gillnet periods totaled 153 hours, or 84 hours less fishing time than in 2011, while drift gillnet periods totaled 110 hours, or 93.5 hours less than in 2011.

The preliminary harvest of 86 Chinook salmon represents 7% of the recent 20-year average of 1,307. Chinook salmon escapement is assessed by aerial surveys in the Dog Salmon and King Salmon rivers, major tributaries of the Ugashik River and biggest producers of this species in the district. In 2012, high water and poor weather made for marginal survey conditions. Observed escapement totaled 229 Chinook salmon (Appendix A4).

The chum salmon harvest of 30,244 fish represents 43% of the 20-year average of 71,000. Chum salmon escapement was assessed on the same surveys as Chinook salmon and was hampered by the same poor conditions. Observed chum salmon escapement totaled 10,205 fish (Appendix A5).

Preliminary information indicates no coho salmon were harvested in Ugashik District in 2012.

In summary, the 2012 Ugashik District fishery harvested approximately 78% of the sockeye salmon run to the district compared to the 20-year average exploitation rate of 69%. Days of peak harvest occurred on July 2 and July 7 when 242,034 and 339,796 fish were caught, respectively (Table 16). The midpoint of the run was July 7, three days earlier than the 20-year average of July 10. Days of peak escapement were July 11 and 12, when 111,312 and 71,646 sockeye salmon, respectively, passed the counting tower (Table 8). Peak effort occurred on July 15 when 290 drift gillnet permit holders, including 87 with dual permits, registered to fish in the district (Table 15). There were 9 processors registered to purchase fish in the Ugashik District this season (Table 4).

Nushagak District

The 2012 Nushagak District total inshore sockeye salmon run was 4.1 million fish, 40% below the preseason forecast of 6.8 million fish (Table 1). Commercial sockeye salmon harvest in Nushagak District reached 2.7 million fish, 45% below the preseason projected harvest of 4.9 million fish and 47% below the 1992–2011 average harvest (Table 1 and Appendix A15). Escapement in the district's 3 major river systems was 764,211 for Wood River, 193,326 for Igushik River, and 432,438 sockeye salmon for Nushagak River, which was within escapement goal ranges for all 3 rivers (Tables 18 and 20; Appendix A1). Chinook salmon escapement into Nushagak River was 107,786, 43% above the 75,000 inriver goal, and harvest was 11,501 Chinook salmon in Nushagak District (Tables 18 and 19).

In 2012, there was no forecast for Nushagak District Chinook salmon. Prior to the 2012 season, a meeting with stakeholders determined that directed openings for Chinook salmon would only occur if escapement warranted such openings. This decision was based on the poor Chinook salmon runs in 2010 and 2011 and the lack of a reliable forecast for the 2012 season (Appendix A19). 2012 Chinook salmon run entry was slow to develop early in the season but the run was strong overall. Due to poor early season returns, there were no directed Chinook salmon openings in 2012.

The sonar escapement enumeration project at Portage Creek was fully operational on June 5 (Table 18). Early season Chinook salmon counts were below expectations and continued to be

below the inriver goal curve until July 1. By July 1, ADF&G had switched to sockeye salmon management and there was no longer consideration of directed Chinook salmon openings.

The total reported commercial Chinook salmon harvest in 2012 was 11,501 fish, with an additional 247 fish reported in the Wood River Special Harvest Area (WRSHA; Table 19). The harvest of 11,501 Chinook salmon is well below the 1992–2011 average harvest of 53,667 fish for the Nushagak District (Appendix A4).

Sockeye salmon enumeration on the Wood River began June 19 (Table 20). By June 25, the cumulative escapement was approaching 100,000 sockeye salmon, primarily due to the increase in escapement that was occurring on June 25 (Table 20). ADF&G managers announced a set gillnet opening for the morning of June 26, expecting a good commercial harvest and continued escapement in the Wood River (Table 6). Initial reports from the commercial opening indicated fishing was below expectations and the Wood River sockeye salmon escapement rate decreased on June 26 relative to the June 25 escapement of 72,120 fish (Table 20). The decreased escapement rate and poor fishing reports prompted the department to allow no additional fishing time for June 26. A set gillnet opening was announced for the morning of June 27 (Table 6).

Initial reports from the commercial fishery on the morning of June 27 indicated marginally better fishing. Wood River sockeye salmon escapement overnight remained at lower than expected levels. However, aerial surveys indicated there might be more fish moving into the rivers on the morning of June 27. Department managers opened the set gillnet fishery at 8:00 p.m. June 27 to see if the evening tide was more productive (Table 6); the drift gillnet fleet was put on notice of a possible 9:00 p.m. announcement for an opening early on June 28.

Early reports from the set gillnet opening indicated better fishing, so a drift gillnet period of 4 hours was announced for early on June 28 and set gillnet fishing was extended until 1:00 p.m. June 28 (Table 6). Escapement into Wood River was 21,936 for June 27, with indications that escapement was trending slower still on June 28 (Table 20). Fishing continued daily for relatively short drift gillnet openings and somewhat longer set gillnet openings. Managers felt it was essential to provide some fishing opportunity to control escapement and guard against increased run entry while also avoiding a continual harvest.

By July 1, the Nushagak River sockeye salmon escapement was beginning to fall below expected escapement. With this in mind, department managers decreased fishing time with 7-hour set and 3-hour drift gillnet openings on July 2 and again on July 3 (Table 6). Harvest from these periods reduced escapement below the minimum escapement curve for Nushagak River sockeye salmon.

On July 4, Nushagak River sockeye salmon escapement projected below the minimum 340,000 escapement. The previously announced set gillnet opening of 7 hours proceeded and ADF&G announced that it would be necessary to fish in the WRSHA to protect sockeye salmon bound for the Nushagak River (Table 6).

Through July 3, the drift gillnet harvest percentage was 71%, slightly below their 74% allocation; set gillnet only fishing on July 4 further reduced that to 67%. Managers believed that closing the set gillnet fishery in the Nushagak Section while fishing the drift and set gillnet fleets together in the Igushik Section would increase the drift gillnet harvest percentage over the next several days. Additionally, managers believed it would take a week or more to increase Nushagak River sockeye salmon escapement to the point needed to reopen the regular district.

Sockeye salmon escapement into the Nushagak River increased quickly once the commercial district was closed. Fishing began in the WRSHA on July 5, and by the evening of July 7, managers were confident that Nushagak River sockeye salmon escapement would reach the lower end of the SEG range of 340,000 (Tables 18 and 19). At the same time the drift gillnet harvest percentage in the district decreased from 67% to 63%.

Fishing resumed in the Nushagak District on July 7. ADF&G again focused attention on aligning harvest percentages with the allocation plan by fishing the drift gillnet fleet more on the flood tide and for additional hours. This appeared to work for the first few days, bringing the drift gillnet harvest percentage to 66% by July 10. Run entry slowed after July 10, however, and much of the drift gillnet effort had already left the Nushagak District for other districts (Table 15). With Nushagak District sockeye salmon runs well below forecast, the department placed priority on achieving escapement goals while providing as much harvest opportunity as possible. Escapement goals were achieved by July 12 (Table 20).

Commercial fishing in the Nushagak Section of the district continued until 4:30 p.m. July 22 (Table 6). The total sockeye salmon harvest of 2,696,149 fish was 45% below the preseason forecast of 4.9 million fish (Table 1).

The Nushagak Section opened again for 8 hours on July 24, 26, and 27, and for 4 hours on July 29 and 30 (Table 6). These openings were restricted to mesh of 4.75 inches or smaller for the conservation of coho salmon. On July 29, increased coho salmon escapement justified additional fishing time on July 30 and removal of the mesh restriction. Commercial fishing occurred every day thereafter until August 9. By August 9, all the large commercial processing operations ceased buying for the season and commercial fishing reopened on August 10 until September 29 (Table 6). There were no significant deliveries after August 9. The Portage Creek sonar project on the Nushagak River was operational until August 19. Nushagak River total coho salmon escapement was 329,946 and pink salmon escapement was 1,214,960 (Table 18). Coho salmon harvest was 92,598 and pink salmon harvest was 877,466 (Tables 5 and 19).

Commercial fishing with set gillnet gear began in the Igushik Section of the Nushagak District on June 15, when a market became available (Table 6). The Igushik River tower project began enumerating sockeye salmon on June 24 (Table 20). Fishing and escapement were relatively slow compared to recent years so managers restricted fishing time to 12 hours per day until June 28. On June 29, drift gillnet fishing was opened in the Igushik Section for 4 hours. Drift and set gillnet fishing continued in the Igushik Section for the rest of the season (Table 6). Escapement was slow but steady and the final escapement of sockeye salmon into the Igushik River was 193,326, within the SEG range of 150,000 to 300,000 fish (Appendix A1). The harvest percentages by gear group for sockeye salmon in the Nushagak District were 27% Nushagak Section set gillnet (target is 20%), 67% drift gillnet (target is 74%), and 7% Igushik Section set gillnet (target is 6%) (Appendix A9). In the WRSHA, the harvest percentages were 45% drift gillnet (target is 74%) and 55% set gillnet (target is 26%) (Appendix A9). The WRSHA was open for 5 tides and it was difficult to make adjustments to harvest percentages by gear groups in such a short time.

Togiak District

The 2012 inshore sockeye salmon run of 829,067 fish was the eleventh largest run to Togiak District in the last 20 years and was 7% above the preseason forecast (Table 1 and Appendix A17). The harvest for the Togiak District was 625,919 sockeye salmon, the eighth largest since

1992 (Appendix A3). Escapement into Togiak Lake was 203,148 fish, near the midpoint of the escapement goal range of 120,000 to 270,000 sockeye salmon (Appendix A1).

Togiak District is managed differently than other districts in Bristol Bay. This district uses a fixed fishing schedule of 60 hours per week in Kulukak Section, 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 by regulation if the permit has fished in any of the other 4 Bristol Bay districts prior to July 27. Conversely, permit holders that have fished in Togiak District are prohibited from fishing in any other Bristol Bay district until July 27.

The 2012 inshore run to Togiak River was forecast at 775,000 sockeye salmon, of which 74% were projected to be 3-ocean fish and 26% were projected to be 2-ocean fish (Table 2). An escapement goal range of 120,000 to 270,000 sockeye salmon for Togiak Lake would leave approximately 570,000 fish available for harvest in Togiak River Section (Table 1). Smaller sockeye salmon runs to other drainages in the district (primarily the Kulukak River) occur, but these are not included in the preseason forecast because age composition and escapement data are not complete. On average, 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 11 years has been to reduce the weekly fishing schedule in sections of Togiak District during the last 2 weeks of June. In 2012, the weekly fishing schedule in Togiak River Section was reduced by 48 and 36 hours in the third and fourth weeks of June, respectively, for Chinook salmon conservation (Table 6). Kulukak and western sections (Cape Peirce, Osviak, and Matogak) remained open for regularly scheduled periods throughout the season. While the *Togiak District Salmon Management Plan* provides for a directed Chinook salmon fishery if run strength is adequate, effort largely focuses on sockeye salmon for the entire season. Based on recent year harvests, the Chinook salmon run was again anticipated to be below average and the 5.5 inch mesh restriction in place from mid-June to mid-July was extended until the end of July by emergency order (Table 6).

Commercial fishing for sockeye salmon opened by regulation on June 1, but the first deliveries of the season did not occur until June 18 (Table 21). Participation was at low, anticipated levels for this early in the season, and at the close of fishing for the week on June 30, cumulative harvests were 753 Chinook and 18,003 sockeye salmon (Table 23). Beginning July 1, management turned from Chinook salmon to active sockeye salmon management.

Total Chinook salmon harvest for Togiak River Section was 4,153 fish, with an additional 465 caught in the remainder of Togiak District (Tables 21, 22, 24 and 25). Chinook salmon escapement was 1,503, bringing the total run to 8,058 (Appendix A20).

Commercial fishing reopened in Togiak River Section under the peak season fishing schedule on July 2. The escapement enumeration project on Togiak River began on July 4 with a count of 4,062 sockeye salmon (Table 20). This large first day of counts was attributed to longer closures to protect Chinook salmon and a particularly small commercial effort 7 to 10 days earlier, the typical travel time for fish to reach the counting towers at Togiak Lake from Togiak Bay. Sockeye salmon harvest from July 2 to 4 increased to expected levels, leaving the cumulative harvest at the close of fishing on July 4 at over 61,000 fish (Table 23). Over this same period, participation increased to above average levels and remained high for much of the rest of the

season, with several more drift gillnet permit holders registered in Togiak District than in recent years.

July 5 harvest increased to above expected levels with strong harvests continuing the rest of the week, bringing the cumulative harvest at the close of fishing on July 7 to 142,000 (Table 23). At this point in the season, ADF&G and the commercial fishing industry were concerned that runs may not make preseason forecasts based on harvests, escapement levels, and the latest data from the Port Moller test fishery, increasing concern about the strength of the Togiak run. The large amount of participation and harvest in Togiak District, coupled with these baywide concerns, suggested that caution was warranted. Initial above average escapement past the Togiak River counting towers brought escapement to above expected levels at 14,226 sockeye salmon (Table 20). Harvests from July 9 to 14, the second week of the peak season extended fishing schedule, were above average, leaving the cumulative harvest at the close of fishing on July 14 at 300,610 (Table 23). Although still relatively early in the season, escapement over this same period fell behind the escapement curve by about a day to 36,054 fish (Table 20).

The next week of fishing saw the largest harvest of the season, with July 16 and 17 producing record harvests for these dates in the Togiak River Section of 40,650 and 46,832 sockeye salmon, respectively (Table 21). Harvest remained above average this week but escapement continued to lag behind the escapement curve until July 19, when a count of 16,710 fish suddenly brought escapement above the curve to 76,722 (Table 20). Escapement remained well above average for the next 8 days, surpassing the lower end of the Togiak River SEG range (120,000).

By regulation, Togiak District opens to all Area T salmon permit holders on July 27. Approaching late July and owing to the smaller than forecast runs around Bristol Bay, there was increased interest in fishing Togiak District by permit holders from other districts. Since there are no requirements for registration after July 27, effort level is difficult to assess. Ultimately, some shift in effort from other districts to Togiak took place, but may have been offset by decreasing local effort. Harvest remained above average for the week. Due to escapement nearly reaching the midpoint of the SEG range prior to July 27, the weekly fishing schedule was extended for 2 weeks to harvest surplus sockeye salmon (Tables 6 and 20). A third extension occurred to offset a period of poor weather during the week of August 20 (Table 6). Catches fell to average late season levels with a small number of permit holders continuing to fish through August 30 (Table 23).

Similar to the last few years, there was strong market interest in fishing for Togiak coho salmon in 2012. Average effort and harvest of coho salmon occurred until August 30, achieving a cumulative coho salmon harvest of 16,012 fish (Table 23).

The 2012 sockeye salmon harvest in Togiak District was 625,919 fish, 4% above the preseason forecasted harvest and the eighth largest in the most recent 20 years (Table 1, Appendix A3). Total assessed escapement taken from Togiak River counting towers was 203,148 sockeye salmon. Although escapement information is incomplete, the total sockeye salmon run ranked eleventh among the most recent 20 years (Appendix A17). Commercial Chinook salmon harvest was 46% below the 20-year average, while harvests of chum and coho salmon were 35% and 4% above the 20-year averages, respectively (Appendices A4, A5, and A7).

2012 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 2012 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 2011 that were not available for the 2011 annual management report.

REGULATIONS

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

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

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

need to take this NPS closure into account if they intend to subsistence fish in waters of the park and preserve.

PERMIT SYSTEM AND ANNUAL SUBSISTENCE HARVEST

A permit system was gradually introduced throughout the Bristol Bay region in the late 1960s to document the harvest of salmon for subsistence. Much of the increase in the number of permits issued during these years reflects: 1) a greater compliance with the permitting and reporting requirements, 2) an increased level of effort expended by ADF&G in making permits available (including a local system of vendors), contacting individuals, and reminding them to return the harvest forms, and 3) a growing regional population. Most fishermen are obtaining permits and reporting their catches, and overall permit returns have averaged between 85% and 90% annually. However, fish removed for home use from commercial catches are not included in most reported subsistence harvest totals. Also, fish caught later in the season, such as coho and spawning salmon are probably not documented as consistently as Chinook and sockeye salmon.

Table 26 provides final data for Bristol Bay subsistence salmon harvests in 2011. As noted, final subsistence harvest estimates for 2012 were not available when this report was published. Appendix A26, A27, and A28 provide harvest estimates by district and species for the 20-year period from 1992 through 2011 plus the recent 5-year average harvests prior to 2012.

2012 BRISTOL BAY HERRING FISHERY

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

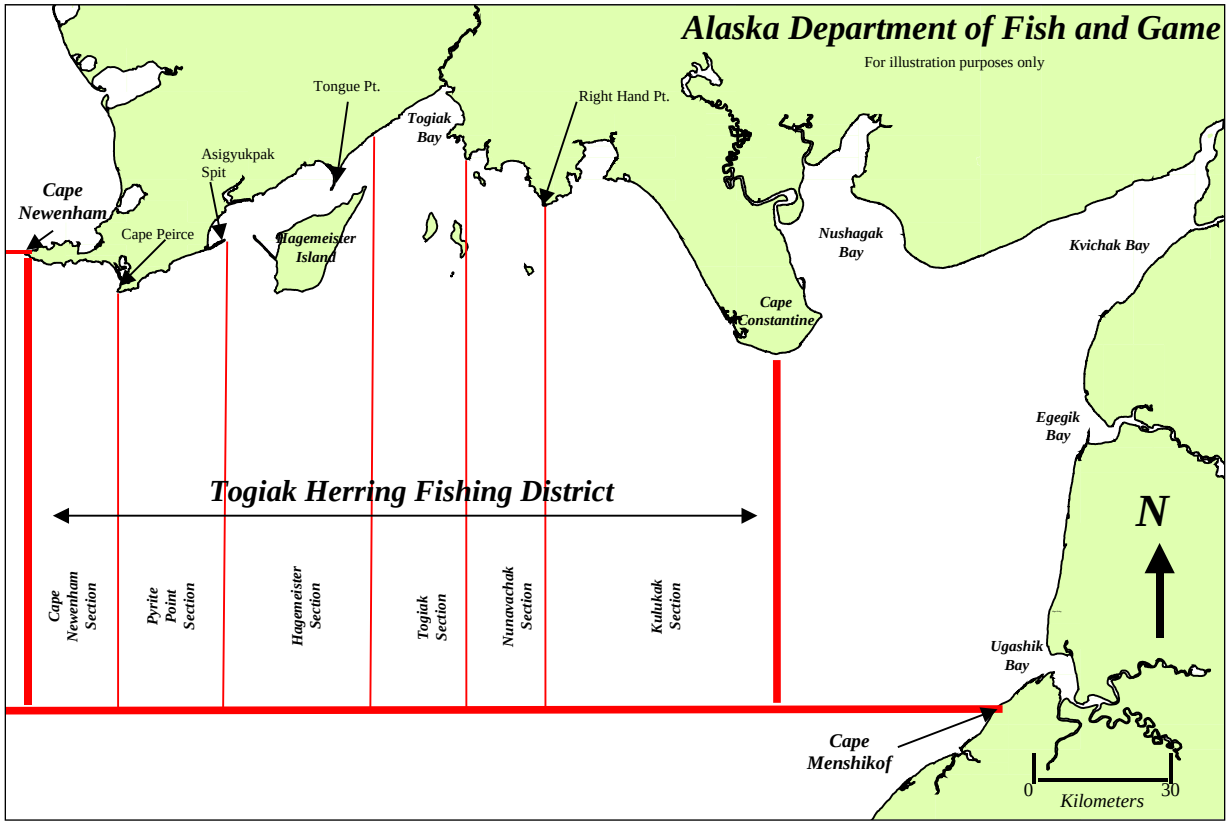


Figure 2.–Togiak herring district, Bristol Bay.

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 (later becoming the Magnusson-Stevens Act) resulted in a rapid expansion of the Togiak herring fishery in 1977.

The Togiak herring fishery is the largest in Alaska. From 1992 to 2011, sac roe harvests averaged 24,000 tons, worth an average of $5.86 million annually (Appendices B2 and B5). Spawn-on-kelp harvests have occurred only once in the last decade. Given current market conditions, historic harvests and value are of limited utility when contemplating future harvest or value. In 2012, sac roe harvests brought $2.6 million to permit holders, below the most recent 10-year average of $2.8 million (Appendix B5). This value represents the grounds price and does not necessarily include postseason adjustments. No spawn-on-kelp fishery has occurred since 2003 (Appendix B2).

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 after there is a reasonable expectation that herring might be present in the Togiak area. Surveys are done several times a week after threshold biomass has been documented. Surveys are done as weather, pilot availability, and funding allow.

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 8 years, ADF&G has been converting aerial survey data collection methods to use Geographic Information Systems (GIS), allowing "real-time" data entry and analysis. The new GIS-based program, among other improvements, allows observers to use the survey aircraft to estimate length and width dimensions of very large herring schools, providing a more objective and reliable estimate.

Herring ages 2 through 20 have been observed in the Togiak District, but herring are generally considered to begin recruiting into the fishery at age-4 and to be fully recruited at age-9. Herring abundance is related to year class survival and is strongly driven by large recruitment events that occur approximately every 8–10 years. The first of these events documented by ADF&G was underway when ADF&G began monitoring the biomass in 1978. The most recent recruitment event occurred in 2004–2005 and was signaled by large numbers of age-4 herring appearing in the 2008–2009 harvest (Appendix B3). These fish continued to dominate the harvest biomass in 2012 as age-7 and -8 herring (Table 27; Appendix B3). The herring biomass is considered healthy and stable.

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 from year to 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 10 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. 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 2012, the total number of purse seines vessels was 16, below the previous low in 2007 of 21 (Appendix B1).

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. This has also led to changes in the way the fishery is managed. Since fishing is less aggressive and processing capacity is limited, managers are able to 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 have purchased herring in Togiak (Appendix B1). Since 1998, industry participation has steadily declined to a low in 2011 of 5 companies (Appendix B1). In 2012, processor participation involved 4 companies (Table 28). Processing capacity on the grounds has also declined from a high of 4,850 tons per day in 1996, to a low in 2007 of 1,420 tons per day, to 1,970 tons per day in 2012 (Appendix B1).

2012 SEASON SUMMARY

Biomass Estimation

Aerial surveys of the Togiak District began May 9, 2012 (Table 29). No herring were observed, water temperatures were cold, and there was little marine mammal or bird activity. ADF&G staff contacted industry vessels on the grounds daily over the next several days and all indications were of cold water temperatures and little bird or marine mammal activity. Herring were first reported in the district on May 14, when department staff received reports from the grounds that herring were present. Department staff flew an aerial survey on May 14 and documented 42,173 tons of herring biomass on the grounds as well as 2.1 miles of herring spawn; herring were spread out across the district and threshold biomass (35,000 tons) was documented (Table 29). Additional surveys were conducted during the season to document spawn, biomass, and effort. The peak biomass was observed on May 22 when 124,529 tons of herring were documented (Table 29).

AGE COMPOSITION

A total of 6,970 herring from the commercial harvest were sampled from May 16 to 25. This effort produced 5,772 readable scales. Information on age, size, and sex was gathered from each fish and samples were taken from the commercial purse seine and commercial gillnet fisheries. Sampling coverage was temporally and geographically well represented.

Age classes composing more than 10% of the total run were age-6, -7, -8, and -9 fish, which comprised 17%, 36%, 18%, and 10%, respectively, of the run by biomass and 19%, 38%, 16%,

and 8% of the run by numbers of fish (Table 27). Age classes composing more than 10% of the harvest were age-6, -7, -8, and -9 fish, which comprised 15%, 32%, 19%, and 12%, respectively, of the harvest by biomass and 17%, 36%, 18%, and 10% by numbers of fish (Table 27). The gillnet harvest was markedly older than the purse seine harvest. The average length and weight of herring harvested in the commercial fishery was 303 mm and 330 g respectively. Samples collected from commercial purse seine and gillnet harvests were 51% male and 49% female (χ^2=1.3e^4, P=2.2e^{-16}), varying in composition by time and location.

Commercial Fishery

The Togiak District herring fisheries are managed in accordance with the *Bristol Bay Herring Management Plan* (5 AAC 27.865). 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 2012 preseason forecasted biomass was 123,745 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, 1,627 tons for the Dutch Harbor food and bait fishery, and the remaining 21,622 tons to the sac roe fishery. The management plan specifies that ADF&G will manage the sac roe fishery so that 70% of the harvest is taken by purse seines (12,994 tons in 2012) and 30% of the harvest is taken by gillnets (4,027 tons in 2012) (Table 30).

The *Bristol Bay Herring Management Plan* and other regulations direct ADF&G to conduct an orderly, manageable fishery and strive for the highest level of product quality with a minimum of waste. In recent years, the seine fleet has been comprised of processor-organized cooperatives. For the 2012 season, management staff again allowed long duration seine openings over a large area of the district and allowed processors to manage their fleets based on processing capacity. Input from the fleet and industry has indicated that this slows the "race for fish" and allows for improved quality and value.

ADF&G staff polled processing companies prior to the season to assess processing capacity for the 2012 season and to inquire about additional concerns or issues. The poll indicated that 4 companies would be participating in the 2012 Togiak herring fishery, only 3 of which would buy gillnet herring (Table 28). The processing capacity for 2012 was estimated to be 1,970 tons per day, down from 2,413 in 2011 (Appendix B1).

Purse Seine

The Togiak purse seine fishery opened at 6:00 p.m. on May 14 for 76 hours after ADF&G documented 42,000 tons of herring on the grounds and several areas where spawning was occurring (Tables 29 and 31). By midnight on May 16 (54 hours of fishing), there were 2,349 tons of fish harvested (Table 30). There was some harvest as early as May 14 and by May 16 at least 3 companies had purchased herring. High winds hampered harvest on May 17, and harvest for May 17 and 18 was 1,976 tons of herring (Table 30). The relatively small harvests for the first 5 days of the fishery were due to poor weather, reduced processor participation, and not all processors operating at full capacity. Due to weather issues impacting the gillnet fishery, the area for the purse seine fishery was changed several times over the course of the fishery beginning May 16 (Table 31). These changes consisted of reducing the purse seine area in Nunavachak Bay when the winds precluded gillnet fishing east of Right Hand Point and adding some additional area in Togiak Bay. The poor weather on May 17 warranted an extension of the purse seine fishing period for 72 hours until 10:00 p.m. May 21.

Herring harvests for May 19 and 20 were 2,146 and 1,893 tons, respectively (Table 30). Through May 20, the purse seine fleet harvested 55% of their quota and the gillnet fleet harvested 21% of their quota. The allocation disparity between the gear groups increased daily from May 18 to 20. Some processing companies suspended buying gillnet caught fish entirely and other companies imposed daily limits on their gillnet fleets for part of May 19 and May 21 due to processing capacity issues. With part of the gillnet fleet restricted on May 21, the allocation disparity was anticipated to increase again. Thus, to balance allocation, ADF&G allowed the purse seine fishing period to close as scheduled on May 21 at 10:00 p.m. The department evaluated harvest information from May 22 on the morning of May 23 and, with a smaller disparity in allocation, reopened the purse seine fishery. Fishing reopened at noon on May 23 but afternoon fog reduced the effectiveness of the fleet. The harvest on May 23 was 1,267 tons, a relatively small harvest considering the 36-hour purse seine closure (Table 30). Over the next several days, the harvest was relatively small considering the available processing capacity. The department continued extending the fishery in 24-hour increments, as there was still interest from industry and no biological concerns (Table 31). On the morning of May 28, harvest reports indicated no harvest from May 27. There was still interest in fishing and quota available, so the department extended the fishery to 10:00 p.m. May 29. On the morning of May 29, there was no reported harvest for the previous day and no more interest in continued fishing.

The 2012 Togiak sac roe purse seine fishery closed at 10:00 p.m. May 29. The total purse seine harvest was 12,994 tons of herring, representing 86.6% of the quota (Appendix B6). There were 16 purse seine vessels that participated in the fishery in 2012 (Appendix B1).

Gillnet

The Togiak gillnet fishery was opened at 6:00 p.m. May 14 until further notice with no prior test fishing. In 2012, there were 3 companies participating in the Togiak sac roe gillnet fishery. Processors expected 20 gillnet vessels to take part in the fishery but only 18 actually participated. This continues the decreasing trend in gillnet participation from 35 participants in 2010 and 25 in 2011. Although the season opened on May 14, the first day that all 3 companies harvested fish was May 18. This was partly due to a storm that prevented virtually all fishing beginning May 16 and continuing until early May 18. Another factor slowing gillnet harvest is the recent trend of herring in the gillnet area maturing a day or two later than herring in the purse seine area. The gillnet fleet harvested 537 tons of herring through May 18 (Table 30). On May 19, processors imposed restrictions on their gillnet fleets that limited harvest. The May 19 gillnet harvest was 206 tons of herring. The best day of gillnet fishing occurred on May 20 when 648 tons of herring was harvested (Table 30). The gillnet harvest on May 21 was 564 tons of herring, but was limited by processor restrictions (Table 30). ADF&G closed the purse seine fishery at 10:00 p.m. May 21 because of the increasing gap in the harvest percentages of the 2 gear groups. On May 22, with the purse seine fleet standing down and the gillnet fleet unrestricted, the gillnet harvest was 427 tons (Table 30). The purse seine fishery reopened at noon on May 23 after a 36-hour break. The gillnet fleet remained unrestricted by processors for the remainder of the 2012 season. The gillnet harvest decreased through May 25 when 15 tons of herring were caught. The fleet continued to fish with harvest improving through May 30 when 375 tons of herring were caught (Table 30). The fishery was extended until June 5 because of the late start, processor restrictions, poor weather, and a considerable amount of quota remaining. The gillnet harvest decreased quickly after May 30 and by June 3 the entire gillnet fleet stopped fishing. The gillnet

fleet of 18 vessels harvested 4,027 tons of herring, representing approximately 63.8% of the quota (Appendix B1).

Spawn on Kelp

No companies registered to buy herring spawn-on-kelp in 2012, therefore there were no openings and no commercial harvest.

EXPLOITATION

The 2012 Togiak herring fisheries were managed for a maximum exploitation rate of 20% of the preseason biomass estimate. The purse seine harvest was 12,994 tons, with an average weight of 328 grams and an average roe percentage of 9.4%. The gillnet harvest was 4,027 tons, with an average weight of 406 grams and an average roe percentage of 12.1%, making the combined harvest 17,021 tons with an average weight of 347 grams and an average roe percentage of 10.6%. The Dutch Harbor food and bait fishery has not occurred at this time. If the Dutch Harbor fishery harvest is equal to the quota of 1,627 tons, then the total harvest for 2012 would be estimated at 18,853 tons. Based on the preseason biomass estimate of 123,745 tons, the 2012 exploitation rate would be approximately 15% (Appendix B1).

EXVESSEL VALUE

The projected exvessel value of the 2012 Togiak herring fishery is approximately $2.61 million (Appendix B5). This is based on a grounds price estimate of $162 per ton for seine caught fish and $167 per ton for gillnet caught fish and does not include any postseason adjustments.

ACKNOWLEDGEMENTS

The authors gratefully acknowledge the Commercial and Subsistence Fisheries staff of the Dillingham, King Salmon, and Anchorage offices of the Alaska Department of Fish and Game for their contributions to this report.

Permanent Employees with the Division of Commercial Fisheries

West Side: Tim Sands, Nushagak Biologist; Matt Jones, Togiak Biologist; Phillip Carpenter, Facilities and Equipment Maintenance; Karen Brito, Program Technician.

East Side: Steve Morstad, Naknek/Kvichak Biologist; Carol Klutsch, Program Technician.

Anchorage: Paul Salomone, Egegik/Ugashik Biologist; Charles Brazil, Area Research Biologist; Fred West, Research Biologist; Greg Buck, Research Biologist; Katie Sechrist, Information Officer; Shannon Royse, Publication Specialist.

Seasonal Employees with the Division of Commercial Fisheries

West Side: Breena Apgar-Kurtz, Seafood Industry Coordinator (Salmon and Herring); Jedediah Smith, Tower Camp Coordinator and Herring; Jennifer Bennis, Office Staff; Melissa Isaacs, Office Staff; Jorden Lisac, BBEDC intern; Samantha Becker, Catch Sampler and Nushagak River Sonar; Bristelle Larsen, Catch Sampler; Amanda McGill, Catch Sampler and Nushagak River Sonar; Konrad Mittlestadt, Nushagak River Sonar; Eric Gorman, Nushagak River Sonar; Randy Guintu, Nushagak River Sonar; Hannah Hilowitz, Nushagak River Sonar and Herring; Mariel Terry, Nushagak River Sonar;

Chase Jalbert, Nushagak River Sonar Chinook Tagging Project; Cody Larson, Nushagak River Sonar Chinook Tagging Project; Parker Lennihan, Igushik River Tower; Peter Johnson, Igushik River Tower; Leif Lidin-Lamon, Igushik River Tower; Bristol Whitmore, Togiak River Tower; Sue Libenson, Togiak River Tower; Rosemary McGuire, Togiak River Tower; Emily Bryson, Wood River Tower; Emily Tyson, Wood River Tower; Philip Fyfe, Wood River Tower.

East Side: Mary Emery, Seafood Industry Coordinator/Office Manager; Alesha Weiland, Night Office Staff; Rob Regnart, Field Camp Coordinator; Cathy Tilly, Scale Reader; Diana Merlino, Scale Reader; Sally Hamm, District Test Fish; Jessie Regnart, Camp Supply Coordinator; Susan Klock, Naknek River Tower; Josh Frazier, Naknek River Tower; Jeff Sager, Naknek River Tower; Kelsey Romig, Kvichak River Test Fish; Dawson Marchant, Kvichak River Test Fish; Brad Russell, Egegik River Test Fish; Dirk Middleton, Egegik River Test Fish; Chris Sewright, Ugashik River Test Fish; Chris Becker, Ugashik River Test Fish; Dustin Capik, Kvichak River Tower; Michael Courtney, Kvichak River Tower; Alexandria Patton-Romero, Kvichak River Tower; Jace Burres, Ugashik River Tower; Steve Bay, Ugashik River Tower; Alanna Gottshall, Ugashik River Tower; Robert Jaquith, Egegik River Tower; Ben Campbel, Egegik River Tower; John Miller, Egegik River Tower; Angela Wilkinson, Catch Sampler; Renee John, Catch Sampler; Roberta Larson Catch Sampler; Katrina Bernhardt, Catch Sampler;

Permanent Employees with the Division of Subsistence

Ted Krieg, Subsistence Resource Specialist; Sarah Evans, Fish and Wildlife Technician Specialist; Eunice Dyasuk, Program Technician; Terri Lemons, Research Analyst.

Anchorage Genetics Lab Employees

Tyler Dann, Fisheries Geneticist; Chris Habicht, Fisheries Geneticist; Bill Templin, Fisheries Scientist; Jim Jasper, Biometrician; Eric Lardizabal, Analyst Programmer; Judy Berger, Fishery Biologist; Lisa Fox, Fisheries Geneticist; Zac Grauvogel, Fishery Biologist; Tara Harrington, Fisheries Technician; Heather Liller, Fisheries Biologist; Serena Rogers, Fisheries Biologist; Paul Kuriscak, Fisheries Biologist; Christy Cupp, Technician.

REFERENCES CITED

Buck, G. B., C. B. Brazil, F. West, L. F. Fair, X. Zhang, and S. L. Maxwell. 2012. Stock assessment of Chinook, sockeye, and chum salmon in the Nushagak River. Alaska Department of Fish and Game, Fishery Manuscript No. 12-05, Anchorage.

Lebida, R. C., and D. C. Whitmore. 1985. Bering Sea herring aerial survey manual. Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Bristol Bay Data Report 85-2, Anchorage.

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, 2012.

District and River System [a]		Inshore Run			Escapement		Inshore Catch		
		Forecast	Actual	Percent Deviation [b]	Range	Actual	Projected Harvest [c]	Actual	Percent Deviation [b]
Naknek-Kvichak District									
Kvichak River		6,839	10,372	52	2,000–10,000	4,164	3,420	6,208	82
Alagnak River		1,904	2,417	27	320 minimum	862	952	1,556	63
Naknek River		6,217	3,129	-50	800–1,400	900	5,117	2,229	-56
	Total	14,960	15,919	6	3,120–11,720	5,927	9,489	9,992	5
Egegik District		6,716	6,130	-9	800–1,400	1,234	5,616	4,897	-13
Ugashik District		3,087	3,063	-1	500–1,200	695	2,237	2,368	6
Nushagak District									
Wood River		4,638	2,517	-46	700–1,500	764	3,538	1,753	-50
Igushik River		722	486	-33	150–300	194	497	293	-41
Nushagak-Mulchatna		1,401	1,083	-23	340–760	432	851	650	-24
	Total	6,761	4,086	-40	1,190–2,560	1,390	4,886	2,696	-45
Togiak District		775	829	7	120–270	203	600	626	4
Total Bristol Bay		32,299	30,027	-7	5,730–17,150	9,449	22,828	20,578	-10

[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) / Forecast.

[c] Includes South Peninsula projected harvest.

Table 2.–Inshore forecast of sockeye salmon returns by age class, river system and district, in thousands of fish, Bristol Bay, 2012.

District and	2-Ocean			3-Ocean			
River System	1.2 (2008)	2.2 (2007)	Total	1.3 (2007)	2.3 (2006)	Total	Total
Naknek-Kvichak District							
Kvichak River	1,724	3,169	4,893	1,518	428	1,946	6,839
Alagnak River	475	204	679	1,131	94	1,225	1,904
Naknek River	1,199	881	2,080	3,307	830	4,137	6,217
Total	3,398	4,254	7,652	5,956	1,352	7,308	14,960
Egegik District	567	2,893	3,460	1,136	2,120	3,256	6,716
Ugashik District	508	1,101	1,609	863	615	1,478	3,087
Nushagak District							
Wood River	1,299	168	1,467	3,089	82	3,171	4,638
Igushik River	112	26	138	555	29	584	722
Nushagak River [a]	175	19	194	1,094	25	1,119	1,401
Total	1,586	213	1,799	4,738	136	4,874	6,761
Togiak District [b]	162	38	200	534	41	575	775
Total Bristol Bay [c]							
Number	6,221	8,499	14,720	13,227	4,264	17,491	32,299
Percent	19	26	46	41	13	54	100

[a] Nushagak River forecast includes age-0.3 (21,000) and age-1.4 (67,000) fish.

[b] Forecasts for Kulukak, Kanik, Osviak, and Matogak River systems were not included. These systems contribute approximately 50,000 sockeye salmon to Togiak District harvest each year.

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

Table 3.–Mean round weight, price per pound, and total exvessel value of the commercial salmon catch, Bristol Bay, 2012.

Species	Total Catch (lbs)	Mean Weight (lbs)	Mean Price ($/lb)	Exvessel Value ($)
Sockeye	117,295,808	5.70	0.97	113,776,934
Chinook	237,259	13.90	1.07	253,867
Chum	3,197,743	6.70	0.26	831,413
Pink	2,822,190	3.10	0.12	338,663
Coho	595,723	5.40	0.26	154,888
Total	124,148,723			115,355,765

Note: Weighted averages used.

Table 4.–Commercial salmon processors and buyers operating in Bristol Bay, 2012.

	Name of Operator/Buyer[a]	Base of Operations	District[b]	Method[c]	Export
1	Alaska General Seafoods	Kenmore, WA	K,E,	C,EF,F	SEA,AIR
2	Alaska Salmon Wild	Ruidoso, NM	K	F	SEA
3	Alaska Wild Salmon	Anchorage, AK	K	C	SEA
4	Anthony Wood	King Salmon, AK	K	EF, F	SEA,AIR
5	Arctic Wild Salmon	Eagle River, AK	N	EF, F	AIR
6	Big Creek Fisheries, LLC	Everett, WA	E,U	EF, F	SEA,AIR
7	Cape Greig, LLC	Seattle, WA	E,U	EF	AIR
8	Coffee Point Seafoods	Seattle, WA	E	EF, F. S	SEA,AIR
9	Copper River Seafoods	Anchorage, AK	T	EF	AIR
10	David Wright	Louisville, KY	K	F	AIR
11	Ekuk Fisheries	Seattle, WA	N	F	SEA
12	Falcon Fish	White Bird, ID	K	F	SEA,AIR
13	Favco Inc. - Joseph R. Faith	Dillingham, AK	N	EF	AIR
14	Fransen Family Fish Company	Lynden, WA	K	F	AIR
15	Friedman Family Fisheries, Inc.	Baltimore, MD	N	F	SEA
16	Icicle Seafoods, Inc.	Seattle, WA	K,E,U,N	C,F, EF,S	SEA,AIR
17	JP Fisheries	Naknek, AK	K	F	SEA,AIR
18	Leader Creek Fisheries, LLC	Seattle, WA	K,E,U,N	F	SEA,AIR
19	Nakeem Homepack, LLC	King Salmon, AK	K	F	SEA,AIR
20	Naknek Family Fisheries	Naknek, AK	K	EF, F	SEA,AIR
21	Ocean Beauty Seafoods, Inc.	Seattle, WA	K,E,U,N,T	C,EF,F,S	SEA,AIR
22	Pederson Point	Seattle, WA	K,E	F	SEA
23	Peter Crimp	Anchorage, AK	N	EF	AIR
24	Peter Pan Seafoods, Inc.	Seattle, WA	K,E,U,N	C,EF,F,S	SEA,AIR
25	Pavel Vitek	Kasilof, AK	K	F	SEA,AIR
26	Red Salmon Cannery	Seattle, WA	K,E,U,N	C, F	SEA
27	Togiak Fisheries	Seattle, WA	T	F, S	SEA
28	Tony Neal	Homer, AK	E	F	SEA,AIR
29	Trident Seafoods	Seattle, WA	K,E,U,N	C,F	SEA
30	Wild Alaska Salmon and Seafood	King Salmon, AK	K	EF, F	SEA,AIR
31	Yardarm Knot Fisheries, LLC	Seattle, WA	K,E,U,N	C,F	SEA

Canning=8; Freezing= 26; Fresh=14; Curing=5; Air Export=22; Sea Export=24

[a] Indicates operators with a processing facility in a district or operators from other areas buying fish and/or providing support service for permit holders 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 5.–Commercial salmon catch by district and species, in number of fish, Bristol Bay, 2012.

District and River System		Sockeye	Chinook	Chum	Pink	Coho	Total
Naknek-Kvichak District							
Kvichak River		6,207,636					6,207,636
Alagnak River		1,555,581					1,555,581
Naknek River		2,228,851					2,228,851
	Total	9,992,068	863	122,913	3,535	423	10,119,802
Egegik District		4,896,532	24	38,191	285	1,286	4,936,318
Ugagshik District		2,367,544	90	30,244	0	0	2,397,878
Nushagak District							
Wood River		1,752,922					1,752,922
Igushik River		292,999					292,999
Nushagak River		650,228					650,228
	Total	2,696,149	11,501	340,881	877,466	92,598	4,018,595
Togiak District							
Togiak Section		589,836	4,153	93,122	27,525	16,012	730,648
Kulukak Section		36,083	460	19,596	484	0	56,623
Matogak Section [a]							
Osviak Section [a]							
	Total	625,919	4,613	112,718	28,009	16,012	787,271
Total Bristol Bay		20,578,212	17,091	644,947	909,295	110,319	22,259,864

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

[a] Less than 4 permits holders involved in fishery; records are confidential.

Table 6.–Commercial fishing emergency orders, by district and statistical area, Bristol Bay, 2012.

Number[a]	Start Date	Start Time		End Date	End Time	Effective time
Naknek/Kvichak District						
Drift Net						
AKN.28	30 Jun	9:00 a.m.	to	30 Jun	4:00 p.m.	7.0 hours
AKN.44	5 Jul	1:30 p.m.	to	5 Jul	8:30 p.m.	7.0 hours
AKN.44	6 Jul	2:30 p.m.		6 Jul	9:30 p.m.	7.0hours
AKN.49	8 Jul	5:00 p.m.	to	9 Jul	12:00 a.m.	7.0 hours
AKN.53	9 Jul	5:00 a.m.	to	9 Jul	1:00 p.m.	8.0 hours
AKN.53	9 Jul	6:00 p.m.	to	10 Jul	1:00 a.m.	7.0 hours
AKN.54	10 Jul	6:30 a.m.	to	10 Jul	1:30 p.m.	7.0 hours
AKN.54	11 Jul	7:00 a.m.	to	11 Jul	2:00 p.m.	7.0 hours
AKN.68	15 Jul	11:00 p.m.	to	16 Jul	5:00 p.m.	18.0 hours
AKN.71	16 Jul	5:00 p.m.	to	17 Jul	9:00 a.m.	16.0 hours[b]
AKN.71	20 Jul	9:00 a.m.	to	23 Jul	9:00 a.m.	72.0 hours
Set Net						
AKN.01	4 Jun	9:00 a.m.	to	22 Jul	9:00 a.m.	[c,d]
AKN.16	26 Jun	5:00 a.m.	to	26 Jun	1:30 p.m.	8.5 hours
AKN.17	27 Jun	5:30 a.m.	to	27 Jun	2:00 p.m.	8.5 hours
AKN.20	28 Jun	6:30 a.m.	to	28 Jun	2:30 p.m.	8.0 hours
AKN.22	29 Jun	7:00 a.m.	to	29 Jun	3:00 p.m.	8.0 hours
AKN.25	30 Jun	8:00 a.m.	to	30 Jun	4:00 p.m.	8.0 hours
AKN.29	30 Jun	4:00 p.m.	to	1 Jul	4:30 p.m.	24.5 hours
AKN.31	1 Jul	4:30 p.m.	to	2 Jul	5:00 p.m.	24.5 hours
AKN.34	2 Jul	5:00 p.m.	to	3 Jul	6:00 p.m.	25.0 hours
AKN.36	3 Jul	6:00 p.m.	to	4 Jul	7:00 p.m.	25.0 hours
AKN.40	5 Jul	1:30 p.m.	to	5 Jul	8:30 p.m.	7.0 hours
AKN.43	5 Jul	1:30 a.m.	to	4 Jul	10:30 a.m.	9.0 hours
AKN.44	4 Jul	10:30 a.m.	to	5 Jul	8:30 p.m.	10.0 hours
AKN.44	6 Jul	2:30 a.m.	to	6 Jul	11:00 a.m.	8.5 hours
AKN.44	6 Jul	2:30 p.m.	to	6 Jul	9:30 p.m.	7.0 hours
AKN.46	6 Jul	9:30 p.m.	to	7 Jul	11:00 p.m.	25.5 hours
AKN.49	7 Jul	11:00 p.m.	to	9 Jul	12:00 a.m.	25.0 hours
AKN.53	9 Jul	12:00 a.m.	to	10 Jul	1:00 a.m.	25.0 hours
AKN.54	10 Jul	1:00 a.m.	to	12 Jul	4:00 a.m.	51.0 hours
AKN.59	12 Jul	4:00 a.m.	to	14 Jul	6:00 a.m.	50.0 hours
AKN.63	14 Jul	6:00 a.m.	to	15 Jul	5:00 p.m.	35.0 hours
AKN.68	15 Jul	5:00 p.m.	to	17 Jul	9:00 a.m.	40.0 hours[b]
Naknek Section						
Drift Net						
AKN.01	4 Jun	9:00 a.m.	to	22 Jul	9:00 a.m.	[c,d]
AKN.16	26 Jun	6:00 a.m.	to	26 Jun	1:30 p.m.	7.5 hours
AKN.17	27 Jun	6:30 a.m.	to	27 Jun	2:00 p.m.	7.5 hours
AKN.20	28 Jun	7:30 a.m.	to	28 Jun	2:30 p.m.	7.0 hours
AKN.22	29 Jun	8:30 a.m.	to	29 Jun	3:00 p.m.	6.5 hours
AKN.25	30 Jun	9:00 a.m.	to	30 Jun	4:00 p.m.	7.0 hours
AKN.25	28 Jun	9:30 a.m.	to	28 Jun	5:00 p.m.	7.5 hours
AKN.29	30 Jun	10:30 p.m.	to	1 Jul	5:30 a.m.	7.0 hours

-continued-

Table 6.–Page 2 of 8.

Number[a]	Start Date	Start Time		End Date	End Time	Effective time
AKN.29	1 Jul	10:00 a.m.	to	1 Jul	4:30 p.m.	6.5 hours
AKN.31	2 Jul	11:00 a.m.	to	2 Jul	4:00 p.m.	5.0 hours
AKN.34	3 Jul	12:30 p.m.	to	3 Jul	5:30 p.m.	5.0 hours
AKN.36	4 Jul	1:30 p.m.	to	4 Jul	7:00 p.m.	5.5 hours
AKN.38	4 Jul	1:30 a.m.	to	4 Jul	9:00 a.m.	7.5 hours
AKN.40	5 Jul	2:30 p.m.	to	5 Jul	8:30 p.m.	6.0 hours
AKN.43	5 Jul	2:30 a.m..	to	5 Jul	10:30 a.m.	8.0 hours
AKN.44	6 Jul	2:30 a.m..	to	6 Jul	11:00 a.m.	8.5 hours
AKN.46	7 Jul	4:30 a.m.	to	7 Jul	11:30 a.m.	7.0 hours
AKN.46	7 Jul	5:00 p.m.	to	7 Jul	11:30 p.m.	6.5 hours
AKN.49	8 Jul	5:00 a.m.	to	8 Jul	11:20 p.m.	7.0 hours
Egegik District						
Drift Net						
AKN.02	4 Jun	12:01 a.m.	to	15 Jun	9:00 a.m.	[e]
AKN.13	25 Jun	5:00 p.m.	to	25 Jun	10:00 p.m.	5.0 hours
AKN.18	26 Jun	5:00 p.m.	to	26 Jun	11:00 p.m.	6.0 hours
AKN.21	27 Jun	6:00 p.m.	to	27 Jun	11:59 a.m.	6.0 hours
AKN.23	29 Jun	6:00 p.m.	to	30 Jun	1:00 a.m.	7.0 hours
AKN.13	23 Jun	6:00 p.m.	to	23 Jun	11:59 p.m.	6.0 hours
AKN.13	24 Jun	5:30 a.m.	to	24 Jun	11:30 a.m.	6.0 hours
AKN.16	25 Jun	6:30 a.m.	to	25 Jun	10:30 a.m.	4.0 hours
AKN.20	26 Jun	7:45 a.m.	to	26 Jun	10:45 a.m.	3.0 hours
AKN.21	27 Jun	8:30 a.m.	to	27 Jun	1:00 p.m.	4.5 hours
AKN.24	28 Jun	9:00 a.m.	to	28 Jun	3:00 p.m.	6.0 hours
AKN.26	30 Jun	8:00 p.m.	to	30 Jun	11:59 a.m.	4.0 hours
AKN.35	3 Jul	12:00 p.m.	to	3 Jul	4:00 p.m.	4.0 hours
AKN.39	3 Jul	11:30 p.m.	to	4 Jul	6:00 p.m.	18.5 hours
AKN.41	4 Jul	10:00 p.m.	to	5 Jul	2:00 a.m.	4.0 hours
AKN.41	5 Jul	12:30 p.m.	to	5 Jul	8:30 p.m.	8.0 hours
AKN.45	6 Jul	5:00 a.m.	to	6 Jul	9:00 p.m.	16.0 hours
AKN.47	7 Jul	2:30 p.m.	to	7 Jul	10:30 p.m.	8.0 hours
AKN.50	8 Jul	4:00 p.m.	to	8 Jul	11:00 p.m.	8.0 hours
AKN.52	9 Jul	5:00 p.m.	to	9 Jul	11:00 p.m.	6.0 hours
AKN.55	10 Jul	5:30 p.m.	to	10 Jul	11:30 p.m.	6.0 hours
AKN.57	11 Jul	5:30 a.m.	to	11 Jul	1:00 p.m.	7.5 hours
AKN.57	11 Jul	7:00 p.m.	to	11 Jul	11:00 p.m.	5.0 hours
AKN.60	11 Jul	11:00 p.m.	to	12 Jul	2:00 a.m.	3.0 hours
AKN.60	12 Jul	6:00 a.m.	to	12 Jul	1:00 p.m.	7.0 hours [f]
AKN.62	13 Jul	6:00 a.m.	to	13 Jul	12:00 p.m.	6.0 hours
AKN.64	13 Jul	7:45 p.m.	to	14 Jul	3:45a.m.	8.0 hours
AKN.64	14 Jul	7:45 a.m.	to	14 Jul	3:15p.m.	8.0 hours
AKN.66	14 Jul	8:30 p.m.	to	15 Jul	4:30 a.m.	8.0 hours
AKN.66	15 Jul	8:00 a.m.	to	15 Jul	4:00 p.m.	8.0 hours
AKN.69	16 Jul	9:00 a.m.	to	27 Jul	9:00 a.m.	[c]

-continued-

Table 6.–Page 3 of 8.

Number[a]	Start Date	Start Time		End Date	End Time	Effective time
Egegik District						
Set Net						
AKN.02	4 Jun	12:01 a.m.	to	15 Jun	9:00 a.m.	[e]
AKN.07	19 Jun	11:15 a.m.	to	19 Jun	7:15 p.m.	8.0 hours
AKN.09	20 Jun	1:30 p.m.	to	20 Jun	9:30 a.m.	8.0 hours
AKN.13	25 Jun	4:15 p.m.	to	26 Jun	12:15 a.m.	8.0 hours
AKN.18	26 Jun	5:00 p.m.	to	27 Jun	1:00 a.m.	6.0 hours
AKN.21	27 Jun	6:00 p.m.	to	28 Jun	2:00 a.m.	8.0 hours
AKN.23	29 Jun	6:30 a.m.	to	29 Jun	2:30 p.m.	6.0 hours
AKN.16	25 Jun	6:00 a.m.	to	25 Jun	2:00 p.m.	8.0 hours
AKN.20	26 Jun	6:45 a.m.	to	26 Jun	2:45 p.m.	8.0 hours
AKN.21	27 Jun	7:45 a.m.	to	27 Jun	3:45 p.m.	8.0 hours
AKN.24	28 Jun	8:30 a.m.	to	28 Jun	4:30 p.m.	8.0 hours
AKN.26	30 Jun	7:00 a.m.	to	30 Jun	3:00 p.m.	8.0 hours
AKN.33	2 Jul	9:00 a.m.	to	2 Jul	5:00 p.m.	8.0 hours
AKN.35	3 Jul	10:30 a.m.	to	3 Jul	6:30 a.m.	8.0 hours
AKN.39	3 Jul	11:30 p.m.	to	4 Jul	6:00 p.m.	18.5 hours
AKN.41	5 Jul	12:30 p.m.	to	5 Jul	8:30 p.m.	8.0 hours
AKN.45	6 Jul	1:45 p.m.	to	6 Jul	9:45 p.m.	8.0 hours
AKN.47	7 Jul	2:30 p.m.	to	7 Jul	10:30 p.m.	8.0 hours
AKN.50	8 Jul	3:45 p.m.	to	8 Jul	11:45 p.m.	8.0 hours
AKN.52	9 Jul	4:30 p.m.	to	10 Jul	12:30 a.m.	8.0 hours
AKN.55	10 Jul	5:30 p.m.	to	11 Jul	1:30 a.m.	6.0 hours
AKN.57	11 Jul	5:00 a.m.	to	11 Jul	1:00 p.m.	8.0 hours
AKN.60	11 Jul	6:15 p.m.	to	12 Jul	2:15 a.m.	7.0 hours
AKN.60	12 Jul	6:00 a.m.	to	12 Jul	2:00 p.m.	8.0 hours
AKN.62	13 Jul	6:15 a.m.	to	13 Jul	2:15 p.m.	8.0 hours
AKN.64	13 Jul	7:45 p.m.	to	14 Jul	3:45 a.m.	8.0 hours
AKN.64	14 Jul	7:45 a.m.	to	14 Jul	3:15 p.m.	8.0 hours
AKN.66	14 Jul	8:30 p.m.	to	15 Jul	4:30 a.m.	8.0 hours
AKN.66	15 Jul	8:00 a.m.	to	15 Jul	4:00 p.m.	8.0 hours
AKN.69	16 Jul	9:00 a.m.	to	27 Jul	9:00 a.m.	[c]
Ugashik District			to			
Drift Net						
AKN.03	4 Jun	12:01 a.m.	to	15 Jun	9:00 a.m.	[c]
AKN.14	25 Jun	3:00 p.m.	to	25 Jul	11:00 p.m.	6.0 hours [d]
AKN.15	26 Jun	3:00 p.m.	to	27 Jul	2:00 a.m.	11.0 hours
AKN.19	27 Jun	4:00 p.m.	to	21 Jun	11:59 p.m.	8.0 hours
AKN.24	29 Jun	6:00 a.m.	to	29 Jun	12:00 p.m.	6.0 hours
AKN.27	30 Jun	6:30 a.m.	to	30 Jun	1:30 p.m.	7.0 hours
AKN.30	1 Jul	7:30 a.m.	to	1 Jul	12:30 p.m.	5.0 hours
AKN.32	2 Jul	9:30 a.m.	to	2 Jul	4:30 p.m.	4.0 hours
AKN.37	4 Jul	11:00 a.m.	to	4 Jul	5:00 p.m.	6.0 hours
AKN.48	7 Jul	1:30 p.m.	to	7 Jul	9:30 p.m.	8.0 hours

-continued-

Table 6.–Page 4 of 8.

Number[a]	Start Date	Start Time		End Date	End Time	Effective time
AKN.51	8 Jul	3:00 p.m.	to	8 Jul	8:00 p.m.	5.0 hours
AKN.56	10 Jul	3:30 p.m.	to	10 Jul	11:30 p.m.	7.0 hours
AKN.58	11 Jul	3:30 p.m.	to	2 Jul	11:30 p.m.	7.0 hours
AKN.61	12 Jul	4:30 p.m.	to	13 Jul	12:30 a.m.	8.0 hours
AKN.65	14 Jul	6:30 a.m.	to	14 Jul	2:30 p.m.	8.0 hours
AKN.67	15 Jul	7:30 a.m.	to	15 Jul	3:30 p.m.	8.0 hours
AKN.70	17 Jul	9:00 a.m.	to	27 Jul	9:00 a.m.	10.0 hours
Ugashik District						
Set Net						
AKN.03	4 Jun	12:01 a.m.	to	15 Jun	9:00 a.m.	[c]
AKN.14	25 Jun	2:00 p.m.	to	25 Jul	11:59 p.m.	8.0 hours
AKN.15	26 Jun	3:00 p.m.	to	27 Jul	1:00 a.m.	10.0 hours
AKN.19	27 Jun	3:00 p.m.	to	28 Jun	1:00 a.m.	10.0 hours
AKN.24	29 Jun	4:30 a.m.	to	29 Jun	2:30 p.m.	10.0 hours
AKN.27	30 Jun	5:30 a.m.	to	30 Jun	3:30 p.m.	9.0 hours
AKN.30	1 Jul	6:30 a.m.	to	1 Jul	2:30 p.m.	7.0 hours
AKN.32	2 Jul	7:30 a.m.	to	2 Jul	5:30 p.m.	7.0 hours
AKN.37	4 Jul	9:30 a.m.	to	4 Jul	7:30 p.m.	10.0 hours
AKN.42	5 Jul	10:30 a.m.	to	5 Jul	6:30 p.m.	8.0 hours
AKN.48	7 Jul	12:30 p.m.	to	7 Jul	10:30 p.m.	10.0 hours
AKN.51	8 Jul	1:00 p.m.	to	8 Jul	9:00 p.m.	8.0 hours
AKN.56	10 Jul	3:00 p.m.	to	10 Jul	11:59 p.m.	9.0 hours
AKN.58	11 Jul	3:00 p.m.	to	11 Jul	11:59 p.m.	9.0 hours
AKN.61	12 Jul	4:00 p.m.	to	13 Jul	2:00 a.m.	10.0 hours
AKN.65	14 Jul	5:30 a.m.	to	14 Jul	3:30 p.m.	10.0 hours
AKN.67	15 Jul	6:30 a.m.	to	15 Jul	4:30 p.m.	10.0 hours
AKN.70	17 Jul	9:00 a.m.	to	27 Jul	9:00 a.m.	10.0 hours
Nushagak District						
Nushagak Section						
Drift Net						
DLG.16	28 Jun	1:00 a.m.	to	28 Jun	5:00 a.m.	4.0 hours
DLG.18	29 Jun	1:00 p.m.	to	29 Jun	5:00 p.m.	4.0 hours
DLG.20	30 Jun	1:00 p.m.	to	30 Jun	6:00 p.m.	5.0 hours
DLG.21	1 Jul	12:00 p.m.	to	1 Jul	5:00 p.m.	5.0 hours
DLG.21	2 Jul	2:00 a.m.	to	2 Jul	6:00 a.m.	4.0 hours
DLG.23	2 Jul	2:00 p.m.	to	2 Jul	5:00 p.m.	3.0 hours
DLG.24	3 Jul	4:00 p.m.	to	3 Jul	7:00 p.m.	3.0 hours
DLG.30	7 Jul	5:00 p.m.	to	7 Jul	11:00 p.m.	6.0 hours
DLG.30	8 Jul	8:00 a.m.	to	8 Jul	2:00 p.m.	6.0 hours
DLG.32	8 Jul	6:00 p.m.	to	8 Jul	11:00 p.m.	5.0 hours
DLG.32	9 Jul	8:00 a.m.	to	9 Jul	2:00 p.m.	6.0 hours
DLG.33	9 Jul	7:00 p.m.	to	10 Jul	1:00 a.m.	6.0 hours
DLG.33	10 Jul	8:00 a.m.	to	10 Jul	2:00 p.m.	6.0 hours
DLG.34	10 Jul	2:00 p.m.	to	10 Jul	11:00 p.m.	9.0 hours

-continued-

Table 6.–Page 5 of 8.

Number[a]	Start Date	Start Time		End Date	End Time	Effective time
DLG.34	11 Jul	8:00 a.m.	to	11 Jul	2:30 p.m.	6.5 hours
DLG.35	11 Jul	2:30 p.m.	to	12 Jul	3:30 p.m.	25.0 hours [b]
DLG.36	12 Jul	3:30 p.m.	to	13 Jul	4:30 p.m.	25.0 hours [b]
DLG.37	13 Jul	4:30 p.m.	to	22 Jul	4:30 p.m.	216.0 hours [b]
DLG.38	24 Jul	4:30 a.m.	to	24 Jul	12:30 p.m.	8.0 hours [g]
DLG.38	26 Jul	5:30 a.m.	to	26 Jul	1:30 p.m.	8.0 hours [g]
DLG.38	27 Jul	6:30 a.m.	to	27 Jul	2:30 p.m.	8.0 hours [g]
DLG.41	29 Jul	9:30 a.m.	to	29 Jul	1:30 p.m.	4.0 hours [g]
DLG.42	30 Jul	5:30 a.m.	to	30 Jul	3:30 p.m.	10.0 hours [h]
DLG.43	31 Jul	6:30 a.m.	to	31 Jul	4:30 p.m.	10.0 hours
DLG.44	1 Aug	7:30 a.m.	to	1 Aug	7:30 p.m.	12.0 hours
DLG.44	2 Aug	8:30 a.m.	to	2 Aug	8:30 p.m.	12.0 hours
DLG.44	3 Aug	9:30 a.m.	to	3 Aug	9:30 p.m.	12.0 hours
DLG.44	4 Aug	10:30 a.m.	to	4 Aug	10:30 p.m.	12.0 hours
DLG.44	5 Aug	11:30 a.m.	to	5 Aug	11:30 p.m.	12.0 hours
DLG.44	6 Aug	11:30 a.m.	to	6 Aug	11:30 p.m.	12.0 hours
DLG.46	7 Aug	5:00 a.m.	to	7 Aug	5:00 p.m.	12.0 hours
DLG.46	8 Aug	5:00 a.m.	to	8 Aug	5:00 p.m.	12.0 hours
DLG.46	9 Aug	5:00 a.m.	to	9 Aug	5:00 p.m.	12.0 hours
DLG.47	10 Aug	7:00 a.m.	to	29 Sep	5:00 p.m.	1,186.0 hours
Nushagak District						
Nushagak Section						
Set Net						
DLG.11	26 Jun	5:30 a.m.	to	26 Jun	12:30 p.m.	7.0 hours
DLG.13	27 Jun	6:00 a.m.	to	27 Jun	1:00 p.m.	7.0 hours
DLG.15	27 Jun	8:00 p.m.	to	28 Jun	2:00 a.m.	6.0 hours
DLG.16	28 Jun	2:00 a.m.	to	28 Jun	1:00 p.m.	11.0 hours [b]
DLG.17	29 Jun	8:00 a.m.	to	29 Jun	3:00 p.m.	7.0 hours
DLG.18	29 Jun	3:00 p.m.	to	29 Jun	5:00 p.m.	2.0 hours [b]
DLG.19	29 Jun	9:30 p.m.	to	30 Jun	5:00 a.m.	7.5 hours
DLG.19	30 Jun	9:00 a.m.	to	30 Jun	3:00 p.m.	6.0 hours
DLG.20	30 Jun	3:00 p.m.	to	30 Jun	6:00 p.m.	3.0 hours [b]
DLG.20	1 Jul	9:30 a.m.	to	1 Jul	5:00 p.m.	7.5 hours
DLG.21	1 Jul	11:00 p.m.	to	2 Jul	6:00 a.m.	7.0 hours
DLG.21	2 Jul	11:00 a.m.	to	2 Jul	5:00 p.m.	6.0 hours
DLG.23	3 Jul	12:00 p.m.	to	3 Jul	7:00 p.m.	7.0 hours
DLG.30	7 Jul	4:30 p.m.	to	8 Jul	10:30 a.m.	18.0 hours
DLG.32	8 Jul	10:30 a.m.	to	8 Jul	11:00 p.m.	12.5 hours [b]
DLG.32	9 Jul	5:30 a.m.	to	9 Jul	2:00 p.m.	8.5 hours
DLG.33	9 Jul	6:30 p.m.	to	10 Jul	2:00 p.m.	19.5 hours
DLG.34	11 Jul	7:30 a.m.	to	11 Jul	2:30 p.m.	7.0 hours
DLG.35	11 Jul	2:30 p.m.	to	12 Jul	3:30 p.m.	25.0 hours [b]
DLG.36	12 Jul	3:30 p.m.	to	13 Jul	4:30 p.m.	25.0 hours [b]
DLG.37	13 Jul	4:30 p.m.	to	22 Jul	4:30 p.m.	216.0 hours [b]

-continued-

Table 6.–Page 6 of 8.

Number[a]	Start Date	Start Time		End Date	End Time	Effective time
DLG.38	24 Jul	4:30 a.m.	to	24 Jul	12:30 p.m.	8.0 hours [g]
DLG.38	26 Jul	5:30 a.m.	to	26 Jul	1:30 p.m.	8.0 hours [g]
DLG.38	27 Jul	6:30 a.m.	to	27 Jul	2:30 p.m.	8.0 hours [g]
DLG.41	29 Jul	9:30 a.m.	to	29 Jul	1:30 p.m.	4.0 hours [g]
DLG.42	30 Jul	5:30 a.m.	to	30 Jul	3:30 p.m.	10.0 hours [h]
DLG.43	31 Jul	6:30 a.m.	to	31 Jul	4:30 p.m.	10.0 hours
DLG.44	1 Aug	7:30 a.m.	to	1 Aug	7:30 p.m.	12.0 hours
DLG.44	2 Aug	8:30 a.m.	to	2 Aug	8:30 p.m.	12.0 hours
DLG.44	3 Aug	9:30 a.m.	to	3 Aug	9:30 p.m.	12.0 hours
DLG.44	4 Aug	10:30 a.m.	to	4 Aug	10:30 p.m.	12.0 hours
DLG.44	5 Aug	11:30 a.m.	to	5 Aug	11:30 p.m.	12.0 hours
DLG.44	6 Aug	11:30 a.m.	to	6 Aug	11:30 p.m.	12.0 hours
DLG.46	7 Aug	5:00 a.m.	to	7 Aug	5:00 p.m.	12.0 hours
DLG.46	8 Aug	5:00 a.m.	to	8 Aug	5:00 p.m.	12.0 hours
DLG.46	9 Aug	5:00 a.m.	to	9 Aug	5:00 p.m.	12.0 hours
DLG.47	10 Aug	7:00 a.m.	to	29 Sep	5:00 p.m.	1,186.0 hours
Nushagak District						
Igushik Section						
Drift Net						
DLG.18	29 Jun	1:00 p.m.	to	29 Jun	5:00 p.m.	4.0 hours
DLG.20	30 Jun	1:00 p.m.	to	30 Jun	6:00 p.m.	5.0 hours
DLG.25	4 Jul	3:00 p.m.	to	4 Jul	8:00 p.m.	5.0 hours
DLG.25	5 Jul	3:00 p.m.	to	5 Jul	9:00 p.m.	6.0 hours
DLG.27	6 Jul	4:00 a.m.	to	6 Jul	10:00 a.m.	6.0 hours
DLG.29	6 Jul	3:00 p.m.	to	6 Jul	9:00 p.m.	6.0 hours
DLG.29	7 Jul	5:00 a.m.	to	7 Jul	11:00 a.m.	6.0 hours
DLG.30	7 Jul	5:00 p.m.	to	7 Jul	11:00 p.m.	6.0 hours
DLG.30	8 Jul	8:00 a.m.	to	8 Jul	2:00 p.m.	6.0 hours
DLG.32	8 Jul	6:00 p.m.	to	8 Jul	11:00 p.m.	5.0 hours
DLG.32	9 Jul	8:00 a.m.	to	9 Jul	2:00 p.m.	6.0 hours
DLG.33	9 Jul	7:00 p.m.	to	10 Jul	1:00 a.m.	6.0 hours
DLG.33	10 Jul	8:00 a.m.	to	10 Jul	2:00 p.m.	6.0 hours
DLG.34	10 Jul	2:00 p.m.	to	10 Jul	11:00 p.m.	9.0 hours
DLG.34	11 Jul	8:00 a.m.	to	11 Jul	2:30 p.m.	6.5 hours
DLG.35	11 Jul	2:30 p.m.	to	12 Jul	3:30 p.m.	25.0 hours [b]
DLG.36	12 Jul	3:30 p.m.	to	13 Jul	4:30 p.m.	25.0 hours [b]
DLG.37	13 Jul	4:30 p.m.	to	22 Jul	4:30 p.m.	216.0 hours [b]
DLG.38	24 Jul	4:30 a.m.	to	24 Jul	12:30 p.m.	8.0 hours [g]
DLG.38	26 Jul	5:30 a.m.	to	26 Jul	1:30 p.m.	8.0 hours [g]
DLG.38	27 Jul	6:30 a.m.	to	27 Jul	2:30 p.m.	8.0 hours [g]
DLG.41	29 Jul	9:30 a.m.	to	29 Jul	1:30 p.m.	4.0 hours [g]
DLG.42	30 Jul	5:30 a.m.	to	30 Jul	3:30 p.m.	10.0 hours [h]
DLG.43	31 Jul	6:30 a.m.	to	31 Jul	4:30 p.m.	10.0 hours
DLG.44	1 Aug	7:30 a.m.	to	1 Aug	7:30 p.m.	12.0 hours

-continued-

Table 6.–Page 7 of 8.

Number[a]	Start Date	Start Time		End Date	End Time	Effective time
DLG.44	2 Aug	8:30 a.m.	to	2 Aug	8:30 p.m.	12.0 hours
DLG.44	3 Aug	9:30 a.m.	to	3 Aug	9:30 p.m.	12.0 hours
DLG.44	4 Aug	10:30 a.m.	to	4 Aug	10:30 p.m.	12.0 hours
DLG.44	5 Aug	11:30 a.m.	to	5 Aug	11:30 p.m.	12.0 hours
DLG.44	6 Aug	11:30 a.m.	to	6 Aug	11:30 p.m.	12.0 hours
DLG.46	7 Aug	5:00 a.m.	to	7 Aug	5:00 p.m.	12.0 hours
DLG.46	8 Aug	5:00 a.m.	to	8 Aug	5:00 p.m.	12.0 hours
DLG.46	9 Aug	5:00 a.m.	to	9 Aug	5:00 p.m.	12.0 hours
DLG.47	10 Aug	7:00 a.m.	to	29 Sep	5:00 p.m.	1,186.0 hours
Nushagak District						
Igushik Section						
Set Net						
DLG.2	15 Jun	10:00 a.m.	to	15 Jun	6:00 p.m.	8.0 hours[c]
DLG.2	16 Jun	11:00a.m.	to	16 Jun	7:00 p.m.	8.0 hours
DLG.2	17 Jun	11:30 a.m.	to	17 Jun	7:30 p.m.	8.0 hours
DLG.2	18 Jun	12:00 p.m.	to	18 Jun	8:00 p.m.	8.0 hours
DLG.5	19 Jun	1:00 p.m.	to	19 Jun	9:00 p.m.	8.0 hours
DLG.5	20 Jun	1:30 p.m.	to	20 Jun	9:30 p.m.	8.0 hours
DLG.5	21 Jun	2:30 p.m.	to	21 Jun	10:30 p.m.	8.0 hours
DLG 8	22 Jun	2:30a.m.	to	22 Jun	2:30 p.m.	12.0 hours
DLG.8	23 Jun	4:00 a.m.	to	23 Jun	4:00 p.m.	12.0 hours
DLG.9	24 Jun	4:30 a.m.	to	24 Jun	4:30 p.m.	12.0 hours
DLG.9	25 Jun	5:00 a.m.	to	25 Jun	5:00 p.m.	12.0 hours
DLG.10	26 Jun	5:30 a.m.	to	26 Jun	5:30 a.m.	12.0 hours
DLG.13	27 Jun	6:00 a.m.	to	27 Jun	6:00 p.m.	12.0 hours
DLG.15	28 Jun	7:00 a.m.	to	28 Jun	7:00 p.m.	12.0 hours
DLG.17	29 Jun	8:00 a.m.	to	29 Jun	3:00 p.m.	7.0 hours
DLG.18	29 Jun	3:00 p.m.	to	29 Jun	5:00 p.m.	2.0 hours[b]
DLG.19	29 Jun	9:30 p.m.	to	30 Jun	5:00 a.m.	7.5 hours
DLG.19	30 Jun	9:00 a.m.	to	30 Jun	3:00 p.m.	6.0 hours
DLG.20	30 Jun	3:00 p.m.	to	30 Jun	6:00 p.m.	3.0 hours[b]
DLG.20	1 Jul	9:30 a.m.	to	1 Jul	5:00 p.m.	7.5 hours
DLG.21	1 Jul	11:00 p.m.	to	2 Jul	6:00 a.m.	7.0 hours
DLG.21	2 Jul	11:00 a.m.	to	2 Jul	5:00 p.m.	6.0 hours
DLG.23	3 Jul	12:00 p.m.	to	3 Jul	7:00 p.m.	7.0 hours
DLG.24	4 Jul	1:00 p.m.	to	4 Jul	8:00 p.m.	7.0 hours
DLG.25	4 Jul	8:00 p.m.	to	5 Jul	9:00 p.m.	25.0 hours[b]
DLG.27	5 Jul	9:00 p.m.	to	6 Jul	10:00 p.m.	25.0 hours[b]
DLG.29	6 Jul	10:00 p.m.	to	7 Jul	11:00 p.m.	25.0 hours[b]
DLG.30	7 Jul	11:00 p.m.	to	9 Jul	1:00 a.m.	26.0 hours[b]
DLG.32	9 Jul	1:00 a.m.	to	9 Jul	1:00 p.m.	12.0 hours[b]
DLG.33	9 Jul	1:00 p.m.	to	[i]		

-continued-

Table 6.–Page 8 of 8.

Number[a]	Start Date	Start Time		End Date	End Time	Effective time
Wood River Special Harvest Area						
Drift Net						
DLG.25	5 Jul	3:00 p.m.	to	5 Jul	9:00 p.m.	6.0 hours
DLG.28	6 Jul	5:30 a.m.	to	6 Jul	11:30 a.m.	6.0 hours
DLG.29	6 Jul	3:30 p.m.	to	6 Jul	9:30 p.m.	6.0 hours
DLG.29	7 Jul	6:30 a.m.	to	7 Jul	1:30 p.m.	7.0 hours
DLG.30	7 Jul	5:00 p.m.	to	7 Jul	8:00 p.m.	3.0 hours
Wood River Special Harvest Area						
Set Net						
DLG.25	5 Jul	2:30 p.m.	to	5 Jul	8:00 p.m.	5.5 hours
DLG.28	6 Jul	5:00 a.m.	to	6 Jul	10:30 a.m.	5.5 hours
DLG.29	6 Jul	3:00 p.m.	to	6 Jul	8:30 p.m.	5.5 hours
DLG.29	7 Jul	6:00 a.m.	to	7 Jul	11:30 a.m.	5.5 hours
Togiak District						
Drift and Set Net						
DLG.4	18 Jun	9:00 a.m.	to	22 Jun	9:00 a.m.	48.0 hours[j,k]
DLG.5	27 Jun	9:00 p.m.	to	29 Jun	9:00 a.m.	36.0 hours[j]
DLG.22	15 Jul	9:00 a.m.	to	30 Jul	11:59 p.m.	[d]
DLG.39	27 Jul	9:00 a.m.	to	28 Jul	9:00 p.m.	36.0 hours[l]
DLG.45	3 Aug	9:00 a.m.	to	4 Aug	9:00 p.m.	36.0 hours[l]
DLG.48	24 Aug	9:00 a.m.	to	25 Aug	9:00 a.m.	24.0 hours[l]

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

[b] Extends current fishing period.

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

[d] Gillnet mesh size is restricted to 5.5 inches or less.

[e] Weekly schedule: 9:00 a.m. Monday to 9:00 a.m. Wednesday, 9:00 a.m. Thursday to 9:00 a.m. Friday.

[f] Transfer waiting period waived.

[g] Gillnet mesh size is restricted to 4.75 inches or less.

[h] Gillnet mesh size is unrestricted.

[i] Commercial fishing open until further notice.

[j] Reduced the weekly fishing schedule in Togiak River section.

[k] Changes coordinate boundary of Togiak River section for the season.

[l] Extends the weekly fishing schedule in Togiak River section.

Table 7.–Commercial salmon catch by date and species, in numbers of fish, Naknek-Kvichak District, Bristol Bay, 2012.

Date	Hours fished		Deliveries		Sockeye	Chinook	Chum	Pink	Coho	Total
	Drift	Set	Drift	Set						
6/12 [a,b]										
6/14 [a]	24	24	5	2	53	0	0	0	0	53
6/15 [a]	9	9	0	1	18	0	0	0	0	18
6/18 [a]	15	15	139	13	9,490	5	430	0	0	9,925
6/19 [a]	24	24	113	13	6,304	1	196	0	0	6,501
6/20 [a]	24	24	81	13	6,911	0	151	0	0	7,062
6/21 [a]	24	24	166	23	15,556	1	282	0	0	15,839
6/22 [a]	9	9	54	7	2,991	0	39	0	0	3,030
6/26 [a]	7.5	8.5	372	139	117,746	5	447	0	0	118,198
6/27 [a]	7.5	8.5	453	114	477,195	6	1,100	0	0	478,301
6/28 [a]	7	8	494	214	340,117	4	1,961	0	0	342,082
6/29 [a]	6.5	8	489	249	276,215	11	665	0	0	276,891
6/30 [a]	7	16	494	232	354,555	11	1,299	0	0	355,865
7/1 [a]	7/6.5	24	869	387	417,849	7	1,608	0	0	419,464
7/2 [a]	5	24	530	586	738,374	15	5,730	0	0	744,119
7/3 [a]	5	24	531	694	561,429	9	909	0	0	562,347
7/4 [a]	7.5/5.5	19	977	501	734,690	15	1,288	0	0	735,993
7/5 [a]	8/7	9/9.5	1027	473	1,347,108	17	3,421	0	0	1,350,546
7/6 [a]	8.5/7.0	8.5/9.5	859	380	1,210,911	32	3,684	0	0	1,214,627
7/7 [a]	7/6.5	24	1064	523	670,083	15	2,691	0	0	672,789
7/8 [a]	7.0/7.0	24	963	425	906,545	31	5,992	0	0	912,568
7/9 [a]	8.0/7.0	24	1168	479	872,942	17	7,617	0	0	880,576
7/10 [a]	7	24	564	157	143,498	11	1,915	0	0	145,424
7/11 [a]	7	24	569	332	235,940	19	4,419	0	0	240,378
7/12		24	0	275	36,418	8	312	0	0	36,738
7/13		24	0	433	78,532	14	868	0	0	79,414
7/14		24	0	364	67,442	23	789	0	0	68,254
7/15		24	0	242	51,922	22	2,729	0	0	54,673
7/16	24	24	593	238	148,986	81	27,520	0	0	176,587
7/17	24	24	405	182	39,491	55	6,944	0	0	46,490
7/18	24	24	293	110	36,245	45	6,382	0	0	42,672
7/19	24	24	172	112	33,244	13	8,304	0	0	41,561
7/20	24	24	115	56	20,610	48	5,334	0	0	25,992

-continued-

Table 7.–Page 2 of 2.

Date	Hours fished		Deliveries		Sockeye	Chinook	Chum	Pink	Coho	Total
	Drift	Set	Drift	Set						
7/21	24	24	100	29	14,913	61	8,388	20	5	23,387
7/22	24	24	77	20	6,927	40	6,424	101	1	13,493
7/23	24	24	34	40	2,197	31	2,073	72	2	4,375
7/24	24	24	17	21	2,261	21	951	105	12	3,350
7/25	24	24	3	22	1,754	32	0	225	13	2,024
7/26	24	24	1	17	1,309	35	0	312	18	1,674
7/27	9	9	7	5	1888	88	0	519	44	2,539
7/30	15	15	0	8	438	6	0	546	98	1,088
7/31	24	24	1	8	517	3	0	779	65	1,364
8/1	24	24	4	3	372	5	0	683	41	1,101
8/2 [b]										
8/3 [b]										
8/6 [b]										
8/7 [b]										
8/8 [b]										
8/9 [b]										
8/10 [b]										
8/13 [b]										
8/14 [b]										
8/15 [b]										
8/16 [b]										
Total			13,805	8,157	9,992,068	863	122,913	3,535	423	10,119,622

Note: Unless otherwise noted by date, blank cells represent days with no data.

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

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

Table 8.–Daily sockeye salmon escapement tower counts by river system, east side Bristol Bay, 2012.

	Kvichak River		Naknek River		Egegik River		Ugashik River	
Date	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
6/19			204	204	6	6		
6/20	54	54	300	504	0	6		
6/21	144	198	144	648	0	6		
6/22	144	342	168	816	0	6		
6/23	180	522	168	984	30	36		
6/24	24	546	576	1,560	21,276	21,312		
6/25	78	624	43,362	44,922	40,248	61,560		
6/26	4,836	5,460	49,842	94,764	104,568	166,128		
6/27	31,968	37,428	28,362	123,126	43,434	209,562	5,724	5,724
6/28	8,778	46,206	50,880	174,006	17,304	226,866	6,558	12,282
6/29	19,476	65,682	70,920	244,926	3,096	229,962	9,078	21,360
6/30	162,402	228,084	36,774	281,700	3,222	233,184	2,748	24,108
7/01	213,024	441,108	14,790	296,490	15,948	249,132	2,154	26,262
7/02	193,974	635,082	31,710	328,200	43,470	292,602	5,562	31,824
7/03	89,244	724,326	94,164	422,364	25,662	318,264	2,526	34,350
7/04	101,022	825,348	128,874	551,238	149,904	468,168	1,758	36,108
7/05	413,994	1,239,342	44,988	596,226	205,194	673,362	9,252	45,360
7/06	560,958	1,800,300	45,324	641,550	180,972	854,334	30,390	75,750
7/07	666,996	2,467,296	31,950	673,500	134,448	988,782	20,502	96,252
7/08	426,888	2,894,184	27,816	701,316	43,848	1,032,630	14,808	111,060
7/09	282,270	3,176,454	29,772	731,088	21,816	1,054,446	27,414	138,474
7/10	308,766	3,485,220	29,184	760,272	70,830	1,125,276	58,806	197,280
7/11	209,532	3,694,752	11,022	771,294	17,076	1,142,352	111,312	308,592
7/12	102,726	3,797,478	6,612	777,906	20,664	1,163,016	71,646	380,238
7/13	49,308	3,846,786	49,500	827,406	31,920	1,194,936	64,194	444,432
7/14	29,424	3,876,210	28,668	856,074	13,890	1,208,826	32,142	476,574
7/15	115,530	3,991,740	21,474	877,548	8,646	1,217,472	18,090	494,664
7/16	92,400	4,084,140	11,016	888,564	11,634	1,229,106	41,868	536,532
7/17	54,762	4,138,902	4,788	893,352	4,794	1,233,900	24,564	561,096
7/18	17,172	4,156,074	3,348	896,700			39,234	600,330
7/19	5,670	4,161,744	3,612	900,312			28,128	628,458
7/20	2,700	4,164,444					19,044	647,502
7/21							6,168	653,670
7/22							7,674	661,344
7/23							4,542	665,886
7/24							2,178	668,064
7/25							2,514	670,578

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

Table 9.–Comparison of daily sockeye salmon escapement estimates by tower count and river test fishing enumeration methods, Kvichak River, Bristol Bay, 2012.

	Tower Count		River Test Fishing				
			Fish per	Index Points		Cumulative	Estimated
Date	Daily	Cum	Index Pt.[a]	Daily	Cum	Escapement	River Fish[b]
6/20	54	54					
6/21	144	198					
6/22	144	342	74	0	0		
6/23	180	522	74	0	0		
6/24	24	546	74	15	15	1,103	
6/25	78	624	74	575	590	43,655	
6/26	4,836	5,460	74	388	977	72,332	
6/27	31,968	37,428	74	25	1,002	74,165	50,000
6/28	8,778	46,206	74	1,068	2,070	153,195	250,000
6/29	19,476	65,682	92	4,202	6,273	577,077	200,000
6/30	162,402	228,084	110	3,045	9,317	1,024,892	200,000
7/01	213,024	441,108	74	1,935	11,252	832,636	200,000
7/02	193,974	635,082	75	605	11,857	889,249	300,000
7/03	89,244	724,326	64	867	12,723	814,302	250,000
7/04	101,022	825,348	67	8,695	21,419	1,435,063	200,000
7/05	413,994	1,239,342	65	5,483	26,901	1,748,596	150,000
7/06	560,958	1,800,300	76	3,560	30,461	2,315,047	200,000
7/07	666,996	2,467,296	85	3,138	33,599	2,855,887	100,000
7/08	426,888	2,894,184	89	2,333	35,932	3,197,904	50,000
7/09	282,270	3,176,454	91	1,544	37,475	3,410,266	110,000
7/10	308,766	3,485,220	97	1,177	38,653	3,749,294	100,000
7/11	209,532	3,694,752	98	285	38,938	3,815,904	100,000
7/12	102,726	3,797,478	98	151	39,088	3,830,654	70,000
7/13	49,308	3,846,786	100	354	39,443	3,944,252	200,000
7/14	29,424	3,876,210	98	1,263	40,706	3,989,166	150,000
7/15	115,530	3,991,740					
7/16	92,400	4,084,140					
7/17	54,762	4,138,902					
7/18	17,172	4,156,074					

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

[a] The FPI (fish per index point) used to estimate the daily ERFs (estimated river fish) prior to using lag time relationships was calculated using an average of the 1990–2011 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 the first day. This method was used until June 29 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 catchability, etc.

Table 10.–Summary of sockeye salmon test fishing indices in the Naknek/Kvichak District, by index area and date, Bristol Bay, 2012.

Date	Naknek R. Mouth	Pederson Point	Cutbank & Graveyard	Gravel Spit	Half Moon Bay	Middle Naknek	Johnston Hill	Division Buoy	Ships Anchorage	Deadmans Sands
6/25	170						35	200	310	
6/28				103	116			495		
6/29	12			400					74	

Table 11.–Inshore commercial catch and escapement of sockeye salmon, in numbers of fish, Bristol Bay, 2012.

District and River System		Catch	Escapement	Total Run
Naknek-Kvichak District				
Kvichak River		6,207,636	4,164,444	10,372,080
Alagnak River		1,555,581	861,747	2,417,328
Naknek River		2,228,851	900,312	3,129,163
	Total	9,992,068	5,926,503	15,918,571
Egegik District		4,896,532	1,233,900	6,130,432
Ugashik District		2,367,544	695,018 [a]	3,062,562
Nushagak District				
Wood River		1,752,922	764,211	2,517,133
Igushik River		292,999	193,326	486,325
Nushagak River		650,228	432,438	1,082,666
	Total	2,696,149	1,389,975	4,086,124
Togiak District				
Togiak Lake			203,148	203,148
Togiak River/Tributaries		589,836	[b]	589,836
Kulukak System		36,083	[b]	36,083
Other Systems [c, d]			[b]	
	Total	625,919	203,148	829,067
Total Bristol Bay		20,578,212	9,448,544	30,026,756

[a] Includes Ugashik River tower and aerial survey estimates from King Salmon and Dog Salmon rivers.

[b] No monitoring of escapement occurs.

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

[d] Less than 4 permit holders involved in fishery; harvest confidential.

Table 12.–Commercial salmon catch by date and species, in numbers of fish, Egegik District, Bristol Bay, 2012.

	Hours fished		Deliveries							
Date	Drift	Set	Drift	Set	Sockeye	Chinook	Chum	Pink	Coho	Total
6/5 [a]										
6/6 [a]										
6/7 [a]										
6/8	9	9								0
6/11	15	15	57	15	1,982		70			2,052
6/12	24	24	14	30	1,177		44			1,221
6/13	9	9	11	9	1,053	1	37			1,091
6/14	15	15	53	41	4,301		74			4,375
6/15	9	9	80	31	6,992		102			7,094
6/19		8		155	13,577		232			13,809
6/22		8		123	4,730	4	155			4,889
6/25	5	8	208	291	203,248		1,279			204,527
6/26	6	8	220	158	236,918	1	1,100			238,019
6/27	6	8	282	104	116,649	2	590			117,241
6/29	7	8	314	92	314,579		1,843			316,422
6/30	4	8	309	135	227,914		1,260			229,174
7/2		8		284	120,820		571			121,391
7/3	4.5	8.5	275	323	534,054	3	1,466			535,523
7/4	20	18	499	194	739,655	1	2,653			742,309
7/5	10	8	511	224	606,442		5,335			611,777
7/6	16	8	427	134	433,885	6	2,303			436,194
7/7	8	8	310	99	261,792	2	1,305			263,099
7/8	7	8	285	140	251,788		1,352			253,140
7/9	6	8	235	171	132,697		1,011			133,708
7/10	6	8	238	139	99,000		1,583			100,583
7/11	12.5	13.75	355	238	116,978		1,745			118,723
7/12	9	10.25	209	90	54,304		1,117			55,421
7/13	10.25	12.25	275	211	110,610		1,732			112,342
7/14	16.25	16.25	255	148	112,589		2,297			114,886
7/15	12.5	12.5	192	102	68,126		2,099			70,225
7/16	15	15	205	65	30,678		1,491			32,169
7/17	24	24	112	90	18,250	1	747			18,998
7/18	24	24	106	65	23,759		999			24,758
7/19	24	24	63	51	13,685		495			14,180
7/20	24	24	41	42	8,098		271			8,369

-continued-

Table 12.–Page 2 of 2.

	Hours fished		Deliveries							
Date	Drift	Set	Drift	Set	Sockeye	Chinook	Chum	Pink	Coho	Total
7/21	24	24	29	8	6,089	1	250			6,340
7/22	24	24	11	9	2,937		109			3,046
7/23	24	24	10	10	2,726		128			2,854
7/24	24	24	13	10	4,017		157			4,174
7/25	24	24	10	6	2,342		81		10	2,433
7/26	24	24	10	7	2,730		90		30	2,850
7/27	9	9	4	2	535		18		3	556
7/30	15	15	7	7	703				58	761
7/31	24	24	10	4	1,283				55	1,338
8/1	24	24	10	2	1,309	2		120	288	1,719
8/2	24	24	12	5	1002			76	261	1,339
8/3	9	9	4	4	312			89	188	589
8/6 [a]										
8/7	24	24								0
8/8 [a]										
8/9 [a]										
8/10 [a]										
8/13	15	15								0
8/14	24	24								0
8/15	24	24								0
8/16	24	24								0
8/17	9	9								0
8/20	15	15								0
8/21	24	24								0
8/22	24	24								0
8/23	24	24								0
8/24	9	9								0
8/27	15	15								0
8/28	24	24								0
8/29	24	24								0
8/30	24	24								0
Totals	1,030	1,067	6,271	4,076	4,896,532	24	38,191	285	1,286	4,936,318

Note: Unless otherwise noted by date, blank cells represent days with no data.

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

Table 13.–Comparison of daily sockeye salmon escapement estimates by tower count and river test fishing enumeration methods, Egegik River, Bristol Bay, 2012.

	Tower Count		River Test Fishing				
				Index Points		Estimated Cumulative	Estimated
Date	Daily	Cum	Fish per Index Pt.[a]	Daily	Cum	Escapement	River Fish[b]
14 Jun							
15 Jun			65	14	14	902	
16 Jun			65	93	107	6,957	
17 Jun			65	479	586	38,117	
18 Jun			65	313	899	58,433	
19 Jun	6	6	65	149	1,048	68,100	
20 Jun	0	6	65	332	1,380	89,711	
21 Jun	0	6	65	181	1,561	101,487	
22 Jun	0	6	65	24	1,585	103,046	
23 Jun	30	36	65	29	1,614	104,913	
24 Jun	21,276	21,312	65	103	1,717	111,611	
25 Jun	40,248	61,560	65	477	2,194	142,589	40,000
26 Jun	104,568	166,128	76	1,131	3,325	252,676	70,000
27 Jun	43,434	209,562	77	96	3,420	263,371	15,000
28 Jun	17,304	226,866	80	30	3,450	276,019	10,000
29 Jun	3,096	229,962	68	13	3,463	235,474	5,000
30 Jun	3,222	233,184	68	107	3,570	242,774	10,000
1 Jul	15,948	249,132	72	682	4,252	306,134	60,000
2 Jul	43,470	292,602	72	911	5,163	371,717	80,000
3 Jul	25,662	318,264	79	2,273	7,436	587,424	275,000
4 Jul	149,904	468,168	77	1,397	8,833	680,143	200,000
5 Jul	205,194	673,362	86	724	9,557	821,868	150,000
6 Jul	180,972	854,334	97	295	9,851	955,581	100,000
7 Jul	134,448	988,782	104	81	9,933	1,033,015	50,000
8 Jul	43,848	1,032,630	104	301	10,234	1,064,331	30,000
9 Jul	21,816	1,054,446	104	322	10,556	1,097,813	40,000
10 Jul	70,830	1,125,276	109	275	10,831	1,180,575	50,000
11 Jul	17,076	1,142,352	106	196	11,027	1,168,837	20,000
12 Jul	20,664	1,163,016	105	514	11,541	1,211,798	50,000
13 Jul	31,920	1,194,936					
14 Jul	13,890	1,208,826					
15 Jul	8,646	1,217,472					
16 Jul	11,634	1,229,106					
17 Jul	4,794	1,233,900					

Note: Blank cells indicate no data.

[a] The FPI used to estimate the daily ERFs prior to using lag time relationships was calculated using an average of the 1990–2011 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 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 catchability, etc.

Table 14.–Inshore run of sockeye salmon by age class, river system, and district, in thousands of fish, Bristol Bay, 2012.

District and River System [a]		1.2	2.2	2-Ocean	1.3	2.3	3-Ocean	1.4	Total [b]
Naaknek-Kvichak District									
Kvichak River									
	Number	2,333	6,042	8,376	1,407	578	1,984	2	10,372
	Percent	22.5	58.3	80.8	13.6	5.6	19.1	0.0	99.9
Alagnak River									
	Number	543	530	1,073	1,189	154	1,343	1	2,417
	Percent	22.4	21.9	44.4	49.2	6.4	55.6	0.0	100.0
Naknek River									
	Number	557	611	1,168	1,440	468	1,909	29	3,129
	Percent	17.8	19.5	37.3	46.0	15.0	61.0	0.9	99.3
Total	Number	3,433	7,184	10,616	4,036	1,200	5,236	32	15,918
	Percent	21.6	45.1	66.7	25.4	7.5	32.9	0.2	99.8
Egegik District									
	Number	650	3,577	4,227	411	1,376	1,786	0	6,130
	Percent	10.6	58.3	69.0	6.7	22.4	29.1	0.0	98.1
Ugashik District									
	Number	1,068	748	1,816	979	245	1,224	8	3,063
	Percent	34.9	24.4	59.3	32.0	8.0	39.9	0.3	99.5
Nushagak District									
Wood River									
	Number	1,251	173	1,424	1,028	49	1,077	14	2,517
	Percent	49.7	6.9	56.6	40.8	1.9	42.8	0.6	99.4
Igushik River									
	Number	51	16	67	405	13	418	2	486
	Percent	10.5	3.3	13.8	83.3	2.7	86.0	0.4	100.2
Nushagak River									
	Number	171	0	171	793	8	801	91	1,083
	Percent	15.8	0.0	15.8	73.2	0.7	74.0	8.4	98.2
Total	Number	1,473	189	1,662	2,226	70	2,296	107	4,086
	Percent	36.0	4.6	40.7	54.5	1.7	56.2	2.6	99.5
Togiak District [c]									
	Number	125	38	163	652	11	663	2	829
	Percent	15.1	4.6	19.7	78.6	1.3	80.0	0.2	99.9
Total Bristol Bay [d]									
	Number	6,749	11,735	18,484	8,303	2,902	11,205	149	30,026
	Percent	22.5	39.1	61.6	27.7	9.7	37.3	0.5	99.4

[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 15.–Daily district registration of drift gillnet permit holders by district, Bristol Bay, 2012.

Date	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
6/23 [a]	13	20	14	71	24	142
6/24 [a]	29	24	14	104	28	199
6/25	128	145	57	147	28	505
6/26	471	263	198	246	40	1,218
6/27	550	309	233	292	43	1,427
6/28	590	357	209	394	45	1,595
6/29	606	357	210	392	47	1,612
6/30	628	374	212	395	48	1,657
7/01	644	357	214	386	51	1,652
7/02	645	352	216	388	54	1,655
7/03	672	339	220	377	56	1,664
7/04	680	345	223	356	57	1,661
7/05	706	345	229	305	59	1,644
7/06	719	350	189	274	60	1,592
7/07	734	377	195	243	62	1,611
7/08	777	392	197	233	64	1,663
7/09	799	337	210	233	66	1,645
7/10	812	330	219	232	68	1,661
7/11	838	324	233	228	68	1,691
7/12	836	299	238	220	70	1,663
7/13	824	279	252	218	70	1,643
7/14	813	287	280	207	71	1,658
7/15	799	315	290	218	72	1,694
7/16	800	342	284	223	73	1,722
Average [b]	685	326	219	282	58	1,570

[a] Registration in east side districts not required until 6/25.

[b] Does not include 6/23 and 6/24.

Table 16.–Commercial salmon catch by date and species, in numbers of fish, Ugashik District, Bristol Bay, 2012.

	Hours fished		Deliveries							
Date	Drift	Set	Drift	Set	Sockeye	Chinook	Chum	Pink	Coho	Total
6/11	15	15	5		106		0			106
6/12	24	24								0
6/13	24	24	4		60		0			60
6/14	24	24	7		178		0			178
6/15 [a]										
6/25	8	10	111	49	75,074	3	789			75,866
6/26	9	9	157	51	104,129	5	1,041			105,175
6/27	9	12	209	47	135,961	11	1,036			137,008
6/29	6	10	153	50	146,748	3	1,355			148,106
6/30	7	10	158	48	149,452	10	1,353			150,815
7/1	5	8	154	41	183,105	1	2,708			185,814
7/2	7	10	168	43	240,382	9	1,652			242,043
7/4	6	10	178	48	233,259	4	1,739			235,002
7/5		8		60	20,489	7	136			20,632
7/7	8	10	150	117	337,323	4	1,969			339,296
7/8	5	8	147	53	103,789	2	819			104,610
7/10	8	9	184	71	155,680	6	2,198			157,884
7/11	8	9	182	59	118,215	4	1,395			119,614
7/12	8	10	175	57	115,823	2	1,819			117,644
7/14	8	10	210	42	35,774	1	1,117			36,892
7/15	8	10	159	18	57,253	9	1,401			58,663
7/17	15	15	223	33	51,686	3	1,700			53,389
7/18	24	24	186	27	46,242	2	2,486			48,730
7/19	24	24	119	21	20,373		964			21,337
7/20	24	24	73	25	11,362		870			12,232
7/21	24	24	34	24	6,956		465			7,421
7/22	24	24	24	10	4,782		491			5,273
7/23	24	24	30	5	6,723		575			7,298
7/24	24	24	17	4	6,580		165			6,745
7/25	24	24								0
7/26	24	24								0
7/27	9	9								0
7/30	15	15								0
7/31	24	24								0
8/2	15	15								0
8/3	24	24								0
8/4	24	24								0
8/5	24	24								0
8/6	9	9								0
8/9	15	15								0
8/10	24	24								0
8/11	24	24								0
8/12	24	24								0

-continued-

Table 16.–Page 2 of 2.

	Hours fished		Deliveries							
Date	Drift	Set	Drift	Set	Sockeye	Chinook	Chum	Pink	Coho	Total
8/13	9	9								0
8/16	15	15								0
8/17	24	24								0
8/18	24	24								0
8/19	24	24								0
8/20	9	9								0
8/23	15	15								0
8/24	24	24								0
8/25	24	24								0
8/26	24	24								0
8/27	9	9								0
8/29	15	15								0
8/30	24	24								0
Totals	908	951	3,218	1,003	2,367,544	86	30,244	0	0	2,397,874

Note: Unless otherwise noted by date, blank cells represent days with no data.

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

Table 17.–Comparison of daily sockeye salmon escapement estimates by tower count and river test fishing enumeration methods, Ugashik River, Bristol Bay, 2012.

	Tower Count		River Test Fishing				
				Index Points		Estimated	
Date	Daily	Cum	Fish per Index Pt.[a]	Daily	Cum	Cumulative Escapement	Estimated River Fish[b]
23 Jun			50	219	219	10,929	
24 Jun			50	167	386	19,294	
25 Jun			50	106	492	24,600	25,000
26 Jun			50	124	616	30,807	35,000
27 Jun	5,724	5,724	50	168	784	39,212	30,000
28 Jun	6,558	12,282	50	167	951	47,546	30,000
29 Jun	9,078	21,360	49	260	1,211	59,325	40,000
30 Jun	2,748	24,108	44	411	1,622	71,364	50,000
1 Jul	2,154	26,262	43	281	1,903	81,812	60,000
2 Jul	5,562	31,824	41	226	2,129	87,276	50,000
3 Jul	2,526	34,350	36	281	2,410	86,766	50,000
4 Jul	1,758	36,108	34	172	2,582	87,796	50,000
5 Jul	9,252	45,360	33	354	2,936	96,886	50,000
6 Jul	30,390	75,750	40	257	3,193	127,730	50,000
7 Jul	20,502	96,252	45	294	3,487	156,922	60,000
8 Jul	14,808	111,060	52	930	4,417	229,685	120,000
9 Jul	27,414	138,474	58	1,308	5,725	332,044	200,000
10 Jul	58,806	197,280	62	1,184	6,908	428,321	225,000
11 Jul	111,312	308,592	70	526	7,435	520,437	200,000
12 Jul	71,646	380,238	61	350	7,785	474,869	100,000
13 Jul	64,194	444,432	62	174	7,959	493,473	50,000
14 Jul	32,142	476,574	63	233	8,192	516,081	40,000
15 Jul	18,090	494,664	64	220	8,411	538,328	40,000
16 Jul	41,868	536,532	66	236	8,647	570,733	40,000
17 Jul	24,564	561,096	68	233	8,880	603,870	50,000
18 Jul	39,234	600,330	71	442	9,322	661,861	60,000
19 Jul	28,128	628,458					
20 Jul	19,044	647,502					
21 Jul	6,168	653,670					
22 Jul	7,674	661,344					
23 Jul	4,542	665,886					
24 Jul	2,178	668,064					
25 Jul	2,514	670,578					

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 1990–2011 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 July 1 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 catchability, etc.

Table 18.–Final daily and cumulative escapement estimates by species, Nushagak River sonar project, Bristol Bay, 2012.

	Sockeye		Chinook[a]		Chum		Coho		Pink		Total	
Date	Daily[b]	Cum	Daily[b]	Cum	Daily[b]	Cum	Daily[b]	Cum	Daily[b]	Cum	Daily	Cum
6/5	0	0	62	62	74		0	0	0	0	136	136
6/6	14	14	137	199	159	65	0	0	0	0	310	446
6/7	78	92	201	400	205	270	0	0	0	0	483	929
6/8	77	169	149	549	147	416	0	0	0	0	373	1,302
6/9	46	215	107	656	97	513	0	0	0	0	249	1,551
6/10	72	287	136	792	141	654	0	0	0	0	349	1,900
6/11	153	439	244	1,036	323	977	0	0	0	0	720	2,620
6/12	395	834	653	1,689	860	1,836	0	0	0	0	1,907	4,526
6/13	253	1,087	493	2,182	696	2,532	0	0	0	0	1,442	5,969
6/14	271	1,358	156	2,338	341	2,874	0	0	0	0	769	6,737
6/15	277	1,636	240	2,577	557	3,431	0	0	0	0	1,074	7,811
6/16	157	1,793	317	2,894	1,290	4,720	0	0	0	0	1,764	9,575
6/17	429	2,222	527	3,422	1,185	5,905	0	0	0	0	2,141	11,716
6/18	988	3,210	1,687	5,109	3,419	9,324	0	0	0	0	6,094	17,810
6/19	2,671	5,881	2,761	7,869	7,978	17,302	0	0	0	0	13,410	31,220
6/20	3,734	9,615	2,107	9,977	15,884	33,186	0	0	0	0	21,726	52,946
6/21	2,899	12,514	1,490	11,467	13,449	46,635	0	0	0	0	17,838	70,784
6/22	3,890	16,404	1,513	12,980	21,883	68,519	0	0	0	0	27,286	98,070
6/23	1,319	17,723	1,203	14,184	12,142	80,661	0	0	0	0	14,665	112,735
6/24	3,810	21,533	1,617	15,800	4,272	84,933	0	0	0	0	9,698	122,433
6/25	28,165	49,697	6,613	22,413	23,157	108,090	0	0	0	0	57,934	180,368
6/26	22,119	71,816	5,244	27,657	14,900	122,990	0	0	0	0	42,262	222,630
6/27	14,876	86,692	1,290	28,947	9,004	131,994	0	0	0	0	25,171	247,801
6/28	14,393	101,086	3,813	32,759	22,018	154,012	0	0	0	0	40,224	288,025
6/29	6,018	107,104	3,990	36,749	19,145	173,157	0	0	0	0	29,152	317,177
6/30	22,602	129,706	5,599	42,348	25,324	198,481	0	0	0	0	53,525	370,702
7/1	11,436	141,142	4,597	46,945	8,450	206,931	0	0	0	0	24,484	395,186
7/2	4,290	145,432	4,125	51,070	6,206	213,137	0	0	0	0	14,620	409,806
7/3	10,243	155,675	4,542	55,612	8,319	221,456	0	0	0	0	23,104	432,910
7/4	11,239	166,914	4,280	59,892	11,466	232,922	0	0	0	0	26,985	459,895
7/5	28,665	195,579	1,963	61,854	12,443	245,365	0	0	0	0	43,071	502,966
7/6	67,529	263,108	3,092	64,946	10,452	255,818	0	0	0	0	81,074	584,040
7/7	59,536	322,644	2,325	67,271	10,959	266,777	0	0	0	0	72,819	656,859
7/8	21,678	344,322	2,811	70,082	13,365	280,142	0	0	0	0	37,855	694,714
7/9	12,344	356,666	1,291	71,373	5,050	285,192	0	0	0	0	18,684	713,398
7/10	15,014	371,680	1,812	73,185	7,451	292,643	0	0	0	0	24,277	737,676
7/11	6,703	378,383	1,745	74,930	5,205	297,848	0	0	0	0	13,653	751,328
7/12	4,780	383,162	2,220	77,149	4,061	301,909	0	0	0	0	11,060	762,388

-continued-

Table 18.–Page 2 of 2.

	Sockeye		Chinook[a]		Chum		Coho		Pink		Total	
Date	Daily[b]	Cum.	Daily[b]	Cum.	Daily[b]	Cum.	Daily[b]	Cum.	Daily[b]	Cum.	Daily	Cum.
7/13	8,169	391,332	1,249	78,398	4,343	306,252	0	0	0	0	13,762	776,150
7/14	2,682	394,014	2,111	80,510	7,065	313,317	0	0	0	0	11,859	788,008
7/15	3,889	397,903	2,767	83,277	7,425	320,743	0	0	0	0	14,082	802,091
7/16	3,177	401,080	4,137	87,414	6,178	326,921	0	0	0	0	13,492	815,583
7/17	2,596	403,676	891	88,305	5,406	332,326	0	0	239	239	9,132	824,715
7/18	3,525	407,201	3,737	92,043	5,969	338,295	561	561	386	625	14,178	838,893
7/19	3,869	411,071	943	92,985	13,645	351,940	0	561	795	1,420	19,252	858,145
7/20	2,266	413,336	1,505	94,490	8,660	360,600	0	561	5,363	6,783	17,793	875,938
7/21	1,358	414,694	1,993	96,483	3,660	364,260	134	695	4,111	10,894	11,256	887,194
7/22	1,374	416,069	667	97,150	239	364,499	0	695	2,958	13,852	5,239	892,432
7/23	1,867	417,935	1,482	98,632	3,062		0	695	2,670	16,521	9,079	901,512
7/24	1,759	419,694	498	99,130	2,293		1,514	2,209	2,847	19,368	8,911	910,423
7/25	3,185	422,879	2,571	101,701	3,658		6,930	9,139	10,569	29,938	26,913	937,336
7/26	2,310	425,189	2,595	104,295	5,315		3,464	12,604	11,183	41,121	24,866	962,202
7/27	2,248	427,436	138	104,433	1,627		12,732	25,336	27,636	68,756	44,380	1,006,582
7/28	3,122	430,559	435	104,868	933		14,091	39,427	57,384	126,140	75,966	1,082,548
7/29	0	430,559	1,933	106,801	3,627		21,517	60,944	55,204	181,345	82,281	1,164,829
7/30	0	430,559	0	106,801	2,233		19,296	80,240	74,458	255,802	95,987	1,260,816
7/31	1,093	431,651	984	107,786	2,185		10,065	90,305	93,870	349,672	108,198	1,369,014
8/1	0	431,651	0	107,786	1,031		5,374	95,679	69,855	419,527	76,260	1,445,274
8/2	0	431,651	0	107,786	936		17,986	113,666	42,314	461,841	61,236	1,506,510
8/3	0	431,651	0	107,786	0		8,527	122,193	30,245	492,086	38,772	1,545,282
8/4	787	432,438	0	107,786	0		8,682	130,875	40,674	532,760	50,142	1,595,424
8/5	0	432,438	0	107,786	97		4,295	135,170	22,266	555,026	26,658	1,622,082
8/6	0	432,438	0	107,786	555		4,696	139,866	28,361	583,387	33,612	1,655,694
8/7	0	432,438	0	107,786	141		6,876	146,742	142,341	725,728	149,358	1,805,052
8/8	0	432,438	0	107,786	1,023		10,663	157,405	126,080	851,808	137,766	1,942,818
8/9	0	432,438	0	107,786	603		14,059	171,464	98,552	950,360	113,214	2,056,032
8/10	0	432,438	0	107,786	0		26,899	198,363	83,903	1,034,263	110,802	2,166,834
8/11	0	432,438	0	107,786	0		28,108	226,471	68,126	1,102,389	96,234	2,263,068
8/12	0	432,438	0	107,786	0		15,443	241,914	34,231	1,136,620	49,674	2,312,742
8/13	0	432,438	0	107,786	1,178		26,738	268,652	22,766	1,159,386	50,682	2,363,424
8/14	0	432,438	0	107,786	0		12,762	281,414	24,330	1,183,716	37,092	2,400,516
8/15	0	432,438	0	107,786	0		10,496	291,910	16,318	1,200,035	26,814	2,427,330
8/16	0	432,438	0	107,786	0		7,123	299,033	3,803	1,203,837	10,926	2,438,256
8/17	0	432,438	0	107,786	0		13,003	312,035	8,363	1,212,201	21,366	2,459,622
8/18	0	432,438	0	107,786	0		15,664	327,700	2,396	1,214,597	18,060	2,477,682
8/19	0	432,438	0	107,786	0		2,247	329,946	363	1,214,960	2,610	2,480,292

[a] Adjusted counts used for inseason management. Unadjusted counts (DIDSON sonar) reported in Buck et al. (2012).
[b] Values rounded to nearest fish.

Table 19.–Commercial salmon catch by date and species, in numbers of fish, Nushagak District, Bristol Bay, 2012.

	Hours fished (drift/set)		Deliveries							
Date	Nushagak	Igushik	Drift	Set	Sockeye	Chinook	Chum	Pink	Coho	Total
6/15	0/0	[a]	0	1	105	0	1	0	0	106
6/16	0/0	0/8	0	13	549	2	1	0	0	552
6/17	0/0	0/8	0	9	578	1	1	0	0	580
6/18	0/0	0/8	0	14	774	0	0	0	0	774
6/19	0/0	0/8	0	19	1,377	4	0	0	0	1,381
6/20	0/0	0/8	0	18	502	8	0	0	0	510
6/21	0/0	0/8	0	17	228	12	0	0	0	240
6/22	0/0	0/12	0	26	316	4	1	0	0	321
6/23	0/0	0/12	0	20	676	51	8	0	0	735
6/24	0/0	0/12	0	10	1,444	67	27	0	0	1,538
6/25	0/0	0/12	0	62	5,422	59	50	0	0	5,531
6/26	0/7	0/12	0	181	10,876	50	423	6	0	11,355
6/27	0/11	0/12	0	187	14,254	126	2,621	2	0	17,003
6/28	4/13	0/12	307	238	87,008	664	22,934	9	1	110,616
6/29	4/11.5	4/11.5	326	309	190,220	1,378	56,054	7	0	247,659
6/30	5/14	5/14	568	254	286,013	1,368	29,281	11	0	316,673
7/1	5/8.5	0/8.5	257	318	153,271	1,366	25,378	20	0	180,035
7/2	7/12	0/12	567	405	228,160	1,433	24,717	9	0	254,319
7/3	3/7	0/7	300	391	300,455	467	12,434	8	0	313,364
7/4	0/7	5/11	228	397	191,661	289	4,948	7	0	196,905
7/5	0/0	6/24	84	96	89,254	171	2,307	7	0	91,739
7/6	0/0	12/24	160	70	198,545	150	3,176	11	0	201,882
7/7	6/7.5	12/24	113	203	206,643	334	11,108	56	0	218,141
7/8	11/23	11/24	334	447	265,101	1,093	19,222	60	0	285,476
7/9	11/14	11/24 [b]	349	418	134,927	482	11,359	50	1	146,819
7/10	16/14	16/24	273	275	78,126	369	10,132	33	0	88,660
7/11	16/16.5	16/24	193	199	100,193	320	8,527	25	0	109,065
7/12	24/24	24/24	253	320	65,900	348	7,515	106	3	73,872
7/13	24/24	24/24	184	278	33,332	281	5,838	214	15	39,680
7/14	24/24	24/24	102	134	14,982	157	3,469	176	27	18,811
7/15	24/24	24/24	82	160	10,148	138	1,750	375	82	12,493
7/16	24/24	24/24	50	149	5,918	49	1,045	345	100	7,457
7/17	24/24	24/24	34	165	6,725	58	513	960	25	8,281
7/18	24/24	24/24	31	122	6,437	67	529	2,051	121	9,205
7/19	24/24	24/24	8	45	2,017	26	189	420	139	2,791
7/20	24/24	24/24	20	62	3,073	16	393	2,971	173	6,626
7/21	24/24	24/24	15	71	2,769	15	566	11,874	224	15,448
7/22	16.5/16.5	16.5/24	18	51	1,371	17	254	12,826	554	15,022
7/23	0/0	[a]	0	1	37	4	17	182	82	322
7/24	8/8	8/24	165	73	1,081	20	761	41,340	1,648	44,850

-continued-

Table 19.–Page 2 of 2.

	Hours fished (drift/set)		Deliveries							
Date	Nushagak	Igushik	Drift	Set	Sockeye	Chinook	Chum	Pink	Coho	Total
7/26	8/8	8/24	183	107	789	12	466	67,044	8,416	76,727
7/27	8/8	8/24	161	55	222	6	198	54,853	6,645	61,924
7/29	4/4	4/24	116	57	64	1	15	52,550	6,110	58,740
7/30	10/10	10/24	148	93	67	7	41	105,782	7,186	113,083
7/31	10/10	10/24	153	89	68	4	36	117,062	10,302	127,472
8/1	12/12	12/24	146	83	47	1	14	104,378	15,167	119,607
8/2	12/12	12/24	89	8	9	2	0	40,375	5,637	46,023
8/3	12/12	12/24	105	42	13	1	16	56,695	5,321	62,046
8/4	12/12	12/24	74	64	27	0	8	55,428	1,790	57,253
8/5	12/12	12/24	55	56	19	2	7	50,428	4,317	54,773
8/6	12/12	12/24	55	48	12	0	7	54,213	7,770	62,002
8/7	12/12	12/24	33	28	11	0	3	19,476	7,168	26,658
8/8	12/12	12/24	16	25	7	1	1	11,086	1,727	12,822
8/9	12/12 [b]	12/24 [b]	13	22	7	0	0	13,935	1,847	15,789
Total	500.5/578.5	510.5/1,020	6,368	7,005	2,696,149	11,501	268,361	877,466	92,598	4,018,595

	Wood River Special Harvest Area, Bristol Bay									
	Hours fished		Deliveries							
	Drift	Set	Drift	Set	Sockeye	Chinook	Chum	Pink	Coho	Total
7/5	6.0	5.5	170	133	62,885	128	1,618	7	0	64,638
7/6	12.0	11.0	324	225	161,199	70	1,334	11	0	162,614
7/7	10.0	5.5	139	99	92,540	49	2,358	2	0	94,949
Total	28	22	633	457	316,624	247	5,310	20	0	322,201

[a] Less than 4 permits holders involved in fishery; records are confidential.

[b] Fishing extended until further notice.

Table 20.–Daily sockeye salmon escapement tower counts by river system, westside Bristol Bay, 2012.

	Wood River		Igushik River		Togiak River	
Date	Daily	Cum	Daily	Cum	Daily	Cum
6/19	6,132	6,132				
6/20	4,308	10,440				
6/21	1,086	11,526				
6/22	1,710	13,236				
6/23	768	14,004				
6/24	8,202	22,206	84	84		
6/25	72,120	94,326	48	132		
6/26	29,670	123,996	102	234		
6/27	21,936	145,932	3,378	3,612		
6/28	13,206	159,138	8,526	12,138		
6/29	16,488	175,626	7,680	19,818		
6/30	29,502	205,128	5,412	25,230		
7/1	19,872	225,000	3,804	29,034		
7/2	10,722	235,722	3,594	32,628		
7/3	22,590	258,312	2,718	35,346		
7/4	34,908	293,220	6,870	42,216	4,062	4,062
7/5	106,878	400,098	7,434	49,650	3,672	7,734
7/6	30,246	430,344	10,974	60,624	4,434	12,168
7/7	44,712	475,056	10,980	71,604	2,058	14,226
7/8	64,998	540,054	9,144	80,748	1,422	15,648
7/9	76,620	616,674	12,444	93,192	3,210	18,858
7/10	42,810	659,484	8,514	101,706	3,582	22,440
7/11	27,765	687,249	12,138	113,844	2,646	25,086
7/12	23,646	710,895	18,858	132,702	5,910	30,996
7/13	20,646	731,541	16,920	149,622	1,860	32,856
7/14	11,772	743,313	13,728	163,350	3,198	36,054
7/15	6,888	750,201	11,616	174,966	4,140	40,194
7/16	7,248	757,449	7,842	182,808	4,896	45,090
7/17	3,174	760,623	4,746	187,554	8,808	53,898
7/18	3,588	764,211	3,636	191,190	6,114	60,012
7/19			1,146	192,336	16,710	76,722
7/20			768	193,104	12,552	89,274
7/21			222	193,326	10,800	100,074
7/22					7,764	107,838
7/23					10,644	118,482
7/24					14,544	133,026
7/25					23,448	156,474
7/26					21,660	178,134
7/27					10,722	188,856
7/28					4,332	193,188
7/29					3,186	196,374
7/30					2,244	198,618
7/31					1,200	199,818
8/1					1,386	201,204
8/2					1,944	203,148

Note: Blank cells represent days when escapement projects were not in operation.

Table 21.–Commercial salmon catch by date and species, in numbers of fish, Togiak River Section, Bristol Bay, 2012.

Date [a]	Deliveries		Sockeye	Chinook	Chum	Pink	Coho	Total
	Drift	Set						
6/18 [b]								
6/19	1	10	290	11	74	0	0	375
6/20	3	7	516	18	269	0	0	803
6/25	18	63	2,932	218	1,111	0	0	4,261
6/26	26	71	3,416	176	1,240	2	0	4,834
6/27	20	64	4,422	184	1,393	3	0	6,002
6/29	1		1	0	0	0	0	1
6/30	1		1	0	0	0	0	1
7/2	45	70	7,694	250	4,705	2	0	12,651
7/3	52	102	10,910	379	4,983	2	0	16,274
7/4	57	93	9,458	268	3,775	0	15	13,516
7/5	79	113	20,386	256	6,809	2	0	27,453
7/6	82	143	30,513	317	10,250	15	0	41,095
7/7	80	136	30,289	342	12,786	3	0	43,420
7/9	60	103	19,662	227	8,770	9	0	28,668
7/10	87	120	26,150	144	8,273	15	0	34,582
7/11	54	107	24,730	132	3,288	9	0	28,159
7/12	99	155	35,721	216	10,849	25	0	46,811
7/13	64	122	33,170	133	4,563	13	0	37,879
7/14	41	59	13,405	57	2,439	6	0	15,907
7/16	74	101	40,650	89	9,985	21	0	50,745
7/17	114	137	46,832	149	11,992	15	0	58,988
7/18	101	116	28,507	132	10,874	26	0	39,539
7/19	86	127	28,716	83	11,533	38	0	40,370
7/20	27	58	9,701	35	3,168	8	0	12,912
7/23	78	124	24,902	55	7,772	394	1	33,124
7/24	105	121	18,702	52	8,950	657	0	28,361
7/25	72	132	16,171	36	9,620	627	0	26,454
7/26	73	112	13,839	37	4,845	1,051	3	19,775
7/27	56	149	14,103	35	3,598	1,446	2	19,184
7/28	35	81	12,962	4	2,105	1,718	1	16,790
7/30	48	57	14,069	17	1,724	3,651	1	19,462
7/31	71	71	11,128	16	2,829	4,478	31	18,482
8/1	44	58	7,288	10	1,736	2,540	12	11,586
8/2	30	43	5,242	11	783	2,074	11	8,121
8/3	49	53	6,505	11	948	2,523	32	10,019

-continued-

Table 21.–Page 2 of 2.

Date [a]	Deliveries		Sockeye	Chinook	Chum	Pink	Coho	Total
	Drift	Set						
8/4	27	43	4,560	10	500	2,066	52	7,188
8/6	29	41	2,717	5	332	977	145	4,176
8/7	28	50	2,482	5	342	892	133	3,854
8/8	12	42	1,972	4	225	844	142	3,187
8/9	8	43	1,723	4	174	614	245	2,760
8/13	3	10	353	1	24	96	72	546
8/14	18	17	827	1	97	237	696	1,858
8/15	4	17	311	1	36	86	210	644
8/16	12	14	479	2	64	127	662	1,334
8/17	6	5	163	1	22	41	473	700
8/20	6	17	156	2	19	13	599	789
8/21	15	26	260	3	12	28	1,758	2,061
8/22	18	32	247	5	16	48	2,092	2,408
8/23	9	31	113	1	15	28	1,202	1,359
8/24	10	22	78	0	6	16	1,301	1,401
8/25	4	7	87	0	7	11	518	623
8/27	11	13	36	0	3	4	1,089	1,132
8/28	10	20	88	1	3	15	1,646	1,753
8/29	11	16	76	3	3	7	2,002	2,091
8/30	5	10	29	2	2	2	866	901
Total	2,180	3,560	589,836	4,153	179,989	27,525	16,012	817,515

[a] See Table 15 for inseason adjustments to the regular weekly fishing schedule.

[b] Less than 4 permit holders involved in fishery; records are confidential.

Table 22.–Commercial salmon catch by date and species, in numbers of fish, Kulukak Section, Bristol Bay, 2012.

	Deliveries							
Date[a]	Drift	Set	Sockeye	Chinook	Chum	Pink	Coho	Total
6/19 [b]								
6/20 [b]								
6/25	11	7	1,390	39	1,218	2	0	2,649
6/26	14	12	2,140	46	2,048	0	0	4,234
6/27	20	7	2,064	37	2,088	0	0	4,189
7/2	12	28	2,733	36	3,353	6	0	6,128
7/3	18	27	6,490	97	5,062	0	0	11,649
7/4	9	28	5,955	46	3,049	0	0	9,050
7/9	9	25	2,318	42	1,890	22	0	4,272
7/10	11	18	3,023	30	2,036	20	0	5,109
7/16	3	20	1,765	19	1,456	7	0	3,247
7/17	1	11	1,092	16	929	6	0	2,043
7/23	2	3	1,627	12	251	58	0	1,948
7/24	2	3	1,231	9	146	50	0	1,436
7/25	2	3	1,920	5	354	134	0	2,413
7/30	5	2	207	6	197	178	0	588
7/31	0	2	103	1	10	0	0	114
Total	122	199	34,631	460	24,879	484	0	60,454

[a] Kulukak Section is open 60 hours per week by regulation.

[b] Less than 4 permit holders involved in fishery; records are confidential.

Table 23.–Commercial salmon catch by date and species, in numbers of fish, Togiak District, Bristol Bay, 2012.

Date [a]	Sockeye	Chinook	Chum	Pink	Coho	Total
6/18 [b]						
6/19 [b]						
6/20	836	22	512	0	0	1,370
6/25	4,322	257	2,329	2	0	6,910
6/26	5,556	222	3,288	2	0	9,068
6/27	6,486	221	3,481	3	0	10,191
6/29	76	1	523	0	0	600
6/30	88	2	186	0	0	276
7/2	10,427	286	8,058	8	0	18,779
7/3	17,400	476	10,045	2	0	27,923
7/4	15,413	314	6,824	0	15	22,566
7/5	20,386	256	6,809	2	0	27,453
7/6	30,513	317	10,250	15	0	41,095
7/7	30,289	342	12,786	3	0	43,420
7/9	21,980	269	10,660	31	0	32,940
7/10	29,173	174	10,309	35	0	39,691
7/11	24,730	132	3,288	9	0	28,159
7/12	35,721	216	10,849	25	0	46,811
7/13	33,170	133	4,563	13	0	37,879
7/14	13,405	57	2,439	6	0	15,907
7/16	42,415	108	11,441	28	0	53,992
7/17	47,924	165	12,921	21	0	61,031
7/18	28,507	132	10,874	26	0	39,539
7/19	28,716	83	11,533	38	0	40,370
7/20	10,647	36	3,620	26	0	14,329
7/21	471	1	477	3	0	952
7/23	26,529	67	8,023	452	1	35,072
7/24	19,933	61	9,096	707	0	29,797
7/25	18,091	41	9,974	761	0	28,867
7/26	13,839	37	4,845	1,051	3	19,775
7/27	14,453	35	3,628	1,471	2	19,589
7/28	12,962	4	2,105	1,718	1	16,790
7/30	14,276	23	1,921	3,829	1	20,050
7/31	11,231	17	2,839	4,478	31	18,596
8/1	7,288	10	1,736	2,540	12	11,586
8/2	5,242	11	783	2,074	11	8,121
8/3	6,505	11	948	2,523	32	10,019

-continued-

Table 23.–Page 2 of 2.

Date [a]	Sockeye	Chinook	Chum	Pink	Coho	Total
8/4 [b]						
8/6	2,717	5	332	977	145	4,176
8/7	2,482	5	342	892	133	3,854
8/8	1,972	4	225	844	142	3,187
8/9	1,723	4	174	614	245	2,760
8/13	353	1	24	96	72	546
8/14	827	1	97	237	696	1,858
8/15	311	1	36	86	210	644
8/16	479	2	64	127	662	1,334
8/17	163	1	22	41	473	700
8/20	156	2	19	13	599	789
8/21	260	3	12	28	1,758	2,061
8/22	247	5	16	48	2,092	2,408
8/23	113	1	15	28	1,202	1,359
8/24	78	0	6	16	1,301	1,401
8/25	87	0	7	11	518	623
8/27	36	0	3	4	1,089	1,132
8/28	88	1	3	15	1,646	1,753
8/29	76	3	3	7	2,002	2,091
8/30	29	2	2	2	866	901
Total	626,396	4,618	206,536	28,055	16,012	881,617

[a] See Table 15 for inseason adjustments to regular weekly fishing schedules.

[b] Less than 4 permit holders involved in fishery; records are confidential.

Table 24.–Commercial salmon catch by date and species, in numbers of fish, Matogak Section, Bristol Bay, 2012.

Date [a]	Sockeye	Chinook	Chum	Pink	Coho	Total
7/20 [b]						
7/21 [b]						
7/27 [b]						
Total	1,767	2	959	46	0	2,369

[a] Matogak Section is open 5 days per week by regulation.

[b] Less than 4 permit holders involved in fishery; records are confidential.

Table 25.–Commercial salmon catch by date and species, in numbers of fish, Osviak Section, Bristol Bay, 2012.

Date [a]	Sockeye	Chinook	Chum	Pink	Coho	Total
7/29 [b]						
7/30 [b]						
Total	162	3	709	0	0	599

[a] Osviak Section is open 5 days per week by regulation.

[b] Less than 4 permit holders involved in fishery; records are confidential.

Table 26.–Subsistence salmon harvest by species, in numbers of fish, by district and location fished, Bristol Bay, 2011.

Area and River System	Permits Issued [b]	Estimated Number of Salmon Harvested [a]					
		Sockeye	Chinook	Chum	Pink	Coho	Total
Naknek-Kvichak District							
Naknek River	272	21,938	525	21,938	55	666	23,392
Kvichak River/Iliamna Lake:	212	45,226	25	45,226	1	24	45,283
Alagnak River	1	49	4	49	0	0	54
Igiugig	11	835	8	835	1	13	857
Iliamna Lake	39	9,246	0	9,246	0	0	9,246
Kokhanok	22	6,300	6	6,300	0	0	6,306
Kvichak River	19	4,123	0	4,123	0	0	4,123
Lake Clark: General	53	5,593	0	5,593	0	0	5,593
Levelock	7	606	7	606	0	11	630
Newhalen River	32	11,572	0	11,572	0	0	11,572
Pedro Bay	17	2,973	0	2,973	0	0	2,973
Pile Bay	1	179	0	179	0	0	179
Six Mile Lake	18	3,751	0	3,751	0	0	3,751
Total	484	67,164	550	67,164	56	690	68,675
Egegik District	37	1,772	91	1,772	2	377	2,264
Ugashik District	15	531	15	531	2	136	687
Nushagak District							
Wood River	154	7,576	2,216	7,576	3	1,227	11,438
Igushik/Snake River	17	1,663	101	1,663	0	127	1,904
Nushagak Bay Commercial	36	1,539	365	1,539	35	533	2,609
Nushagak Bay Noncommercial	234	9,758	4,163	9,758	166	2,812	18,052
Nushagak River	124	7,428	5,595	7,428	25	1,035	15,416
Site Unknown	1	42	20	42	1	12	79
Total	525	28,006	12,461	28,006	230	5,746	49,497
Togiak District	68	3,462	966	3,462	42	545	5,512
Total Bristol Bay	1,122	101,017	14,106	3,794	333	7,493	126,744

Note: 2012 numbers were not available at the time of publication.

[a] Harvests are extrapolated for all permits issued, based on those returned and on the area fished as recorded on the permit. Due to rounding, the sum of columns and rows may not equal the estimated total. Of 1,122 permits issued for the management area, 1,039 were returned (92.6%).

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

Table 27.–Herring total commercial harvest, escapement, and total run (in tons) by year class, Togiak District, 2012.

Total Harvest[a]			Escapement		Total Run	
Age	Biomass	%	Biomass	%	Biomass	%
1	0	0.0	0	0.0	0	0.0
2	0	0.0	0	0.0	0	0.0
3	1	0.0	-1	0.0	0	0.0
4	93	0.5	667	0.4	760	0.5
5	1,049	6.2	10,028	6.7	11,077	6.6
6	2,576	15.1	25,711	17.1	28,287	16.9
7	5,419	31.8	54,595	36.2	60,014	35.8
8	3,166	18.6	26,407	17.5	29,573	17.6
9	1,955	11.5	14,165	9.4	16,120	9.6
10	1,248	7.3	8,876	5.9	10,123	6.0
11	740	4.3	4,530	3.0	5,270	3.1
12	410	2.4	2,405	1.6	2,815	1.7
13	244	1.4	1,974	1.3	2,218	1.3
14	89	0.5	971	0.6	1,059	0.6
15	25	0.1	263	0.2	288	0.2
16	7	0.0	127	0.1	134	0.1
17	0	0.0	0	0.0	0	0.0
18	0	0.0	0	0.0	0	0.0
19	0	0.0	0	0.0	0	0.0
Total	17,021	100	150,717	100	167,738	100

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

Table 28.–Commercial herring sac roe and spawn-on-kelp buyers in Togiak District, 2012.

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

[a] Operators that registered in the Togiak district.

Table 29.–Daily observed estimates of spawn (in miles) and herring (in tons) by index area, in the Togiak District, 2012.

Date	Start Time	Survey Rating [b]	Miles of Spawn	Estimated Biomass by Index Area [a] NUS	KUK	MET	NVK	UGL	TOG	TNG	MTG	OSK	PYR	CPN	HAG	WAL	Daily Total
5/9	1000	3.0															0
5/14	1000	1.5	2.1	1,194	3,778	5,353	9,901	3,030	5,815	4,075	2,986	2,754			1,782	1,505	42,173
5/15	1630	2.5	16.0	6,180	24,463	9,820	7,943	12,005	21,538	1,017	7,022						89,988
5/20	1000	3.0	10.7	3,444	16,072	588	3,246	5,846	55,640	5,733	1,585	64			106		92,324
5/22	1000	1.5	1.5	15,858	11,962	36	259	63	85,542	5,117	5,689		3				124,529
5/31	1000	1.5	0.2	65	7,305	1,028	1,817	2,080	17,845	1,454							31,594
Total linear miles of spawn			30.5										Peak biomass estimate				124,529

Note: Blank cells represent days when no biomass was 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, WAL - Walrus Islands.

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

Table 30.–Commercial herring harvest (in tons) by fishing section, gear type, and date in the Togiak District, Bristol Bay, 2012.

			Kulukak		Nunavachak		Togiak		Hagemeister		Pyrite Point		Cape Newenham		Total	
Date	Duration	Period	Tons	Roe %	Tons	Roe %	Tons	Roe %	Tons	Roe %	Tons	Roe %	Tons	Roe %	Tons	Roe %
Purse Seine																
5/14	54:00	1			2,120.0	10.3			229.0	9.7					2,349.0	10.2
5/17	48:00	2			1,046.4	9.8			929.2	9.6					1,975.6	9.7
5/19	24:00	3			258.4	7.8			1,887.6	9.7					2,146.0	9.5
5/20	24:00	4			897.2	9.0			996.0	9.7					1,893.2	9.4
5/21	24:00	5			362.8	9.5			899.5	8.5	33.8	7.8			1,296.1	8.8
5/23	12:00	6					199.4	8.6	679.1	8.9	388.7	10.3			1,267.2	9.3
5/24	24:00	7							606.1	8.4					606.1	8.4
5/25	24:00	8							797.4	9.2					797.4	9.2
5/26	24:00	9							663.1	8.2					663.1	8.2
5/27	24:00	10														
5/28	46:00	11														
Subtotal	328:00				4,684.8	9.7	199.4	8.6	7,687.0	9.2	422.5	10.1			12,993.7	9.4
Gillnet																
5/14	102:00	1	17.7	14.4	519.6	12.0									537.3	12.1
5/19	24:00	2			205.9	11.4									205.9	11.4
5/20	24:00	3	529.9	11.9	118.2	10.3									648.1	11.6
5/21	24:00	4	400.9	11.6	162.8	12.0									563.7	11.7
5/22	24:00	5	364.8	11.2	62.6	12.2									427.4	11.3
5/23	24:00	6	111.1	11.1											111.1	11.1
5/24	24:00	7	26.0	10.7											26.0	10.7
5/25	24:00	8	15.8	8.9											15.8	8.9
5/26	24:00	9	49.0	10.9											49.0	10.9
5/27	24:00	10	87.7	13.4	108.5	11.0									196.2	12.1
5/28	24:00	11	98.6	13.0	61.9	12.6									160.5	12.8
5/29	24:00	12	147.3	13.7											147.3	13.7
5/30	24:00	13	374.9	13.6											374.9	13.6
5/31	24:00	14	217.1	12.7											217.1	12.7
6/1	120:00	15	346.9	12.6											346.9	12.6
Subtotal	534:00		2,787.7	12.3	1,239.5	11.7									4,027.2	12.1

-continued-

Table 30.–Page 2 of 2.

Date	Duration	Period	Kulukak Tons	Kulukak Roe %	Nunavachak Tons	Nunavachak Roe %	Togiak Tons	Togiak Roe %	Hagemeister Tons	Hagemeister Roe %	Pyrite Point Tons	Pyrite Point Roe %	Cape Newenham Tons	Cape Newenham Roe %	Total Tons	Total Roe %
Combined																
5/14			17.7	14.4	2,639.6	10.6			229.0	9.7					2,886.3	10.6
5/17					1,046.4	9.8			929.2	9.6					1,975.6	9.7
5/19					464.3	9.4			1,887.6	9.7					2,351.9	9.6
5/20			529.9	11.9	1,015.4	9.2			996.0	9.7					2,541.3	9.9
5/21			400.9	11.6	525.6	10.3			899.5	8.5	33.8	7.8			1,859.8	9.7
5/22			364.8	11.2	62.6	12.2									427.4	11.3
5/23			111.1	11.1			199.4	8.6	679.1	8.9	388.7	10.3			1,378.3	9.4
5/24			26.0	10.7					606.1	8.4					632.1	8.5
5/25			15.8	8.9					797.4	9.2					813.2	9.2
5/26			49.0	10.9					663.1	8.2					712.1	8.4
5/27			87.7	13.4	108.5	11.0									196.2	12.1
5/28			98.6	13.0	61.9	12.6									160.5	12.8
5/29			147.3	13.7											147.3	13.7
5/30			374.9	13.6											374.9	13.6
5/31			217.1	12.7											217.1	12.7
6/1			346.9	12.6											346.9	12.6
Total			2,787.7	12.3	5,924.3	10.1	199.4	8.6	7,687.0	9.2	422.5	10.1			17,020.9	10.0

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

Table 31.–Emergency order commercial fishing periods for herring sac roe and spawn-on-kelp in the Togiak District, 2012.

EO #	Area [a]		Date and Time				
Herring Sac Roe Gillnet							
DLG-02	Egg Island Section		5/14	6:00 p.m.	to	end of season	
DLG-04	Egg Island Section; Right Hand Point to Mud Bay	area change	5/17	2:00 p.m.			
DLG-06	Egg Island Section; Right Hand Point to Nunavachak Reef	area change	5/17	2:00 p.m.			
DLG-08	Egg Island Section	area change	5/20	3:00 p.m.			
DLG-15	Egg Island Section; Right Hand Point to Anchor Pt.	area change	5/27	1:00 p.m.			
DLG-16	Egg Island Section; Right Hand Point to Anchor Pt.	extension			to	6/5	10:00 p.m.
Herring Sac Roe Purse Seine							
DLG-01	Right Hand Pt. to Anchor Pt., Togiak Reef to Cape Newenham		5/14	6:00 p.m.	to	5/17	10:00 p.m.
DLG-03	Mud Bay to Anchor Pt., Togiak Reef to Cape Newenham	area change	5/17	1:00 p.m.			
DLG-03	Mud Bay to Anchor Pt., Togiak Reef to Cape Newenham	extension	5/17	10:00 p.m.	to	5/18	10:00 p.m.
DLG-05	Nunavachak Reef to Anchor Pt.; Togiak Reef to Cape Newenham	area change	5/17	1:00 p.m.			
DLG-07	Nunavachak Reef to Anchor Pt.; Togiak Bay to Cape Newenham	area change; extension	5/18	1:00 p.m.	to	5/21	10:00 p.m.
DLG-09	Right Hand Pt. to Anchor Pt.; Togiak Bay to Cape Newenham	area change	5/20	4:00 p.m.			
DLG-10	Right Hand Pt. to Anchor Pt.; Togiak Bay to Cape Newenham	area change [b]	5/23	12:00 p.m.	to	5/24	10:00 p.m.
DLG-11	Right Hand Pt. to Anchor Pt.; Togiak Bay to Cape Newenham	extension	5/24	10:00 p.m.	to	5/25	10:00 p.m.
DLG-12	Right Hand Pt. to Anchor Pt.; Togiak Bay to Cape Newenham	extension	5/25	10:00 p.m.	to	5/26	10:00 p.m.
DLG-13	Right Hand Pt. to Anchor Pt.; Togiak Bay to Cape Newenham	extension	5/26	10:00 p.m.	to	5/27	10:00 p.m.
DLG-14	Right Hand Pt. to Anchor Pt.; Togiak Bay to Cape Newenham	extension	5/27	10:00 p.m.	to	5/28	10:00 p.m.
Herring Spawn on Kelp [c]							

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

[b] Specific area within Togiak Bay was changed. See Emergency Order for area details.

[c] There was no market for spawn on kelp; a fishery did not occur.

APPENDIX A. SALMON

Appendix A1.–Escapement goal ranges and actual counts of sockeye salmon by river system, in thousands of fish, Bristol Bay, 1992–2012.

	Kvichak River			Naknek River [a]		
	Range			Range		
Year	Lower	Upper	Actual	Lower	Upper	Actual
1992	4,000	8,000	4,726	800	1,400	1,607
1993	4,000	8,000	4,025	800	1,400	1,536
1994	6,000	10,000	8,338	800	1,400	991
1995	6,000	10,000	10,039	800	1,400	1,111
1996	4,000	6,000	1,451	800	1,400	1,078
1997	4,000	6,000	1,504	800	1,400	1,026
1998	2,000	10,000	2,296	800	1,400	1,202
1999	6,000	10,000	6,197	800	1,400	1,625
2000	6,000	10,000	1,828	800	1,400	1,375
2001	2,000	10,000	1,095	800	2,000	1,830
2002	2,000	10,000	704	800	2,000	1,264
2003	2,000	10,000	1,687	800	2,000	1,831
2004	2,000	10,000	5,500	800	2,000	1,939
2005	2,000	10,000	2,320	800	2,000	2,745
2006	2,000	10,000	3,068	800	2,000	1,953
2007	2,000	10,000	2,810	800	2,000	2,945
2008	2,000	10,000	2,758	800	1,400	2,473
2009	2,000	10,000	2,266	800	1,400	1,170
2010	2,000	10,000	4,207	800	1,400	1,464
2011	2,000	10,000	2,264	800	1,400	1,177
20-Year Avg	3,200	9,400	3,454	800	1,610	1,617
1992-01 Avg	4,400	8,800	4,150	800	1,460	1,338
2002-11 Avg	2,000	10,000	2,758	800	1,760	1,896
2012	2,000	10,000	4,164	800	1,400	900

	Egegik River			Ugashik River		
	Range			Range		
Year	Lower	Upper	Actual	Lower	Upper	Actual
1992	800	1,200	1,945	500	900	2,174
1993	800	1,200	1,517	500	900	1,390
1994	800	1,200	1,897	500	900	1,081
1995	800	1,400	1,282	500	1,200	1,304
1996	800	1,400	1,076	500	1,200	668
1997	800	1,400	1,104	500	1,200	618
1998	800	1,400	1,111	500	1,200	891
1999	800	1,400	1,728	500	1,200	1,652
2000	800	1,400	1,032	500	1,200	620
2001	800	1,400	969	500	1,200	834
2002	800	1,400	1,036	500	1,200	892
2003	800	1,400	1,152	500	1,200	759
2004	800	1,400	1,290	500	1,200	776
2005	800	1,400	1,622	500	1,200	779
2006	800	1,400	1,465	500	1,200	978
2007	800	1,400	1,433	500	1,200	2,599
2008	800	1,400	1,260	500	1,200	569
2009	800	1,400	1,146	500	1,200	1,346
2010	800	1,400	927	500	1,200	805
2011	800	1,400	961	500	1,200	1,030
20-Year Avg	800	1,370	1,298	500	1,155	1,088
1992-01 Avg	800	1,340	1,366	500	1,110	1,123
2002-11 Avg	800	1,400	1,229	500	1,200	1,053
2012	800	1,400	1,234	500	1,200	671

-continued-

Appendix A1.–Page 2 of 2.

	Wood River			Igushik River		
	Range			Range		
Year	Lower	Upper	Actual	Lower	Upper	Actual
1992	700	1,200	1,286	150	250	305
1993	700	1,200	1,176	150	250	406
1994	700	1,200	1,472	150	250	446
1995	700	1,200	1,475	150	250	473
1996	700	1,200	1,650	150	250	401
1997	700	1,200	1,512	150	250	128
1998	700	1,200	1,756	150	250	216
1999	700	1,200	1,512	150	250	446
2000	700	1,200	1,300	150	250	413
2001	700	1,500	1,459	150	300	410
2002	700	1,500	1,284	150	300	123
2003	700	1,500	1,460	150	300	194
2004	700	1,500	1,543	150	300	110
2005	700	1,500	1,497	150	300	366
2006	700	1,500	4,008	150	300	305
2007	700	1,500	1,528	150	300	415
2008	700	1,500	1,725	150	300	1,055
2009	700	1,500	1,319	150	300	514
2010	700	1,500	1,804	150	300	518
2011	700	1,500	1,098	150	300	421
20-Year Avg	700	1,365	1,593	150	278	383
1992-01 Avg	700	1,230	1,460	150	255	364
2002-11 Avg	700	1,500	1,727	150	300	402
2012	700	1,500	764	150	300	193

	Nushagak River			Togiak River		
	Range			Range		
Year	Lower [b]	Upper	Actual [c]	Lower	Upper	Actual
1992	340	760	769	140	250	199
1993	340	760	791	140	250	177
1994	340	760	563	140	250	155
1995	340	760	311	140	250	186
1996	340	760	557	140	250	157
1997	340	760	413	100	200	132
1998	340	760	508	100	200	154
1999	235	760	345	100	200	156
2000	235	760	446	100	200	312
2001	340	760	897	100	200	297
2002	235	760	349	100	200	162
2003	340	760	642	100	200	232
2004	340	760	544	100	200	129
2005	340	760	1,107	100	200	149
2006	340	760	541	100	200	312
2007	340	760	518	120	270	270
2008	340	760	493	120	270	206
2009	340	760	484	120	270	314
2010	340	760	469	120	270	188
2011	340	760	428	120	270	191
20-Year Avg	324	760	559	115	230	204
1992-01 Avg	319	760	560	120	225	193
2002-11 Avg	330	760	558	110	235	215
2012	340	760	432	120	270	203

[a] An “optimal escapement goal” of up to 2,000,000 sockeye salmon was set by the Alaska Board of Fish (BOF) in 2001 when fishing in the Naknek River special harvest area.

[b] An "optimal escapement goal" of 235,000 sockeye salmon was set by the BOF in 1999.

[c] Nushagak River sonar (at Portage Creek) escapement estimates prior to 2006 were adjusted after the 2012 season to account for a transition in sonar technology that occurred in 2006 (Buck et al. 2012).

Appendix A2.–Salmon entry permit registration by gear and residency, Bristol Bay, 1992–2012.

	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
1992	997	886	1,883	1,879	100%	86	774	251	1,025	968	94%	8	2,851
1993	982	904	1,886	1,875	99%	81	763	259	1,022	965	94%	8	2,851
1994	970	917	1,887	1,865	99%	77	760	259	1,019	939	92%	7	2,826
1995	967	921	1,888	1,882	100%	75	762	257	1,019	967	95%	8	2,855
1996	966	925	1,891	1,884	100%	70	760	257	1,017	941	93%	6	2,832
1997	959	940	1,899	1,875	99%	67	757	262	1,019	921	90%	7	2,820
1998	954	945	1,899	1,858	98%	55	756	259	1,015	901	89%	6	2,800
1999	937	961	1,898	1,847	97%	52	748	266	1,014	925	91%	6	2,823
2000	945	945	1,890	1,823	96%	38	735	277	1,012	921	91%	6	2,811
2001	958	925	1,883	1,566	83%	24	729	281	1,010	834	83%	2	2,717
2002	945	933	1,878	1,183	63%	16	717	289	1,006	680	68%	2	2,558
2003	923	944	1,867	1,389	74%	7	713	288	1,001	714	71%	1	2,581
2004	912	948	1,860	1,426	77%	3	703	286	989	797	81%	1	2,849
2005	895	967	1,862	1,526	82%	3	688	300	988	829	84%	1	2,850
2006	893	966	1,859	1,567	84%	1	683	302	985	844	86%	0	2,844
2007	881	981	1,862	1,621	87%	1	672	311	983	836	85%	0	2,845
2008	887	976	1,863	1,636	88%	0	678	302	980	850	87%	0	2,843
2009	864	999	1,863	1,642	88%	0	674	307	981	855	87%	0	2,844
2010	866	997	1,863	1,731	93%	0	672	311	983	861	88%	0	2,846
2011	1005	857	1,862	1,747	94%	0	660	321	981	878	90%	0	2,846
20-Year Avg	935	942	1,877	1,691	90%	33	720	282	1,002	871	87%	3	2,805
1992-01 Avg	964	927	1,890	1,835	97%	63	754	263	1,017	928	91%	6	2,819
2002-11 Avg	907	957	1,864	1,547	83%	3	686	302	988	814	83%	1	2,791
2012	849	1013	1,862	1,740	93%	0	654	325	979	883	90%	0	2,841

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, 1992–2012.

Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
1992	9,395,948	15,646,575	3,320,966	2,789,741	726,446	31,879,676
1993	8,907,872	21,600,603	4,176,952	5,236,932	539,933	40,462,292
1994	16,327,858	10,750,213	4,352,797	3,393,139	400,039	35,224,046
1995	20,279,581	14,426,007	4,509,418	4,445,900	605,328	44,266,234
1996	8,215,028	10,809,115	4,411,055	5,693,563	462,897	29,591,658
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	7,029,397	1,538,790	6,367,208	794,996	20,457,452
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	2,839,424	233,743	10,675,713
2003	3,348,504	2,291,502	1,748,934	6,665,965	706,008	14,760,913
2004	4,715,070	10,209,227	3,139,229	6,104,048	437,234	26,261,802[a]
2005	6,728,469	8,015,950	2,216,635	7,096,031	465,094	24,522,179
2006	7,151,741	7,408,983	2,429,637	10,876,552	626,442	28,493,355
2007	9,022,511	6,495,908	5,026,615	8,404,111	816,581	29,765,726
2008	10,381,844	7,403,885	2,334,022	6,903,157	651,315	27,674,223
2009	8,514,944	11,527,462	2,555,263	7,730,168	559,442	30,887,279
2010	10,858,209	5,070,816	4,031,832	8,424,030	667,850	29,052,737
2011	9,016,321	4,810,362	2,643,495	4,886,552	744,626	22,101,356
20-Year Avg	7,846,408	8,470,668	2,743,918	5,713,208	548,324	25,360,300
1992-01 Avg	8,577,161	10,156,889	2,717,946	4,433,412	505,814	26,391,221
2002-11 Avg	7,115,655	6,784,447	2,769,890	6,993,004	590,834	24,214,831
2012	9,992,068	4,896,532	2,367,544	2,696,149	625,919	20,578,212

Appendix A4.–Chinook salmon commercial catch by district, in numbers of fish, Bristol Bay, 1992–2012.

Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
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
2005	1,377	485	1,815	62,308	10,605	76,590
2006	2,333	915	2,608	84,881	16,225	106,962
2007	1,484	514	1,465	51,473	7,769	62,705
2008	1,307	383	1,169	18,670	3,087	24,616
2009	974	271	920	24,287	1,397	27,849
2010	369	56	314	25,580	5,082	31,401
2011	2,693	2731	226	29,811	6,837	42,298
20-Year Avg	2,536	906	1,307	53,667	8,541	67,188
1992-01 Avg	3,729	1,077	1,574	59,771	10,447	76,597
2002-11 Avg	1,343	734	1,040	47,563	6,634	57,778
2012	863	24	90	11,501	4,618	17,096

Appendix A5.–Chum salmon commercial catch by district, in numbers of fish, Bristol Bay, 1992–2012.

Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
1992	167,168	121,472	57,170	398,691	176,123	920,624
1993	43,684	70,628	73,402	505,799	144,869	838,382
1994	219,118	62,961	52,127	328,260	232,559	895,025
1995	236,472	68,325	62,801	390,158	221,126	978,882
1996	97,574	85,151	106,168	331,414	206,226	826,533
1997	8,628	59,139	16,903	185,635	47,285	317,590
1998	82,281	29,405	8,088	208,551	67,345	395,670
1999	259,922	74,890	68,004	170,795	111,677	685,288
2000	68,218	38,777	36,349	114,454	140,175	397,973
2001	16,472	33,579	43,394	526,602	211,701	831,748
2002	19,180	23,516	35,792	276,777	112,987	468,252
2003	34,481	37,116	52,908	740,311	68,154	932,970
2004	29,972	75,061	49,358	458,902	94,025	732481[a]
2005	204,777	62,029	39,513	966,050	124,694	1,397,063
2006	457,855	153,777	168,428	1,240,235	223,364	2,243,659
2007	383,927	157,991	242,025	953,275	202,486	1,939,704
2008	237,260	92,901	135,292	492,341	301,967	1,259,761
2009	255,520	118,212	64,973	744,083	141,371	1,324,159
2010	330,342	58,979	68,617	509,628	123,703	1,091,269
2011	205,789	41,401	37,525	340,881	113,455	739,051
20-Year Avg	167,932	73,266	70,942	494,142	153,265	924,180
1992-01 Avg	119,954	64,433	52,441	316,036	155,909	708,772
2002-11 Avg	215,910	82,098	89,443	672,248	150,621	1,139,589
2012	122,913	38,191	30,244	268,361	206,536	666,245

Appendix A6.–Pink salmon commercial catch by district, in numbers of fish, Bristol Bay, 1992–2012.

Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
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
2005	32	0	1	554	2,108	2,695
2006	25,149	700	0	39,011	80,748	145,608
2007	9	9	2	384	533	937
2008	20,682	1,033	16	138,284	125,409	285,424
2009	23	0	1	320	544	888
2010	8,237	1,655	0	1,289,970	39,734	1,339,596
2011	13	0	5	257	352	627
20-Year Avg	32,316	496	102	174,015	46,545	253,473
1992-01 Avg	52,266	3,388	229	99,897	52,198	142,239
2002-11 Avg	12,365	678	41	298,724	52,899	364,707
2012	3,535	285	0	877,466	28,055	909,341

Note: Averages include even-numbered years only.

Appendix A7.–Coho salmon commercial catch by district, in numbers of fish, Bristol Bay, 1992–2012.

Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
1992	18,553	47,780	35,794	84,077	5,328	191,532
1993	1,779	41,603	2,387	14,345	12,615	72,729
1994	5,877	48,436	19,250	5,615	96,062	175,240
1995	1,105	21,833	13,454	4,181	8,871	49,444
1996	3,601	38,156	13,163	11,401	58,978	125,299
1997	718	35,470	7,156	4,110	2,970	50,424
1998	1,587	29,856	13,007	22,703	58,688	125,841
1999	303	11,464	2,289	2,836	2,653	19,545
2000	952	13,166	1,269	112,819	2,758	130,964
2001	3	12,603	976	3,218	284	17,084
2002	0	7,099	464	93	754	8,410
2003	42	40,577	994	583	1,047	43,243
2004	2,142	2,324	4,744	47,706	15,463	72,379
2005	3,314	20,611	8,162	42,456	8	74,551
2006	5,163	26,788	3,087	44,385	449	79,872
2007	2,180	18,111	1,954	29,578	157	51,980
2008	7,055	29,682	2,220	76,668	1,159	116,784
2009	732	11,726	2,602	35,004	9,209	59,273
2010	1,006	9,984	467	69,186	23,730	104,373
2011	633	248	452	4,613	7,709	13,655
20-Year Avg	2,837	23,376	6,695	30,779	15,445	79,131
1992-01 Avg	3,448	30,037	10,875	26,531	24,921	95,810
2002-11 Avg	2,227	16,715	2,515	35,027	5,969	62,452
2012	423	1,286	0	92,598	16,012	110,319

Appendix A8.–Total salmon commercial catch by district, in numbers of fish, Bristol Bay, 1992–2012.

Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
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	25,546,540
2005	6,937,969	8,099,075	2,266,126	8,167,399	602,509	26,073,078
2006	7,642,241	7,591,163	2,603,760	12,285,064	947,228	31,069,456
2007	9,410,111	6,672,533	5,272,061	9,438,821	1,027,526	31,821,052
2008	10,648,148	7,527,884	2,472,719	7,629,284	1,082,937	29,360,972
2009	8,772,201	11,657,671	2,623,759	8,534,862	714,575	32,303,068
2010	11,198,163	5,141,490	4,101,230	10,318,394	860,099	31,619,376
2011	8,911,678	4,685,061	2,601,908	5,328,833	876,284	22,403,764
20-Year Avg	8,020,776	8,558,973	2,819,154	6,387,630	747,292	26,533,825
1992-01 Avg	8,731,605	10,250,580	2,783,379	4,871,035	713,129	27,349,728
2002-11 Avg	7,309,947	6,867,366	2,854,929	7,904,226	781,455	25,717,923
2012	10,119,802	4,936,318	2,397,878	4,018,595	787,271	22,259,864

Appendix A9.–Commercial sockeye salmon catch, in percent, by gear type and district, Bristol Bay, 1992–2012.

	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
1992	89	11				91	9	90	10	65	35				62	38	87	13
1993	84	16				93	7	90	10	72	28				54	46	86	14
1994	90	10				92	8	94	6	68	32				52	48	88	12
1995	89	11				90	10	95	5	68	32				52	48	87	13
1996	83	17				90	10	95	5	81	19				52	55	88	12
1997	73	27				87	13	88	12	70	30				37	63	87	13
1998	84	8	8			86	14	85	15	72	24	4	76	24	43	57	86	14
1999	85	8	7			85	15	89	11	70	24	6	78	22	53	47	82	18
2000	84	11	5			84	16	87	13	77	17	6	68	32	57	43	80	20
2001	82	16	2	74 [c]	26 [c]	86	14	80	20	77	18	5			66	34	80	20
2002				64 [c]	36 [c]	85	15	88	12	77	22	1	67	33	62	38	79	21
2003	91	9	0	65 [c]	35 [c]	81	19	89	11	83	15	2			63	37	79	21
2004	79	11	10	88	12	86	14	88	12	84	15	1			55	45	79	21
2005				81	19	82	18	87	13	84	14	2			56	44	66	34
2006	86	8	5	81	19	84	16	88	12	87	11	2			53	47	85	15
2007	82	12	6	80	12	84	16	92	8	80	17	3			59	41	81	19
2008	81	12	7			85	15	92	8	79	16	5			60	40	82	18
2009	80	12	9			85	15	87	13	76	20	4			60	40	82	18
2010	81	10	9			84	16	90	10	78	17	6	71	29	61	39	82	18
2011	84	10	7			83	17	87	13	76	16	7			60	40	81	19
20-Year Avg	84	12	6	76	23	86	14	89	11	76	21	4	72	28	56	45	82	18
1992-01 Avg	84	14	6	74	26	88	12	89	11	72	26	5	74	26	53	48	85	15
2002-11 Avg	83	11	7	77	22	84	16	89	11	80	16	3	69	31	59	41	80	20
2012	85	7	8			83	17	90	10	67	27	7	45	55	67	33	73	27
Allocation [d]	84	8	8	84	16	86	14	90	10	74	20	6	74	26	NA	NA	NA	NA

Note: Blank cells indicate no data.

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

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

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

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

Appendix A10.–Sockeye salmon escapement by district, in numbers of fish, Bristol Bay, 1992–2012.

Year	Naknek-Kvichak [a]	Egegik [b]	Ugashik [c]	Nushagak [d]	Togiak [e]	Total
1992	6,557,157	1,945,632	2,194,927	2,359,986	266,956	13,324,658
1993	5,908,799	1,517,000	1,413,454	2,372,617	242,475	11,454,345
1994	9,571,245	1,894,977	1,095,068	2,503,624	233,632	15,298,546
1995	11,365,573	1,282,508	1,321,108	2,284,060	240,266	16,493,515
1996	2,835,426	1,075,596	692,167	2,607,401 [f]	212,524	7,423,114
1997	2,747,511	1,104,004	656,641	2,061,085	171,373	6,740,614
1998	3,750,246	1,110,932	924,853	2,490,324	214,626	8,490,981
1999	8,303,878	1,727,772	1,662,042	2,302,934 [f]	231,196	14,227,822
2000	3,654,568	1,032,138	638,420	2,159,628 [f]	390,080	7,874,834
2001	3,194,708	968,872	866,368	2,765,440 [f]	338,616 [g]	9,102,876
2002	2,303,463	1,036,092	905,584	1,755,993 [f]	199,507	6,200,639
2003	5,627,974 [h]	1,152,120	790,202	2,295,963 [f]	261,851 [g]	10,128,110
2004	12,836,100 [h]	1,290,144	815,104	2,196,864 [f]	154,681 [g]	17,292,893
2005	9,283,980 [h]	1,621,734	799,612	2,968,962 [f]	155,778 [g]	14,830,066
2006	6,795,420 [h]	1,465,158	1,003,158	4,861,780 [f]	312,126 [i]	14,437,642
2007	8,221,926 [h]	1,432,500	2,599,186	2,461,579 [f]	269,646 [i]	14,984,837
2008	7,411,104 [h]	1,259,568	596,332	3,271,926 [f]	205,680 [i]	12,744,610
2009	4,406,424 [h]	1,146,276	1,364,338	2,317,569 [f]	313,946 [i]	9,548,553
2010	6,859,068 [h]	927,054	830,886	2,791,080 [f]	188,298 [i]	11,596,386
2011	4,325,220 [h]	961,200	1,029,853	1,947,577	190,970 [i]	8,454,820
20-Year Avg	6,297,990	1,297,564	1,109,965	2,538,820	239,711	11,532,493
1992-01 Avg	5,788,911	1,365,943	1,146,505	2,390,710	254,174	11,043,131
2002-11 Avg	6,807,068	1,229,185	1,073,426	2,686,929	225,248	12,021,856
2012	5,926,503	1,233,900	695,018	1,389,975	203,148 [i]	9,448,544

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

[b] Includes Egegik River. May include King Salmon River and Shosky Creek.

[c] Includes Ugashik River. Also includes Mother Goose River and Dog Salmon River systems in 1992–2012.

[d] Includes Wood, Igushik, Nuyakuk, Nushagak-Mulchatna and Snake rivers. Nushagak River sonar escapement estimates prior to 2006 were adjusted after the 2012 season to account for a transition in sonar technology that occurred in 2006 (Buck et al. 2012).

[e] Includes aerial survey of Togiak River, Lake tributaries, Kulukak system, other miscellaneous river systems, and Togiak River tower count except where noted.

[f] Snake River not surveyed.

[g] Only partial and/ or late aerial survey of Togiak streams.

[h] Includes Alagnak tower count.

[i] Togiak River 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, 1992–2012.

		Escapement				
Year	Catch	Kvichak [a]	Alagnak [b]	Naknek [a]	Total	Total Run
1992	9,395,948	4,725,864	224,643	1,606,650	6,557,157	15,953,105
1993	8,907,876	4,025,166	347,975	1,535,658	5,908,799	14,816,675
1994	16,327,858	8,337,840	242,595	990,810	9,571,245	25,899,103
1995	20,279,581	10,038,720	215,713	1,111,140	11,365,573	31,645,154
1996	8,211,983	1,450,578	306,750	1,078,098	2,835,426	11,047,409
1997	589,311	1,503,732	218,115	1,025,664	2,747,511	3,336,822
1998	2,595,439	2,296,074	252,200	1,202,172	3,750,446	6,345,885
1999	9,452,972	6,196,914	481,600	1,625,364	8,303,878	17,756,850
2000	4,727,061	1,827,780	451,300	1,375,488	3,654,568	8,381,629
2001	5,280,538	1,095,348	267,000	1,830,360	3,192,708	8,473,246
2002	1,418,938	703,884	335,661	1,263,918	2,303,463	3,722,401
2003	3,348,453	1,686,804	3,676,146 [a]	1,831,170	7,194,120	10,542,573
2004	4,715,070	5,500,134	5,396,592 [a]	1,939,374	12,836,100	17,551,170
2005	6,706,386	2,320,422	4,219,026 [a]	2,744,622	9,284,070	15,990,456
2006	7,153,750	3,068,226	1,773,966 [a]	1,953,228	6,795,420	13,949,170
2007	9,022,511	2,810,208	2,466,414 [a]	2,945,304	8,221,926	17,244,437
2008	10,381,844	2,757,912	2,180,502 [a]	2,472,690	7,411,104	17,792,948
2009	8,519,345	2,266,140	970,818 [a]	1,169,466	4,406,424	12,925,769
2010	10,858,209	4,207,410	1,187,730 [a]	1,463,928	6,859,068	17,717,277
2011	8,895,522	2,264,352	883,794 [a]	1,177,074	4,325,220	13,220,742
20-Year Avg	7,839,430	3,454,175	NA	1,617,109	6,376,211	14,215,641
1992-01 Avg	8,576,857	4,149,802	300,789	1,338,140	5,788,731	14,365,588
2002-11 Avg	7,102,003	2,758,549	2,528,332 [c]	1,896,077	6,963,692	14,065,694
2012	9,992,068	4,164,444	861,747	900,312	5,926,503	15,918,571

[a] Tower count.

[b] Aerial survey estimates.

[c] 2003–2011 average.

Appendix A12.–Inshore sockeye salmon total run by river system Naknek-Kvichak District, in thousands of fish, Bristol Bay, 1992–2012.

	Kvichak		Alagnak		Naknek		
Year	Number	%	Number	%	Number	%	Total Run [a]
1992	10,445	65	487	3 [b]	5,021	31	15,953
1993	9,313	63	817	6 [b]	4,687	32	14,817
1994	22,232	86	634	2 [b]	3,033	12	25,899
1995	27,431	87	651	2 [b]	3,564	11	31,646
1996	3,458	31	706	6 [b]	6,860	62	11,024
1997	1,683	50	244	7 [b]	1,409	42	3,336
1998	3,412	54	388	6 [b]	2,546	40	6,346
1999	12,947	73	1,070	6 [b]	3,740	21	17,757
2000	2,862	34	731	9 [b]	4,789	57	8,382
2001	1,426	17	409	5 [b]	6,639	78	8,474
2002	704	19	336	9 [b]	2,671	72	3,711
2003	1,721	19	2,110	24 [c]	5,096	57	8,927
2004	7,332	42	6,510	37 [c]	3,721	21	17,563
2005	2,951	18	5,436	33 [c]	8,005	49	16,392
2006	5,804	42	2,854	20 [c]	5,292	38	13,950
2007	4,231	25	4,277	25 [c]	8,736	51	17,244
2008	5,632	32	5,907	33 [c]	6,254	35	17,793
2009	5,545	43	2,689	21 [c]	4,692	36	12,926
2010	9,315	53	2,609	15 [c]	5,793	32	17,717
2011	5,916	53	2,421	15 [c]	4,884	32	13,221
20-Year Avg	7,218	45	2,064	N/A	4,872	40	14,154
1992-01 Avg	9,521	56	614	5	4,229	39	14,363
2002-11 Avg	4,915	35	3,515	25 [d]	5,514	42	13,944
2012	10,372	65	2,417	15 [b]	3,129	20	15,919

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

[b] Total run is based on aerial survey estimate.

[c] Total run is based on tower count.

[d] 2003–2011 average.

Appendix A13.–Inshore commercial catch and escapement of sockeye salmon in the Egegik District by river system, in numbers of fish, Bristol Bay, 1991–2012.

		Escapement			
Year	Catch	Egegik [a]	Shosky Cr. [b]	King Salmon River [b]	Total Run
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		9,637,534
2006	7,388,027	1,465,128	0		8,853,155
2007	6,493,655	1,432,500	0	1,500	7,927,655
2008	7,403,885	1,259,568	0	250	8,663,703
2009	11,527,462	1,146,276	0	4	12,673,742
2010	5,059,029	926,904		150	5,997,870
2011	4,805,388	961,200			5,643,282
20-Year Avg	8,469,756	1,297,478	6	352	9,761,854
1992-01 Avg	10,159,062	1,365,814	15	313	11,525,067
2002-11 Avg	6,780,450	1,229,143	0	399	7,998,640
2012	4,896,532	1,233,900		300	6,130,732

Note: Blank cells represent no survey conducted.

[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, 1992–2012.

		Escapement			
Year	Catch	Ugashik [a] River	King Salmon [b] River	Dog Salmon [b] River	Total Run
1992	3,320,966	2,173,692	13,425	7,810	5,515,893
1993	4,176,900	1,389,534	22,570	1,350	5,590,354
1994	4,352,797	1,080,858	8,885	5,325	5,447,865
1995	4,509,446	1,304,058	7,650	9,400	5,830,554
1996	4,411,055	667,518	7,230	17,419	5,103,222
1997	1,402,690	618,396	27,645	10,600	2,059,331
1998	730,274	890,508	27,425	6,920	1,655,127
1999	2,256,007	1,651,572	6,350	4,120	3,918,049
2000	1,538,790	620,040	12,900	5,480	2,177,210
2001	480,509	833,628	22,940	9,800	1,346,877
2002	1,573,234	892,104	11,460	2,020	2,478,818
2003	1,748,934	758,532	27,620	4,000	2,539,086
2004	3,139,229	776,364	22,850	15,890	3,954,333
2005	2,216,635	779,172	0 [c]	20,440	3,016,247
2006	2,426,650	978,718	0 [c]	24,440	3,429,808
2007	5,026,615	2,523,686	5,420 [c]	70,020	7,625,741
2008	2,334,022	588,632	0 [c]	7,700	2,930,354
2009	2,555,263	1,346,630	0 [c]	17,920	3,919,813
2010	4,031,457	805,686	0 [c]	25,200	4,862,718
2011	2,641,721	1,003,753	0 [c]	26,100	3,631,027
20-Year Avg	2,743,660	1,084,154	11,219	14,598	3,851,621
1992-01 Avg	2,717,943	1,122,980	15,702	7,822	3,864,448
2002-11 Avg	2,769,376	1,045,328	6,735	21,373	3,838,795
2012	2,367,544	670,578	8	24,432	3,062,562

[a] Tower count plus aerial survey index count.

[b] Aerial survey index count.

[c] King Salmon River system affected by Mt. Chiginigak.

Appendix A15.–Inshore commercial catch and escapement of sockeye salmon in the Nushagak District by river system, in numbers of fish, Bristol Bay, 1992–2012.

		Escapement							
Year	Catch	Wood [a]	Igushik [a]	Nuyakuk [a]	Nush/Mul [b]	Nushagak [c]	Snake [d]	Total	Total Run
1992	2,789,741	1,286,250	304,920	[e]	[e]	768,816 [f]	[g]	2,359,986	5,149,727
1993	5,236,557	1,176,126	405,564	[e]	[e]	790,927 [f]	[g]	2,372,617	7,609,174
1994	3,393,143	1,471,890	445,920	[e]	[e]	563,334 [f]	22,480	2,503,624	5,896,767
1995	4,445,883	1,482,162	473,382	69,702	241,434	311,136 [f]	17,380	2,284,060	6,729,943
1996	5,693,523	1,649,598	400,746	250,692	306,365	557,057 [f]	[g]	2,607,401	8,300,924
1997	2,506,818	1,512,396	127,704	272,982	139,609	412,591 [f]	8,394	2,061,085	4,567,903
1998	2,990,597	1,755,768	215,904	146,250	361,282	507,532 [f]	11,120	2,490,324	5,480,921
1999	6,175,419	1,512,426	445,536	81,006	263,966	344,972 [f]	[g]	2,302,934	8,478,353
2000	6,367,208	1,300,026	413,316	129,468	316,818	446,286 [f]	[g]	2,159,628	8,526,836
2001	4,734,800	1,458,732	409,596	184,044	713,068	897,112 [f]	[g]	2,765,440	7,500,240
2002	2,840,031	1,283,682	123,156	68,928	280,227	349,155 [f]	[g]	1,755,993	4,596,024
2003	6,665,918	1,459,782	194,088	116,646	525,447	642,093 [f]	[g]	2,295,963	8,961,881
2004	6,104,048	1,543,342	109,650	77,406	466,466	543,872 [f]	[g]	2,196,864	8,300,912
2005	7,132,342	1,496,550	365,709	251,016	855,687	1,106,703 [f]	[g]	2,968,962	10,101,304
2006	10,876,552	4,008,102	305,268	170,760	377,650	548,410	[g]	4,861,780	15,738,332
2007	8,404,111	1,528,086	415,452	[e]	[e]	518,041	[g]	2,461,579	10,865,690
2008	6,903,157	1,724,676	1,054,704	[e]	[e]	492,546	[g]	3,271,926	10,175,083
2009	7,730,168	1,319,232	514,188	[e]	[e]	484,149	[g]	2,317,569	10,047,737
2010	8,424,030	1,804,344	518,040	[e]	[e]	468,696	27,135	2,818,215	11,242,245
2011	4,953,271	1,098,006	421,380	[e]	[e]	428,191	21,167	1,968,744	6,922,015
20-year Avg	5,718,366	1,593,559	383,211	151,575	404,002	559,081	17,946	2,541,235	8,259,601
1992-01 Avg	4,433,369	1,460,537	364,259	162,021	334,649	559,976	14,844	2,390,710	6,824,079
2002-11 Avg	7,003,363	1,726,580	402,164	136,951	501,095	558,186	24,151	2,691,760	9,695,122
2012	2,696,149	764,211	193,326	[e]	[e]	432,438	12,508	1,402,483	4,098,632

Note: Blank cells represent no data.

[a] Tower count.

[b] Escapement estimates derived from the difference between Nushagak River sonar estimate and Nuyakuk tower count.

[c] Total escapements determined for the entire drainage using Nushagak River sonar estimate.

[d] Aerial survey estimate.

[e] The Nuyakuk tower project was in operation from 1995 to 2007. There is no breakdown of Nuyakuk or Nush/Mul. escapements outside of these years.

[f] Nushagak River sonar escapement estimates prior to 2006 were adjusted after the 2012 season to account for a transition in sonar technology that occurred in 2006 (Buck et al. 2012).

[g] No survey conducted.

Appendix A16.–Inshore sockeye salmon total run by river system, in thousands of fish and percent of total district run, Nushagak District, Bristol Bay, 1992–2012.

	Wood		Igushik		Nushagak								Snake [c]		
	Total Run		Total Run		Nushagak Escapement [a]					Catch	Total Run				
					Nuyakuk		Nush-Mul		Sonar	Total					
Year	Number	%	Number	%	Number	%	Number	%	Estimate [b]	Number	Number	%	Number	%	Total Run [d]
1992	2,481	48	794	15					769	1,107	1,876	36			5,151
1993	3,725	49	1,580	21					791	1,513	2,304	30			7,609
1994	2,957	50	1,300	22					563	1,034	1,597	27	42	0.7	5,896
1995	4,022	60	1,902	28	70	23	241	77	311	475	786	12	20	0.3	6,730
1996	5,007	60	1,481	18	251	45	306	55	557	1,256	1,813	22			8,301
1997	3,365	74	291	6	273	66	140	34	413	491	904	20	8	0.2	4,568
1998	3,901	71	571	10	146	29	362	71	508	490	998	18	11	0.2	5,481
1999	5,930	70	1,563	18	81	23	264	77	345	640	985	12			8,478
2000	5,278	62	1,748	21	129	29	317	71	446	1,054	1,500	18			8,526
2001	3,987	53	1,315	18	184	21	713	79	897	1,301	2,198	29			7,500
2002	3,715	81	207	5	69	20	280	80	349	325	674	15			4,596
2003	5,647	63	1,018	11	117	18	525	82	642	1,655	2,297	26			8,962
2004	5,375	65	564	7	77	14	467	86	544	1,801	2,345	28			8,284
2005	4,771	47	1,878	19	251	23	856	77	1,107	2,346	3,453	34			10,102
2006	11,064	70	1,435	9	171	31	377	69	548	2,690	3,238	21			15,737
2007	6,523	60	1,762	16					518	2,062	2,580	24			10,865
2008	5,236	56	2,394	26					493	1,152	1,645	18			9,275
2009	7,195	72	926	9					484	1,443	1,927	19			10,048
2010	7,698	66	1,365	12					469	2,153	2,622	22	27	0.2	11,712
2011	4,328	63	1,036	15					428	1,042	1,470	21	21	0.3	6,855
20-Year Avg	5,110	62	1,257	15	152	28	404	72	559	1,302	1,861	23	22	0.3	8,234
1992-01 Avg	4,065	60	1,255	18	162	34	335	66	560	936	1,496	22	20	0.3	6,824
2002-11 Avg	6,155	64	1,259	13	137	21	501	79	558	1,667	2,225	23	24	0.3	9,644
2012	2,517	61	486	12					432	650	1,082	26	13	0.3	4,098

Note: Blank cells represent no data.

[a] The Nuyakuk Tower project was in operation from 1995 to 2006. There is no breakdown of Nuyakuk or Nush/Mul. River escapements outside of these years.

[b] Nushagak River sonar escapement estimates prior to 2006 were adjusted after the 2012 season to account for a transition in sonar technology that occurred in 2006 (Buck et al 2012).

[c] Aerial survey count.

[d] Due to rounding, district total runs may not equal the sum of the rows. District total run is the sum of Wood, Igushik, Nushagak, and Snake River system 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, 1992–2012.

	Catch				Escapement						
					Togiak						
Year	Togiak	Kulukak	Os/Mat [a]	Total	Lake [b]	River [c]	Tributaries [d]	Kulukak [e]	Other [f]	Total	Total Run
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 [g]	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 [h]	650,066	55,081	861	706,008	232,302			8,004	21,545	261,851	967,859
2004 [g,h]	357,354	80,204	1,095	438,653	129,462	6,100	75		19,044	154,681	593,334
2005 [h]	411,320	53,774	0	465,094	149,178	5,580	1,020		3,713	159,491	624,585
2006 [i]	574,629	51,603	0	626,442	312,126					312,126	938,568
2007 [i]	758,736	57,845	0	816,581	269,646					269,646	1,086,227
2008 [i]	626,792	24,523	0	651,315	205,680					205,680	856,995
2009 [i]	516,938	42,504	0	559,442	313,946					313,946	873,388
2010 [i]	535,458	132,392	0	667,850	190,970					190,970	858,820
2011 [i]	625,962	118,664	698	745,324	188,298					188,298	933,622
20-Year Avg	483,236	63,582	1,460	548,288	203,874	9,391	11,086	17,576	17,382	239,897	788,185
1992-01 Avg	418,860	59,550	2,413	480,823	189,624	10,036	13,002	18,446	18,096	249,205	730,027
2002-11 Avg	561,917	68,510	295	630,745	221,290	5,840	548	8,004	14,767	228,521	859,266
2012 [i]	589,836	36,083	1,538	627,457	203,148					203,148	830,605

Note: Blank cells represent 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] Only the Ongivinuk River was surveyed in tributaries.

[h] Partial survey.

[i] No aerial surveys to assess sockeye salmon escapement conducted.

Appendix A18.–Inshore total run of sockeye salmon by district, in numbers of fish, Bristol Bay, 1992–2012.

Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak [a]	Togiak	Total
1992	15,953,105	17,592,207	5,515,893	5,149,727	993,402	45,204,334
1993	14,816,675	23,117,858	5,590,354	7,609,174	782,408	51,916,469
1994	25,899,103	12,645,190	5,447,865	5,896,767	633,671	50,522,596
1995	31,645,154	15,708,487	5,830,554	6,729,943	845,594	60,759,732
1996	11,047,409	11,884,711	5,103,222	8,300,924	672,587	37,008,853
1997	3,336,822	8,621,393	2,059,331	4,567,903	313,942	18,899,391
1998	6,345,885	4,639,777	1,655,127	5,480,921	405,053	18,526,763
1999	17,738,850	9,116,477	3,918,049	8,478,353	616,607	39,868,336
2000	8,381,629	8,083,037	2,177,210	8,526,836	1,185,076	28,353,788
2001	8,473,246	3,841,534	1,346,877	7,500,240	1,148,712	22,310,609
2002	3,722,401	5,646,466	2,478,818	4,596,024	433,250	16,876,959
2003	8,976,427	3,443,622	2,539,136	8,961,881	967,859	24,888,925
2004	15,066,178	11,499,371	3,954,333	8,300,912	591,915	41,017,529
2005	15,984,566	9,625,859	3,001,814	10,101,304	622,965	39,336,508
2006	13,945,960	8,873,391	3,432,755	15,738,137	886,755	42,876,998
2007	17,244,437	7,928,408	7,625,801	10,865,690	1,086,227	44,750,563
2008	17,792,948	8,663,453	2,930,354	10,175,083	856,995	40,418,833
2009	12,921,368	12,673,738	3,919,601	10,047,737	873,388	40,435,832
2010	17,717,277	5,997,870	4,862,718	11,215,110	856,148	40,649,123
2011	13,341,541	5,771,562	3,673,348	6,834,129	935,596	30,556,176
20-Year Avg	14,017,549	9,768,721	3,853,158	8,253,840	785,408	36,758,916
1992-01 Avg	14,363,788	11,525,067	3,864,448	6,824,079	759,705	37,337,087
2002-11 Avg	13,671,310	8,012,374	3,841,868	9,683,601	811,110	36,180,745
2012	15,918,571	6,130,432	3,062,562	4,086,124	829,067	30,026,756

[a] Reflects a 2012 adjustment of Nushagak River sonar escapement estimates prior to 2006 to account for a transition in sonar technology that occurred in 2006 (Buck et al. 2012).

Appendix A19.–Chinook salmon harvest, escapement and total runs in the Nushagak District, in numbers of fish, Bristol Bay, 1992–2012.

	Harvests by Fishery				Inriver	Spawning	Total
Year	Commercial	Sport	Subsistence	Total	Abundance[a]	Escapement[b]	Run
1992	47,563	4,755	13,588	65,906	172,374	163,620	229,526
1993	62,971	5,900	17,709	86,580	203,508	192,402	278,982
1994	119,478	10,627	15,490	145,595	199,643	186,791	332,386
1995	79,942	4,951	13,701	98,594	178,146	169,541	268,135
1996	72,011	5,391	15,941	93,343	108,456	98,556	191,899
1997	64,160	3,497	15,318	82,975	170,610	82,000	164,975
1998	117,065	5,827	12,258	135,150	244,461	235,003	370,153
1999	10,893	4,237	10,057	25,187	129,686	122,059	147,246
2000	12,055	6,017	9,470	27,542	117,288	108,588	136,130
2001	11,568	5,899	11,760	29,227	191,988	182,632	211,859
2002	39,473	3,693	11,281	54,447	181,307	173,956	228,403
2003	42,615	5,590	18,686	66,891	166,507	155,085	221,976
2004	100,601	6,813	15,610	123,024	242,183	231,224	354,248
2005	62,308	8,565	12,529	83,402	234,123	223,034	306,436
2006	84,010	7,473	9,971	101,454	124,683	116,088	217,542
2007	51,473	9,669	13,330	74,472	60,464	48,644	123,116
2008	18,670	6,700	12,960	38,330	96,641	87,673	126,003
2009	24,058	6,354	12,737	43,149	81,480	72,100	115,249
2010	25,580	3,907	9,150	38,637	36,625[c]	30,443	69,080
2011	26,443	4,844	12,461	43,748	59,728[c]	51,068	94,816
20-Year Avg	53,647	6,035	13,200	72,883	149,995	136,525	209,408
1992-01 Avg	59,771	5,710	13,529	79,010	171,616	154,119	233,129
2002-11 Avg	47,523	6,361	12,872	66,755	128,374	118,932	185,687
2012	11,501	6,295[d]	12,128[d]	29,923	107,786[c]	98,676	128,600

Note: Blank cells represent no data.

[a] Inriver abundance estimated by sonar below the village of Portage Creek. Estimates prior to 2006 were adjusted after the 2012 season to account for a transition in sonar technology that occurred in 2006 (Buck et al. 2012).

[b] Spawning escapement estimated from the following: 1997 - from comprehensive aerial surveys; 1992–1996, 1998–2012 - from inriver abundance estimated by sonar minus inriver harvests.

[c] Inseason management count. Revised passage estimates for 2010, 2011, and 2012 are 60,185, 108,278, and 174,085 respectively.

[d] Data not available at the time of publication; 5-year average used.

Appendix A20.–Chinook salmon harvest, escapement and total runs in the Togiak District, in numbers of fish, Bristol Bay, 1992–2012.

	Harvests by Fishery				Spawning	Total
Year	Commercial	Sport [a]	Subsistence	Total	Escapement [b]	Run
1992	12,640	271	1,361	14,272	10,413	24,685
1993	10,851	225	784	11,860	16,035	27,895
1994	10,486	663	904	12,053	19,353	31,406
1995	11,981	581	448	13,010	16,438	29,448
1996	8,602	790	471	9,863	11,476	21,339
1997	6,114	1,165	667	7,946	11,495	19,441
1998	14,131	763	782	15,676	11,666	27,342
1999	11,919	644	1,244	13,807	12,263	26,070
2000	7,858	470	1,116	9,444	16,897	26,341
2001	9,937	1,006	1,612	12,555	15,185	27,740
2002	2,801	76	703	3,580	14,265	17,845
2003	3,231	706	1,208	5,145	5,668 [c]	[d]
2004	9,310	1,388	1,094	11,792	15,990	27,782
2005	10,605	1,734	1,528	13,867	13,521	27,388
2006	16,225	1,064	1,630	18,919	1,670 [c]	[d]
2007	7,755	1,501	1,234	10,490	0 [c]	[d]
2008	3,094	592	1,337	5,023	2,140 [c]	[d]
2009	4,397	606	827	5,830	[e]	[d]
2010	5,082	591	1,162	6,835	10,096 [f]	16,931
2011	3,094	871	966	4,931	2,140	7,071
20-Year Avg	8,506	785	1,054	10,345	10,880	23,915
1992-01 Avg	10,452	658	939	12,049	14,122	26,171
2002-11 Avg	2,007	6,559	913	1,169	8,641	7,277
2012	4,618	832 [g]	1,105 [g]	6,555	1,503	8,058

Note: Blank cells represent no data.

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

[b] Spawning escapement estimated from comprehensive aerial surveys.

[c] Partial survey.

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

[e] No survey conducted due to poor weather/pilot availability.

[f] USFWS radiotelemetry-derived escapement estimate.

[g] 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, 1992–2012.

	Nushagak District			Togiak District		
Year	Catch	Escapement [a]	Total Run	Catch	Escapement [b]	Total Run
1992	398,691	384,442	783,133	176,123	120,000	296,123
1993	505,799	275,748	781,547	144,869	98,470	243,339
1994	328,267	481,004	809,271	232,559	229,470	462,029
1995	390,158	269,886	660,044	221,126	163,040	384,166
1996	331,414	285,648	617,062	206,226	117,240	323,466
1997	185,620	78,011	263,631	47,459	106,580	154,039
1998	208,551	379,818	588,369	67,408	102,455	169,863
1999	170,795	307,586	478,381	111,677	116,183	227,860
2000	114,454	179,394	293,848	140,175	80,860 [c]	[d]
2001	526,602	716,850	1,243,452	211,701	252,610	464,311
2002	276,845	533,095	809,940	112,987	154,360	267,347
2003	740,311	374,992	1,115,303	68,406	39,090 [c]	[d]
2004	470,248	360,265	830,513	94,025	103,810	197,835
2005	874,090	519,618	1,393,708	124,694	108,346	233,040
2006	1,240,235	661,003	1,901,238	223,364	26,900 [c]	250,264
2007	953,275	161,483	1,114,758	202,486	[e]	202,486
2008	541,469	326,300	867,769	301,855	279,580 [c]	581,435
2009	745,083	438,481	1,183,564	141,371	[e]	[d]
2010	509,628	273,914	783,542	123,703	[e]	[d]
2011	340,881	248,278	589,159	113,455	[e]	[d]
20-Year Avg	492,621	362,791	855,412	153,283	131,187	222,880
1992-01 Avg	316,035	335,839	651,874	155,932	138,691	272,520
2002-11 Avg	669,207	389,743	1,058,949	150,635	118,681	173,241
2012	268,361	364,499	632,860	206,536	126,000	332,536

Note: Blank cells represent no data.

[a] Escapement based on estimates from the Nushagak River sonar project at Portage Creek. Estimates prior to 2006 were adjusted after the 2012 season to account for a transition in sonar technology that occurred in 2006 (Buck et al. 2012).

[b] Escapement estimates based on aerial surveys.

[c] Partial survey count.

[d] Total run cannot be determined; escapement information incomplete or unavailable.

[e] Poor weather/pilot availability prevented aerial surveys to assess escapement.

Appendix A22.–Average round weight (in pounds) of the commercial salmon catch by species, Bristol Bay, 1992–2012.

Year	Sockeye	Chinook	Chum	Pink	Coho
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
2009	5.9	15.2	6.3	3.3	6.5
2010	5.5	14.7	6.4	3.2	8.9
2011	6.2	13.0	7.0	3.2	6.8
20-Year Avg	5.9	16.3	6.8	3.5	7.0
1992-01 Avg	5.9	17.2	6.9	3.4	7.1
2002-11 Avg	5.9	15.5	6.7	3.6	6.8
2012	5.7	13.9	6.7	3.1	5.4

Note: Blank cells represent no data.

Appendix A23.–Average price paid in dollars per pound for salmon, by species, Bristol Bay, 1992–2012.

Year	Sockeye	Chinook	Chum	Pink	Coho
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	0.66	0.71	0.12	0.03	0.38
2007	0.67	0.64	0.13	0.03	0.41
2008	0.75	0.83	0.17	0.17	0.55
2009	0.80	0.89	0.17	0.07	0.56
2010	1.07	1.18	0.28	0.36	0.66
2011	1.17	1.04	0.37	0.29	0.74
20-Year Avg	0.78	0.64	0.16	0.11	0.47
1992-01 Avg	0.84	0.59	0.15	0.11	0.50
2002-11 Avg	0.73	0.69	0.16	0.12	0.45
2012	0.97	1.07	0.26	0.12	0.26

Note: Price does not include all postseason adjustments or bonuses.

Appendix A24.–Estimated exvessel value of the commercial salmon catch by species, in thousands of dollars, Bristol Bay, 1992–2012.

Year	Sockeye	Chinook	Chum	Pink [a]	Coho	Total
1992	204,604	1,073	1,526	251	792	208,245
1993	163,089	1,133	1,194		263	165,679
1994	188,918	1,616	1,201	41	1,019	192,796
1995	187,863	1,295	1,262		142	190,562
1996	150,968	754	606	7	336	152,671
1997	65,743	652	198		183	66,777
1998	70,529	1,414	234	7	503	72,688
1999	114,504	207	407		97	115,215
2000	83,940	165	232	16	403	84,756
2001	40,395	132	679		40	41,246
2002	31,899	272	290	0	19	32,479
2003	47,993	249	482		77	48,801
2004	77,897	647	398	19	158	79,119
2005	96,650	738	962		154	98,503
2006	90,233	1,330	1,350	19	178	93,110
2007	119,196	542	1,583		120	121,441
2008	109,904	298	1,271	158	288	111,919
2009	127,615	400	1,291		162	129,468
2010	180,818	464	1,711	1,565	469	185,027
2011	135,655	430	1,604		37	137,726
20 Year Avg	114,421	690	924	208	272	116,411
1992-01 Avg	127,055	844	754	64	378	129,064
2002-11 Avg	101,786	537	1,094	352	166	103,759
2012	113,777	254	831	339	155	115,356

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

[a] Includes even-numbered years only.

Appendix A25.–South Unimak and Shumigan Island preseason sockeye allocation, actual sockeye and chum salmon harvest in thousands of fish, Alaska Peninsula, 1992–2012.

	South Unimak			Shumigan Island			Total		
	Sockeye			Sockeye			Sockeye		
Year	Actual	Quota [a]	Chum	Actual	Quota [a]	Chum	Actual	Quota [a]	Chum
1992	2,047	1,959	324	410	432	102	2,457	2,391	426
1993	2,365	2,375	382	607	524	150	2,972	2,899	532
1994	1,001	2,938	374	460	648	208	1,461	3,586	582
1995	1,451	2,987	342	653	659	195	2,104	3,646	537
1996	572	2,564	129	446	566	228	1,018	3,130	357
1997	1,179	1,840	196	449	406	126	1,628	2,246	322
1998	975	1,529	195	314	336	50	1,289	1,865	245
1999	1,106	1,024	187	269	226	58	1,375	1,250	245
2000	892	1,650	169	359	363	70	1,251	2,013	239
2001	271		185	130		149	401		334
2002	356		201	235		178	591		379
2003	336		121	117		161	453		282
2004	532		131	816		357	1,348		488
2005	437		144	567		282	1,004		426
2006	491		96	441		204	932		300
2007	738		153	852		144	1,023		297
2008	1,064		285	650		126	1,714		411
2009	594		201	573		496	1,167		697
2010	488		100	331		171	819		271
2011	937		231	422		192	1,359		423
20-year Avg	892	2,096	207	455	462	182	1,318	2,558	390
1992-01 Avg	1,186	2,096	248	410	462	134	1,596	2,558	382
2002-11 Avg	597		166	500		231	1,041		397
2012	900		212	628		181	1,528		393

Note: Blank cells represent no data.

[a] Sockeye salmon quota management system used from 1992 to 2000. The system was based on 8.3% of the Bristol Bay projected inshore harvest and traditional harvest patterns.

Appendix A26.–Subsistence salmon harvest by district and species, Bristol Bay, 1992–2012.

Year	Permits Issued	Sockeye	Chinook	Chum	Pink	Coho	Total
Naknek-Kvichak District							
1992	571	94,304	1,444	2,721	1,601	1,152	101,222
1993	560	101,555	2,080	2,476	762	2,025	108,898
1994	555	87,662	1,843	503	460	1,807	92,275
1995	533	75,644	1,431	1,159	383	1,791	80,407
1996	540	81,305	1,574	816	794	1,482	85,971
1997	533	85,248	2,764	478	422	1,457	90,368
1998	567	83,095	2,433	784	1,063	1,592	88,967
1999	528	85,315	1,567	725	210	856	88,674
2000	562	61,817	894	560	845	937	65,053
2001	506	57,250	869	667	383	740	59,909
2002	471	52,805	837	909	1,137	943	56,632
2003	489	61,443	1,221	259	198	812	63,934
2004	481	71,110	1,075	469	1,080	566	74,300
2005	462	69,211	1,047	546	275	1,224	72,302
2006	468	69,097	881	341	757	720	71,796
2007	480	69,837	672	405	262	1,104	72,280
2008	481	69,823	719	404	801	1,437	73,184
2009	461	67,970	392	167	36	669	69,235
2010	437	62,309	422	233	835	645	64,445
2011	484	67,164	550	215	56	690	68,675
20-Year Avg	508	73,698	1,236	742	937 [b]	1,132	77,426
1992-01 Avg	546	81,320	1,690	1,089	953 [b]	1,384	86,174
2002-11 Avg	471	66,077	782	395	922 [b]	881	68,678
2012 [a]	469	67,421	551	285	818 [a,b]	909	69,564
Egegik District							
1992	80	3,322	124	270	51	729	4,496
1993	69	3,633	128	148	15	905	4,829
1994	59	3,208	166	84	153	857	4,468
1995	60	2,818	86	192	100	690	3,886
1996	44	2,321	99	89	85	579	3,173
1997	34	2,438	101	21	5	740	3,304
1998	36	1,795	44	33	52	389	2,314
1999	42	2,434	106	35	2	806	3,384
2000	31	842	16	11	0	262	1,131
2001	57	2,493	111	105	16	928	3,653
2002	53	1,892	65	34	12	356	2,359
2003	62	3,240	84	32	10	297	3,663
2004	46	2,618	169	410	91	1,423	4,711
2005	45	2,267	81	231	2	526	3,106
2006	41	1,641	94	34	7	641	2,418
2007	28	980	165	72	26	334	1,577
2008	37	1,502	91	35	4	295	1,928
2009	26	778	31	6	5	133	953
2010	37	1,657	93	59	8	275	2,091
2011	37	1,772	91	23	2	377	2,265
20-Year Avg	46	2,183	97	96	46 [b]	577	2,985
1992-01 Avg	51	2,530	98	99	68 [b]	689	3,464
2002-11 Avg	41	1,835	96	94	24 [b]	466	2,507
2012 [a]	33	1,338	94	39	6 [a,b]	283	1,763

-continued-

Appendix A26.–Page 2 of 3.

Year	Permits Issued	Sockeye	Chinook	Chum	Pink	Coho	Total
Ugashik District							
1992	37	2,348	106	79	8	397	2,938
1993	39	1,766	86	107	24	495	2,478
1994	31	1,587	126	42	38	579	2,372
1995	20	1,513	56	18	6	290	1,883
1996	26	1,247	50	21	7	298	1,623
1997	28	2,785	169	39	23	311	3,327
1998	27	1,241	59	75	82	485	1,942
1999	25	1,365	35	5	0	271	1,675
2000	31	1,927	51	34	1	467	2,481
2001	24	1,197	61	8	2	357	1,624
2002	23	1,294	51	14	2	460	1,821
2003	23	1,113	31	30	0	392	1,567
2004	21	804	64	9	4	234	1,116
2005	22	818	27	18	2	249	1,114
2006	25	962	41	6	16	339	1,364
2007	17	1,056	43	88	79	281	1,546
2008	14	1,660	47	17	9	222	1,955
2009	15	1,061	33	4	41	131	1,270
2010	18	896	21	4	0	135	1,056
2011	15	531	15	3	2	136	687
20-Year Avg	24	1,359	59	31	17 [b]	326	1,792
1992-01 Avg	29	1,698	80	43	27 [b]	395	2,234
2002-11 Avg	19	1,020	37	19	6 [b]	258	1,350
2012 [a]	16	1,041	32	23	5 [a,b]	181	1,303
Nushagak District							
1992	476	30,640	13,588	7,076	3,519	7,103	61,926
1993	500	27,114	17,709	3,257	240	5,038	53,358
1994	523	26,501	15,490	5,055	2,042	5,338	54,426
1995	484	22,793	13,701	2,786	188	3,905	43,373
1996	481	22,935	15,941	4,704	1,573	5,217	50,370
1997	538	25,080	15,318	2,056	218	3,433	46,106
1998	562	25,217	12,258	2,487	1,076	5,316	46,355
1999	548	29,387	10,057	2,409	124	3,993	45,969
2000	541	24,451	9,470	3,463	1,662	5,983	45,029
2001	554	26,939	11,760	3,011	378	5,993	48,080
2002	520	22,777	11,281	5,096	1,179	4,565	44,897
2003	527	25,491	18,686	5,064	403	5,432	55,076
2004	511	17,491	15,610	3,869	1,944	4,240	43,154
2005	502	23,916	12,529	5,006	793	5,596	47,841
2006	461	20,773	9,971	4,448	1,591	3,590	40,373
2007	496	25,127	13,330	3,006	430	3,050	44,944
2008	571	26,828	12,960	4,552	1,923	5,133	51,395
2009	530	26,922	12,737	4,510	355	6,777	51,300
2010	528	22,326	9,150	3,660	1,672	2,983	39,791
2011	525	28,006	12,461	3,055	230	5,746	49,498
20-Year Avg	519	25,036	13,200	3,928	1,818 [b]	4,922	48,163
1992-01 Avg	521	26,106	13,529	3,630	1,974 [b]	5,132	49,499
2002-11 Avg	517	23,966	12,871	4,227	1,662 [b]	4,711	46,827
2012 [a]	530	25,842	12,128	3,757	1,798 [a,b]	4,738	47,386

-continued-

Year	Permits Issued	Sockeye	Chinook	Chum	Pink	Coho	Total
Togiak District							
1992	40	3,716	1,361	626	135	1,231	7,069
1993	38	2,139	784	571	8	743	4,245
1994	25	1,777	904	398	77	910	4,066
1995	22	1,318	448	425	0	703	2,894
1996	19	662	471	285	59	199	1,676
1997	31	1,440	667	380	0	260	2,747
1998	42	2,211	782	412	76	310	3,791
1999	76	3,780	1,244	479	84	217	5,804
2000	54	3,013	1,116	569	90	342	5,130
2001	92	2,576	1,612	367	61	388	6,590
2002	36	2,890	703	605	10	241	3,878
2003	92	2,357	1,208	483	451	883	7,428
2004	46	2,221	1,094	383	108	204	3,584
2005	45	2,299	1,528	301	26	295	4,448
2006	61	2,728	1,630	492	355	408	5,613
2007	48	2,548	1,234	420	19	110	4,332
2008	91	3,770	1,337	701	114	541	6,463
2009	40	2,220	827	365	5	272	3,689
2010	64	3,256	1,162	735	113	514	5,779
2011	68	3,462	966	497	42	545	5,512
20-Year Avg	52	2,519	1,054	475	114 [b]	466	4,737
1992-01 Avg	44	2,263	939	451	87 [b]	530	4,401
2002-11 Avg	59	2,775	1,169	498	140 [b]	401	5,073
2012 [a]	62	3,051	1,105	544	114 [a,b]	396	5,155
Total Bristol Bay Area							
1992	1,204	134,330	16,623	10,772	5,314	10,612	177,651
1993	1,206	136,207	20,787	6,559	1,049	9,206	173,808
1994	1,193	120,735	18,529	6,082	2,770	9,491	157,607
1995	1,119	104,086	15,722	4,580	677	7,378	132,443
1996	1,110	108,470	18,136	5,915	2,518	7,775	142,813
1997	1,166	116,991	19,159	2,974	668	6,201	145,992
1998	1,234	113,560	15,576	3,792	2,349	8,093	143,368
1999	1,219	122,281	13,009	3,653	420	6,143	145,506
2000	1,219	92,050	11,547	4,637	2,599	7,991	118,824
2001	1,226	92,041	14,412	4,158	839	8,406	119,856
2002	1,093	81,088	12,936	6,658	2,341	6,565	109,587
2003	1,182	95,690	21,231	5,868	1,062	7,816	131,667
2004	1,100	93,819	18,012	5,141	3,225	6,667	126,865
2005	1,076	98,511	15,212	6,102	1,098	7,889	128,811
2006	1,050	95,201	12,617	5,321	2,726	5,697	121,564
2007	1,062	107,778	15,484	3,972	796	4,870	132,901
2008	1,178	103,583	15,153	5,710	2,851	7,627	134,924
2009	1,063	98,951	14,020	5,052	442	7,982	126,447
2010	1,082	90,444	10,852	4,692	2,627	4,623	113,238
2011	1,129	100,935	14,083	3,793	332	7,494	126,637
20-Year Avg	1,146	105,338	15,655	5,272	2,932 [b]	7,426	135,525
1992-01 Avg	1,190	114,075	16,350	5,312	3,110 [b]	8,130	145,787
2002-11 Avg	1,102	96,600	14,960	5,231	2,754 [b]	6,723	125,264
2012 [a]	1,103	100,338	13,918	4,644	2,739 [a,b]	6,519	126,829

Note: The sum of columns and rows may not equal the estimated total due to rounding. Harvests extrapolated over areas based on permits returned.

[a] 5-year average was used, as data was not available at the time of publication.

[b] Includes even years only.

Appendix A27.–Subsistence harvest of sockeye salmon by community, in numbers of fish, Kvichak River drainage, Bristol Bay, 1992–2012.

Year	Levelock	Igiugig	Pedro Bay	Kokhanok	Iliamna-Newhalen [a]	Nondalton	Port Alsworth	Other [b]	Total
1992	4,699	1,397	6,226	18,810	19,067	17,890	3,254	2,780	74,123
1993	1,467	1,201	8,747	15,771	15,553	15,246	3,074	3,284	64,343
1994	3,756	497	5,359	14,412	20,134	4,188	2,892	3,441	54,679
1995	1,120	2,309	5,219	14,011	14,787	11,856	3,263	2,307	54,872
1996	1,062	2,067	5,501	8,722	19,513	17,194	2,348	3,101	59,508
1997	2,454	1,659	3,511	10,418	16,165	13,136	2,678	3,635	53,656
1998	1,276	1,608	5,005	10,725	14,129	17,864	4,282	2,834	57,723
1999	1,467	1,981	1,815	7,175	6,679	11,953	3,200	2,720	36,990
2000	908	779	2,118	9,447	8,132	7,566	1,958	1,901	32,808
2001	625	2,138	2,687	9,847	9,417	5,508	1,201	1,578	33,001
2002	737	1,081	2,135	9,771	13,824	8,016	1,370	1,591	38,495
2003	1,000	1,026	4,803	11,869	21,652	8,789	2,455	1,631	53,225
2004	914	1,017	4,162	16,801	12,010	8,824	2,457	2,078	48,263
2005	0	1,252	4,319	19,028	11,487	8,885	2,418	2,461	49,850
2006	102	1,803	5,487	15,105	11,453	7,902	3,211	2,410	47,473
2007	30	1,558	4,884	14,755	13,569	8,916	3,307	2,544	49,563
2008	759	1,457	7,802	15,759	9,871	5,709	3,155	2,260	46,772
2009	940	2,901	5,609	13,973	8,815	3,185	3,250	2,015	40,688
2011	933	1,931	3,898	9,895	15,433	7,947	4,026	1,163	45,226
20-Year Avg	1,431	1,536	4,811	12,888	14,566	10,187	2,838	2,415	50,670
1992-01 Avg	2,258	1,455	5,043	12,097	16,379	13,006	2,990	2,856	56,085
2002-11 Avg	604	1,616	4,579	13,680	12,753	7,368	2,685	1,973	45,256
2012 [c]	553	1,930	5,536	13,897	11,828	6,732	3,390	2,078	45,944

Note: Harvests are extrapolated over areas for all permits issued, based on those returned. Harvest estimates based on community of residence and include fish caught only in the Naknek-Kvichak District.

[a] Includes Chekok.

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

[c] 5-year average was used, as current data was not available at the time of publishing.

Appendix A28.–Subsistence salmon harvest by community, Nushagak District, Bristol Bay, 1992–2012.

Year	Dillingham [a]	Manokotak	Aleknagik	Ekwok	New Stuyahok	Koliganek	Other [b]	Total
1992	31,702	4,317	2,184	5,971	11,325	3,708	2,635	61,842
1993	25,315	3,048	2,593	2,936	12,169	4,180	2,538	52,779
1994	30,145	3,491	2,289	4,343	8,056	4,513	2,322	55,159
1995	24,998	2,453	1,468	2,046	6,911	2,983	2,406	43,265
1996	27,161	3,883	1,733	2,866	8,892	3,319	2,113	49,967
1997	23,255	3,988	1,989	1,797	6,427	4,179	4,598	46,233
1998	24,072	4,069	1,112	3,555	5,419	3,166	4,958	46,351
1999	26,502	3,413	1,532	1,805	4,556	2,772	5,389	45,969
2000	27,931	3,173	1,111	3,946	3,715	2,792	2,362	45,029
2001	26,435	3,700	2,129	2,218	7,294	2,209	4,096	48,080
2002	25,004	3,254	1,517	2,735	6,043	3,098	3,247	44,897
2003	26,955	4,214	2,044	2,291	10,817	5,721	3,034	55,076
2004	23,308	2,052	2,206	1,891	6,714	3,619	3,364	43,154
2005	21,898	1,576	1,795	1,388	9,673	8,422	3,088	47,841
2006	22,184	1,655	2,048	1,499	6,160	3,886	2,941	40,373
2007	25,237	2,442	1,382	1,267	8,284	3,054	3,278	44,944
2008	27,446	5,429	3,309	1,902	5,690	4,423	3,196	51,395
2009	30,184	2,068	2,646	2,345	6,855	3,700	3,502	51,300
2010	22,903	2,665	1,570	1,380	5,608	2,406	3,259	39,791
2011	26,850	1,433	3,016	1,805	7,980	3,539	4,875	49,498
20-Year Avg	25,974	3,116	1,984	2,499	7,429	3,784	3,360	48,147
1992-01 Avg	26,752	3,554	1,814	3,148	7,476	3,382	3,342	49,467
2002-11 Avg	25,197	2,679	2,153	1,850	7,382	4,187	3,378	46,827
2012 [c]	26,524	2,807	2,385	1,740	6,883	3,424	3,622	47,385

Note: Harvests are extrapolated over areas for all permits issued based on those returned. Harvest estimates are based on community of residence and include fish caught only in the Nushagak District.

[a] Includes Portage Creek, Clarks Point, and Ekuk.

[b] Subsistence harvests by non-watershed residents.

[c] A 5-year average was used, as current 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, 1992–2012.

	Number	Daily	Gillnet					Purse Seine				
Year	of Buyers	Processing Capacity [a]	Fishery Dates	Effort [b]	Duration (hours)	Harvest [c]	Roe %	Effort [b]	Duration (hours)	Harvest [c]	Roe %	Total Harvest [c]
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
2009	6	2,015	5/16-5/31	32	314.0	4,140	10.2	21	266.0	12,967	10.3	17,107
2010	6	2,690	5/11-5/27	35	338.0	7,540	10.1	26	266.0	18,816	9.7	26,356
2011	5	2,413	5/8-5/31	25	318.0	5,907	12.1	22	268.0	16,970	9.6	22,877
20-year Avg	12	2,702		155	120.7	5,177	10.5	127	76.6	15,218	9.5	20,395
1992-2011 Avg	12	2,697		140	129.5	5,561	10.8	113	81.8	16,080	9.5	21,641
2002-2011 Avg	7	2,071		53	211.3	5,669	10.8	32	153.6	14,924	9.4	20,593
2012	4	1,970	5/14-6/1	18	534.0	4,027	12.1	16	328.0	12,994	9.4	17,021

Note: Blank cells represent no data.

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

[b] Total vessels fished.

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

Appendix B2.–Exploitation of Togiak herring stock, 1992–2012.

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]		
1992	129,256	1,482	1,949	5,030	20,778		25,808	29,239	22.6%
1993	164,130	1,481	2,790	3,564	14,392		17,956	22,227	13.5%
1994	148,716	1,134	3,349	7,462	22,853		30,315	34,798	23.4%
1995	149,093	996	1,748	6,995	19,737		26,732	29,476	19.8%
1996	135,585	1,899	2,239	6,863	18,008		24,871	29,009	21.4%
1997	125,000		1,950	5,164	18,298	350	23,462	25,412	20.3%
1998	121,000		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		2,014	5,464	14,857	100	20,321	22,335	17.1%
2001	119,818		1,439	6,491	15,660	219	22,151	23,590	19.7%
2002	120,196	[f]	2,846	5,216	11,793	40	17,009	20,115	16.7%
2003	126,213	[f]	1,487	6,505	14,778	380	21,283	22,825	18.1%
2004	143,124		1,258	4,980	13,785	103	18,765	20,023	14.0%
2005	108,585		1,154	5,841	14,287	784	20,128	21,282	19.6%
2006	129,976		953	7,132	16,321	500	23,453	24,406	18.8%
2007	134,566		1,214	4,012	12,800	320	16,812	18,026	13.4%
2008	136,495		1,536	4,832	15,691		20,523	22,059	16.2%
2009	121,800		1,941	4,140	12,967		17,107	19,048	15.6%
2010	146,775		1,938	7,540	18,816		26,356	28,294	19.3%
2011	140,860		1,795	5,907	16,970		22,877	24,672	17.5%
20-year Avg	125,165	1,277	1,884	4,893	14,886	309	19,779	21,710	18.3%
1992-11 Avg	132,852	1,114	1,900	5,697	16,169	309	21,867	24,212	19.6%
2002-11 Avg	130,859	158	1,612	5,611	14,821	355	20,431	22,075	16.9%
2012	123,745		1,807	4,027	12,994		17,021	18,828	15.2%

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] Aerial survey estimated waste.

[e] Does not include waste.

[f] Less than 4 permit holders involved in fishery; records are confidential.

Appendix B3.–Age composition, by weight, of total inshore herring run, Togiak District, 1992–2012.

Year	Age Composition (%) ≤ 4	5	6	7	8	≥ 9	Total Run (short tons) [a]
1992[b]	10.0	20.0	1.0	1.0	15.0	53.0	156,957
1993	[c]	6.0	23.0	1.0	1.0	67.0	193,847
1994	[c]	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	[d]
1996	[d]	3.0	5.0	7.0	21.0	64.0	[d]
1997	7.0	5.0	12.0	11.0	10.0	55.0	144,887
1998	[c]	4.0	5.0	10.0	11.0	70.0	[d]
1999	[c]	1.0	13.0	9.0	12.0	65.0	157,028
2000	[c]	1.0	2.0	17.0	16.0	63.0	[d]
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	[d]
2003	[c]	3.0	37.0	25.0	4.0	31.0	[d]
2004	[c]	[c]	3.8	43.7	24.6	27.5	[d]
2005	[c]	[c]	0.8	11.0	41.4	46.4	156,727
2006	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	6.2	9.0	14.6	15.5	8.1	46.5	136,495
2009	9.4	14.7	14.5	14.9	12.2	34.0	142,133
2010	1.4	16.1	18.1	13.2	13.2	38.3	135,214
2011	[c]	4.0	25.3	21.7	15.7	33.3	[d]
2012	0.5	6.6	16.9	35.8	17.6	22.7	167,738

Note: Blank cells represent no data.

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

[b] Age composition is weighted by aerial survey data and weight at age.

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

[d] Age contribution of the commercial purse seine harvest (by weight) was used to represent the total run. Aerial surveys to determine abundance were hampered by poor weather conditions preventing estimation of total biomass estimate.

Appendix B4.–Aerial survey estimates of herring biomass (in tons) and spawn deposition (in miles), Togiak District, 1992–2012.

Year	Preseason Forecast [a]	Biomass Estimate	Spawn Estimate
1992	60,214	156,957	97
1993	148,786	193,847	53
1994	142,497	185,412	72
1995	149,093	149,093 [b]	59
1996	135,585	135,585 [b]	73
1997	125,000	144,887	59
1998	121,000	121,000 [b]	33
1999	90,000	157,028	56
2000	130,904	130,904 [b]	46
2001	119,818	115,155 [b]	57
2002	120,196	120,196 [b]	32
2003	126,213	126,213 [b]	95
2004	143,124	143,124 [b]	36
2005	96,029	156,727	28
2006	129,976	176,288	18
2007	134,566	134,221	19
2008	134,516	136,495	49
2009	121,800	142,133	15
2010	146,775	135,214	8
2011	140,860	140,860 [b]	36
20-year Avg	125,848	145,067	47
1992-01 Avg	122,290	148,987	60
2002-11 Avg	129,406	141,147	34
2012	123,745	167,738	31

[a] 1993–2012 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 for exploitation rate determination.

Appendix B5.–Exvessel value of the commercial herring and spawn-on-kelp harvest, in thousands of dollars, Togiak District, 1992–2012.

	Herring			
Year	Sac Roe	Food/Bait	Spawn-on-Kelp	Total
1992	7,452	85	110	7,647
1993	5,268	3	268	5,539
1994	9,329	0	212	9,541
1995	22,235	0	362	22,597
1996	17,658	1	511	18,170
1997	5,340	57	[a]	4,306
1998	5,352	0	[a]	3,986
1999	5,511	1,305	315	6,526
2000	3,718	0	[a]	4,000
2001	3,283	0	[a]	3,090
2002	2,264	228	[b]	1,900
2003	2,664	200	[b]	2,914
2004	2,077	582	[a]	2,659
2005	3,308	0	[a]	3,308
2006	3,168	0	[a]	3,168
2007	2,254	0	[a]	2,254
2008	2,748	0	[a]	2,748
2009	2,803	0	[a]	2,803
2010	3,481	0	[a]	3,481
2011	2,555	0	[a]	2,555
20-year Avg	6,435	93	231	6,564
1992-11 Avg	5,650	118	248	5,861
2002-11 Avg	2,805	101	35	2,833
2012	2,611	0	[a]	2,611

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 permit holders involved in fishery; records are confidential.

Appendix B6.–Guideline and actual harvests of sac roe herring (tons) and spawn-on-kelp (pounds), Togiak District, 1992–2012.

	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]
1992	5,662	5,030	-11	16,985	20,778	22	350,000	363,600	4
1993	6,570	3,564	-46	19,709	14,392	-27	350,000	383,000	9
1994	6,277	7,462	19	18,832	22,853	21	350,000	308,400	-12
1995	6,582	6,995	6	19,747	19,737	0	350,000	281,600	-20
1996	5,956	6,863	15	17,868	18,008	1	350,000	455,800	30
1997	5,464	5,164	-5	16,391	18,593	13	350,000	[d]	
1998	5,280	5,952	13	15,840	16,824	6	350,000	[d]	
1999	6,914	4,858	-30	20,741	14,368	-31	350,000	419,563	20
2000	5,738	5,464	-5	17,215	14,957	-13	350,000	[d]	
2001	6,268	6,491	4	14,624	15,879	9	350,000	[d]	
2002	6,288	5,216	-17	14,673	11,833	-19	350,000	[e]	-81
2003	6,624	6,505	-2	15,457	15,158	-2	350,000	[e]	-96
2004	7,568	4,980	-34	17,658	13,888	-21	350,000	[d]	
2005	5,667	5,841	3	13,224	15,071	14	350,000	[d]	
2006	7,059	7,132	1	16,471	16,821	2	350,000	[d]	
2007	7,090	4,012	-43	16,544	13,120	-21	350,000	[d]	
2008	6,864	4,832	-30	16,017	15,602	-3	350,000	[d]	
2009	6,378	4,167	-35	14,882	12,404	-17	350,000	[d]	
2010	7,772	7,540	-3	18,134	18,816	4	350,000	[d]	
2011	7,442	5,907	-21	17,364	16,970	-2	350,000	[d]	
20-year Avg	6,473	5,699	-11	16,919	16,304	-3	350,000	286,705	-18
1992-01 Avg	6,071	5,784	-4	17,795	17,639	0	350,000	368,661	5
2002-11 Avg	6,875	5,613	-18	16,042	14,968	-6	350,000	40,839	-88
2012	6,487	4,027	-38	15,135	12,994	-14	350,000	[d]	

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

[b] Includes deadloss and test fish harvest.

[c] Actual minus guideline divided by guideline multiplied by 100.

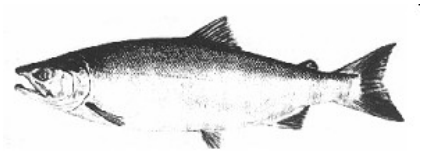
[d] No fishery conducted.

[e] Less than 4 permit holders involved in fishery; records are confidential.

APPENDIX C. 2012 BRISTOL BAY SALMON OUTLOOK

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

Cora Campbell, Commissioner
Jeff Regnart, Director



Slim Morstad, Naknek-Kvichak Manager
Paul Salomone, Egegik and Ugashik Manager
Tim Sands, Nushagak Manager
Matt Jones, Togiak Manager

King Salmon Office
P.O. Box 37 King Salmon, AK 99613
Ph: (907) 246-3341 Fax: 246-3309
Dillingham Office
P.O. Box 230 Dillingham, AK 99576
Ph: (907) 842-5227 Fax: 842-5937
Date Issued: 04/03/2012
Time: 1:00 p.m.

BRISTOL BAY
2012 OUTLOOK FOR COMMERCIAL SALMON FISHING

INTRODUCTION

This document is provided as a guide to fishermen, processors, and the public. The intent of this document is to provide the reader with general information regarding the 2012 Bristol Bay salmon season. Included is a short narrative regarding general framework for management of each of the five major districts, the 2012 salmon forecast, and a brief summary of regulation changes adopted by the Alaska Board of Fisheries (BOF) in March 2012.

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

The blue and green permit district registration cards will be available at the Anchorage, King Salmon, and Dillingham offices beginning May 1. In addition, PDF files of blue and green district registration cards are posted on the Bristol Bay homepage and can be printed, completed, mailed to the address on the printout, or submitted to Anchorage, King Salmon, or Dillingham office personnel. Permit holders

-continued-

fishing dual must register with the Department prior to fishing, but do not have to declare a district prior to June 25. Registration can be done online or in person at the King Salmon or Dillingham Fish and Game offices. During the 2012 season, catch, escapement, and announcements will be available at the same site. (http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareabristolbay.salmon)

At the March 2012 BOF meeting a proposal to allow dual drift registration (D boats) and drift district registration (blue cards) online was adopted. A permit holder or authorized agent can drop blue cards off in person at the Dillingham or King Salmon ADF&G office during open hours OR they can now register online.

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

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

Alaska Wildlife Troopers – Summer 2012 Outlook – Bristol Bay

Enforcement Priorities:

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

Regulation changes/concerns:

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

- Definition of the outer SW corner of the Naknek Section. This is of no concern to AWT, as this point was already being used to form the southern Naknek Section line per ADF&G emergency orders.
- Allowing a set net permit holder to hold two permits and fish dual gear will not affect enforcement strategies. If a dual permit holder has one set of gear in violation, they will receive 1 citation; with a second set of gear in violation they will receive 2 citations as if it were 2 different permit holders.
- Proposal 42 allows more potential opportunity to fish in the Wood River SHA. AWT will continue aggressive enforcement of regulations pertaining to minimum distances between gear, fishery boundary lines and length/depth of nets.
- Tow Lines – Commercial fishermen are advised that if any portion of fishing gear, including the vessel, is outside the open fishing district; Alaska Wildlife Troopers have grounds to take enforcement action. To maintain a constant and fair application of these

-continued-

rules, it will therefore NOT be acceptable for a vessel to be outside of an open fishing district attached via a length of tow line to a net that is inside a district. If a vessel is 100 feet over the line towing a net that is in open waters, that vessel is still commercial fishing in closed waters and is subject to enforcement action. AWT has determined this is the best way to maintain equal and fair fishing opportunity for all vessels fishing near the district boundary lines and prevents a select group of vessels from preventing others from setting out nets along a boundary line. If there are any questions about this issue, fishermen are encouraged to contact AWT offices in King Salmon or Dillingham.

SALMON OUTLOOKS

BAYWIDE

The forecasted Bristol Bay sockeye salmon run for 2012 is approximately 32.3 million fish. Based on the forecast, approximately 21.7 million fish are potentially available for commercial harvest (Table 1). Due to the projected surplus, fishermen should expect significant amounts of fishing time. However, run timing will be the key factor as to when fishing will occur. The department manages fisheries based on inseason information regarding abundance. The inseason management approach uses a suite of tools to provide information on abundance in each district as each run develops and that information is used by the department to determine fishing opportunity.

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

NAKNEK/KVICHAK DISTRICT

An inshore run of approximately 15.0 million sockeye salmon is expected for the Naknek/Kvichak District in 2012. Based on the forecast, the projected harvest in the Naknek/Kvichak District is approximately 9.0 million sockeye salmon; 3.2 million from the Kvichak River, 900,000 from the Alagnak River and 4.9 million from the Naknek River. The 2012 Kvichak River escapement goal will be 3.4 million. If the run is greater than the forecast, the **inseason** point goal will be adjusted to reflect the actual inseason total run. The Naknek River escapement goal range is 800,000 to 1.4 million. Sockeye salmon returning to the Naknek/Kvichak District are predicted to be 40% age-1.3, 23% age-1.2, 28% age-2.2, and 9% age-2.3 fish.

To begin the season, the Naknek Section only will be open to drift gillnet gear, and for set gillnet gear both the Naknek and Kvichak Sections will be open beginning June 4. 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

-continued-

9:00 a.m. Monday, June 4 and ending 9:00 a.m. Friday, June 22. Permit holders participating in the Naknek/Kvichak District salmon fishery should be advised that once sufficient run strength appears in the district they may be put on short notice.

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

With limited information and low abundance over the past 5 years, special attention will be given to Chinook salmon run strength and effort levels. A mesh size restriction of 5.5 inches or less will be in effect beginning 9:00 a.m. Monday, June 4 until 9:00 a.m. Friday, July 20, to help in the conservation of Chinook salmon.

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

EGEGIK DISTRICT

A forecasted run of approximately 6.7 million sockeye salmon is expected for the Egegik River in 2012. The escapement goal range is 800,000 to 1.4 million sockeye. Based on the forecast, the expected surplus potentially available for harvest is approximately 5.4 million fish. Approximately 43% of the run is expected to be age-2.2 fish, followed by age-2.3 (32%), age-1.3 (17%) and age 1.2 (8%).

The proportion of harvest for set and drift gillnets (during the allocation period) in 2011 was approximately 17% and 83% respectively; the sockeye salmon allocation plan specifies 14% and 86%. In 2012, separate gear openings and extensions will be used to adjust harvest in an attempt to achieve allocation percentages. At the January 2001 BOF meeting, a regulation was adopted that directs the department to avoid "to the extent practicable", continuous fishing with set gillnet gear in the Egegik District. Therefore, set gillnet fishermen in Egegik should expect breaks in fishing.

Based on the Kvichak River sockeye forecast, fishing will begin in the full Egegik District. The season will start with a 3 day per week schedule that will be in effect through June 15. The primary reason for returning to the 3 day per week schedule is to provide for Chinook salmon escapement. By emergency order, commercial fishing will be allowed in the Egegik District from 9:00 a.m. Monday, until 9:00 a.m. Wednesday and from 9:00 a.m. Thursday until 9:00 a.m. Friday. This schedule will be in effect beginning 9:00 a.m. Monday June 4 through 9:00 a.m. Friday, June 15. After June 15, fishing will be scheduled according to sockeye salmon run strength. As in previous years, some openings could occur on short notice. Periods will be adjusted to allocate harvest between drift and set gillnet gear groups.

The 2008 parent-year escapement for coho salmon was assessed using aerial surveys and produced an index count of 6,100 coho, but weather conditions precluded a complete survey.

-continued-

The commercial harvest in 2008 was approximately 29,700 coho, close to the recent 20-year average of 30,000. In 2012, 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 at (907) 267-2229 (Anchorage) or 246-3341 (King Salmon after May 31).

UGASHIK DISTRICT

The forecasted Ugashik River sockeye salmon run in 2012 is 3.1 million fish. The escapement goal range is 500,000 to 1.2 million sockeye salmon. Based on the forecast, approximately 2.1 million fish are potentially available for harvest. Approximately 36% of the run is expected to be age-2.2 fish, 28% age-1.3, 20% age-2.3, and 17% age-1.2fish.

The allocation of the sockeye salmon harvest for set and drift gillnets (during the allocation period) in 2011 was approximately 13% and 87% respectively; the Ugashik District allocation plan specifies 10% and 90%. As in previous years separate gear openings and adjusting length of commercial periods will be used to address allocation between gear groups in 2012. With limited information and low abundance over the past 5 years, special attention will be given to Chinook salmon run strength and effort levels. A mesh size restriction of 5.5 inches or less will be in effect beginning Friday, June 1 until 9:00 a.m. Friday, July 22, to help in the conservation of Chinook salmon.

Beginning 9:00 a.m. Monday June 4, commercial fishing in the Ugashik District will be allowed on a 9:00 a.m. Monday to 9:00 a.m. Friday schedule through 9:00 a.m. Friday, June 15. With an expected run to the Kvichak that exceeds a 40% exploitation rate above the minimum escapement goal stipulated in regulation, fishing time after June 15 will be allowed under E.O. 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 2012.

Parent-year coho salmon escapements in the Ugashik District were assessed by aerial surveys. The escapement index for Ugashik coho in 2008 was approximately 6,200. However, significant portions of the survey were done under conditions that prohibited a complete assessment of coho streams. Coho harvest in 2008 was 1,954. Recent effort for coho salmon within the Ugashik District has been low. Directed commercial openings for coho salmon in 2012 will depend on fishery performance and run strength indicators.

Area T permit holders who fish the Cinder River and Port Heiden sections prior to July 1 and deliver their catch in the Ugashik District are reminded to report the section of catch on the appropriate fish tickets. Only the inner Port Heiden Section and the Cinder River Lagoon have fishing periods available to Area T permit holders in June, the outside waters of the Cinder River section are open after August 1. In addition, permit holders fishing Ugashik after August 1 should be aware of a change to the fall schedule adopted during the 2009 Alaska Board of Fisheries meeting. Beginning August 1, the fall schedule will be 9:00 a.m. Thursday to 9:00 a.m. Monday. There is a closed waters area southwest of Cape Menshikof as defined by 5 AAC

-continued-

09.350(1). Permit holders interested in test fishing in the Ugashik District should contact Paul Salomone at (907) 267-2229 (Anchorage) or 246-3341 (King Salmon after May 31).

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. Beginning 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 for the Wood and Nushagak Rivers for 2012, 6.5 million and 1.6 million respectively, is accurate, the likelihood of fishing in the WRSHA is increased.

In 2010, the Chinook salmon escapement was the lowest since sonar counting began in 1980 and the sport fishery on the Nushagak River was completely closed while subsistence fishing was restricted. In 2011, escapement was below desired levels all season with no directed Chinook salmon commercial openings. 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. Based on the poor performance of Chinook salmon statewide, and poor runs to the Nushagak in 2010 and 2011, a Chinook salmon directed opening is unlikely. However, if inseason assessment of escapement past the Nushagak sonar indicates a larger than expected run, a directed Chinook salmon opening could occur.

The 2012 forecast for sockeye salmon in the Nushagak District is 6.76 million fish, 1.88 million for escapement and the remaining 4.65 million for harvest. The total run by river system is: Wood River 4.64 million (escapement goal range of 700,000 to 1.5 million), Igushik River 0.72 million (escapement goal range of 150,000 to 300,000), and the Nushagak River 1.4 million (escapement goal range of 340,000 to 760,000). Approximately 24% of the forecasted run is age-1.2 sockeye salmon, < 4% age-2.2, 70% age-1.3, and < 3% age-2.3 fish.

Management strategies for 2012 include: 1) directed Chinook salmon openings only if warranted by escapement. 2) Igushik Section sockeye salmon openings are likely beginning in the third week of June and will likely be set gillnet only until escapement or strong harvests dictate otherwise, and 3) begin fishing in the regular district in late June with short openings. Openings will be scheduled based on sockeye salmon escapement levels in the Nushagak and Wood rivers. Mesh size will be limited to 5.5 inches or smaller unless Chinook salmon 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

-continued-

salmon stocks. Set gillnet fishing will begin in the Igushik Section when there is a market available. Initial openings will be 8 hours per day and additional time will be added if large harvests or escapement information indicate more time is warranted. Drift gillnet openings in the Igushik Section will be added as needed to control sockeye salmon escapement. Management will incorporate a readiness to respond with increasing 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.

There is no department forecast for coho or pink salmon runs to the Nushagak River. The department will switch to coho and pink salmon management around July 23 when sockeye salmon harvests decrease. The department will use subsistence information, aerial surveys and sport and commercial harvest information to determine what amount of fishing time is warranted for coho and pink salmon. We expect to start the season with a 5 day per week schedule with up to 8 hours fishing time per day. The mesh will be restricted to 4.75 inches or smaller several days per week to protect coho salmon. There will also be a day or two each week with no mesh restriction. The department will prioritize having openings occur during daylight hours with openings scheduled to start before the high tide. Although we expect to start the season with a 5 day per week fishing schedule, this is not a guarantee that this schedule will continue for the remainder of the season. The department may adjust fishing time as warranted by escapement and other 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 Nushagak District should contact Tim Sands in Dillingham at (907) 842-5227.

TOGIAK DISTRICT

Commercial fisheries in the Togiak District are managed under the Togiak District Salmon Management Plan (TDSMP). The plan restricts permit holders from fishing in the Togiak District until July 27 if they have fished in any other district in Bristol Bay, and conversely, restricts permit holders from fishing in any other district until July 27 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 varies considerably, but adequate Chinook escapement in most years 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 anticipated Chinook salmon run strength, reduction to the weekly fishing schedule is again likely for the 2012 season. These reductions will likely limit commercial fishing to between 48 and 72 hours of fishing time during each of the last two weeks of June.

The 2012 inshore run of sockeye salmon to the Togiak River is forecast at 780,000 fish. The TDSMP calls for sockeye salmon escapement of 150,000 fish past the counting towers located at the outlet of Togiak Lake. Based on the forecast, approximately 570,000 sockeye salmon will

-continued-

potentially be available for commercial harvest. Approximately 23% of the run is expected to be 2-ocean fish and 64% is expected to be 3-ocean fish. The Kulukak Section weekly fishing schedule, reduced to 60 hours at the 2009 Board of Fisheries meeting, is unlikely to be further reduced in 2012.

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 conservative harvest strategy will be utilized due to the lack of information about the returning coho salmon run.

Table 1.-Forecast of total run, escapement, and harvest of sockeye salmon returning to Bristol Bay River systems in 2012.

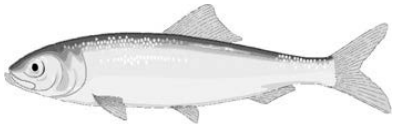
Millions of Sockeye Salmon

DISTRICT River	Total Run Forecast by Age Class 1.2	2.2	1.3	2.3	Total	Escapement	Total Harvest
NAKNEK-KVICHAK:							
Kvichak	1.72	3.17	1.52	0.43	6.84	3.42	3.19
Alagnak	0.48	0.20	1.13	0.09	1.90	0.95	0.89
Naknek	1.20	0.88	3.31	0.83	6.22	1.10	4.91
Total	**3.4**	**4.25**	**5.96**	**1.35**	**14.96**	**5.47**	**8.99**
EGEGIK	**0.57**	**2.89**	**1.14**	**2.12**	**6.72**	**1.10**	**5.39**
UGASHIK	**0.51**	**1.10**	**0.86**	**0.62**	**3.09**	**0.85**	**2.14**
NUSHAGAK							
Wood	1.30	0.17	3.09	0.08	4.64	1.10	3.38
Igushik	0.11	0.03	0.56	0.03	0.72	0.23	0.47
Nushagak	0.18	0.02	1.09	0.03	1.40	0.55	0.80
Total	**1.59**	**0.22**	**4.74**	**0.14**	**6.76**	**1.88**	**4.65**
TOGIAK	**0.16**	**0.04**	**0.53**	**0.04**	**0.78**	**0.18**	**0.57**
BRISTOL BAY	**6.23**	**8.5**	**13.23**	**4.27**	**32.31**	**9.48**	**21.74**

APPENDIX D. 2012 TOGIAK HERRING OUTLOOK

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

Cora Campbell, Commissioner
Jeff Regnart, Director



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

Dillingham Area Office
546 Kenny Wren Road
Dillingham, AK, 99576
Date Issued: April 1, 2012
Time: 12:00 p.m.

2012 TOGIAK HERRING FISHERY INFORMATION

This notice is intended to provide information to participants in the 2012 Togiak herring fishery. The 2012 herring biomass in Togiak District is forecast to be 123,745 tons, a slight decrease from 2011. The 2012 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 52% of the projected herring biomass, with ages -6 and under making up another 19%. Ages 9-11 are expected to make up 23% of the spawning run, while the remaining 6% 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 323 grams.

The Togiak herring fishery occurs on fish at or about the time of spawning. The occurrence and timing of spawning is related to water temperatures experienced by herring on the spawning grounds and also appears related to sea surface temperature and sea ice trends across the southeastern Bering Sea in the weeks prior to spawning. We track the average sea surface temperature reported at Unalaska between 24 February and 16 March as we consider this a useful index of conditions encountered by maturing herring ultimately bound for spawning grounds in and around the Togiak District. The 1995-2011 historical average temperature for that date range is 3.3^{o} C whereas the average temperature experienced during 2012 has been a half a degree colder at 2.8^{o} C. This is similar to 2007 and 2010 which experienced water temperatures that were -0.6^{o} C and -0.8^{o} C colder than normal and had first harvests on 10 and 11 May (Table 1). We anticipate the 2012 fishery to have similar timing. Additional evidence of a later than normal run can be seen in the greater than normal sea ice extent experienced in the Bering Sea this winter.

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 123,745 tons, up to 24,749 tons of herring will be available for harvest in 2012. Harvest allocation, in accordance with the BBHMP, will be as follows:

-continued-

Fishery	Harvest Allocation
Spawn-on-Kelp	1,500 tons
Dutch Harbor Food and Bait	1,627 tons
Togiak Sac Roe	21,622 tons
Purse Seine (70%)	15,135 tons
Gillnet (30%)	6,487 tons

SAC ROE FISHERY

The management strategy for the Togiak herring fishery is designed to provide for maximum sustained yield, while affording the greatest economic benefit to fishermen and processors.

In 2012, 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 2012 season. Daily freezing capacity is expected to be less than last year's capacity and will probably be between 2,000 and 2,100 tons per day. For the last few seasons, the department has opened the herring fishery as soon as threshold biomass has been documented and anticipates using this strategy again in 2012 to maximize fishing time. The department believes this strategy allows 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. Indications are this will be the case again in 2012 and 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.

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 6,487 tons, while maintaining the specified 70/30 purse seine/gillnet ratio. Product quality will be a priority throughout the gillnet fishery.

In 2012, 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. As in 2011, the plan is to open the gillnet area to fishing when threshold biomass is present. Individual companies and fishermen can organize their own test fishing scheme once the area is open and make decisions on when to begin fishing for production. Until it is determined that marketable quality fish are present, participants should test cautiously with a small portion of gear.

-continued-

At the December 2009 Alaska Board of Fisheries (BOF) meeting, the Egg Island Section was formally approved and the coordinates are now in regulation. Additionally, the legal compliment of gear was increased to 100 fathoms. Although 100 fathoms of gear has been allowed for the past several years, it was done by Emergency Order. It is now in regulation, so permit holders do not need to wait for an Emergency Order.

ADF&G OPERATIONS 2012

Beginning in late April or early May, current fishery information will be available by calling the telephone recorder in Dillingham at (907) 842-5226. Recordings will be updated regularly throughout the season as information becomes available. The department will conduct regular aerial surveys of Togiak District beginning in late April or early May, depending on weather conditions. The department will not relocate to a field office in Togiak for 2012. The department will monitor marine VHF channel 7 from Dillingham and be available at the phone number listed at the top of this document. Fishing announcements and regular fishery updates will be communicated directly to each processor, published on the web and distributed by fax and email; contact the Dillingham office if you would like to be added to these distribution lists. Harvest and fishery opening information will be available with some delay at the Commercial Fisheries website: http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareabristolbay.herring

Table 1. Dates of observed 1st harvest with sea surface temperatures experienced between 24 February and 16 March at Unalaska, AK (current year average minus historical average).

Year	1st Harvest	Sea Surface Temp difference (^{o} C)
2002	3 May	-0.23
2003	25 Apr	1.04
2004	29 Apr	0.54
2005	30 Apr	0.84
2006	12 May	0.20
2007	10 May	-0.79
2008	16 May	-1.02
2009	16 May	0.33
2010	11 May	-0.61
2011	8 May	0.83
10-yr Avg (2002-2011)	7 May	0.11