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Genetic Stock Composition of the Commercial Harvest of Sockeye Salmon in Kodiak Management Area, 2014–2016

by

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

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Weights and measures (metric)

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

Weights and measures (English)

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

Time and temperature

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

Physics and chemistry

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

General

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

Mathematics, statistics

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

FISHERY MANUSCRIPT SERIES NO. 16-10

GENETIC STOCK COMPOSITION OF THE COMMERCIAL HARVEST OF SOCKEYE SALMON IN KODIAK MANAGEMENT AREA, 2014–2016

by

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ABSTRACT

The commercial salmon fishery in the Kodiak Management Area (KMA), Westward Region, is regulated by 10 board-approved management plans intended to preserve traditional harvest opportunities while maintaining the biological integrity of KMA (*local*) salmon stocks and alleviating allocative concerns. Precise, accurate estimates of stock-specific harvests of sockeye salmon (*Oncorhynchus nerka*) are lacking for commercial fisheries in KMA. Such information would be useful for reconstructing runs, building accurate brood tables to define escapement goals, and refining management by identifying spatial and temporal harvest patterns of *local* and *nonlocal* stocks. Genetic samples were collected for mixed stock analysis (MSA) to estimate the stock compositions of sockeye salmon harvests in select KMA commercial salmon fisheries from June through August from 2014 to 2016. A total of 45,165 sockeye salmon tissue samples were collected from 6 sampling areas in KMA. Of these, 18,558 samples were ultimately genotyped to represent 47 spatiotemporal strata. Stock compositions were estimated with MSA for all strata using a comprehensive, coastwide sockeye salmon baseline with important *local* stocks defined as separate reporting groups. *Local*, Kodiak sockeye salmon contributed 88%, 58%, and 58% of the annual KMA harvests sampled for MSA during 2014–2016 (excluding harvests after August 29, or outside of the areas sampled). During this period, there was significant, *nonlocal* harvest of Cook Inlet sockeye salmon in all 3 years, containing 8%, 37%, and 30% of the sampled KMA harvest, as well as harvest of Chignik sockeye salmon in 2016, containing 10% of the sampled KMA harvest. These results provide the most comprehensive estimates of stock composition and stock-specific harvests of sockeye salmon in KMA, supplement previous studies, and should inform fishery management, regulatory, and policy decision makers.

Key words: Kodiak, KMA, sockeye salmon, *Oncorhynchus nerka*, mixed stock analysis, MSA, genetic baseline, SNP

INTRODUCTION

DESCRIPTION OF KODIAK MANAGEMENT AREA COMMERCIAL SOCKEYE SALMON FISHERIES

The Kodiak Management Area (KMA) includes the state waters of the western Gulf of Alaska surrounding the Kodiak Archipelago and that portion of the Alaska Peninsula bordering the Shelikof Strait between Cape Douglas and Kilokak Rocks (Figure 1).

Pacific salmon migration or spawning has been documented in approximately 900 streams within the KMA (Johnson and Litchfield 2015), while 61 streams have spawning populations of sockeye salmon *Oncorhynchus nerka* (Jackson et al. 2015). Directed sockeye salmon fisheries occur in KMA but sockeye salmon are also incidentally harvested in directed pink *O. gorbuscha*, coho *O. kisutch*, and chum salmon *O. keta* commercial fisheries. While commercial fisheries management is based on the run timing of 4 targeted salmon species, a great amount of overlap in run timing exists. In general, early sockeye salmon fisheries occur from June 1 to July 15, pink and chum salmon fisheries extend from July 6 to September 5, late sockeye salmon fisheries extend from July 15 to September 15, and coho salmon fisheries extend from August 1 to September 15.

There are 10 salmon management plans that direct Alaska Department of Fish and Game (ADF&G) management activities for specific areas and time periods of KMA (Fuerst and Jackson 2016). Management of major sockeye salmon runs are based on escapement, and utilize daily escapement information from salmon counting weirs. The 4 largest systems with weirs are Karluk River, Ayakulik River, South Olga Lakes (Upper Station), and Dog Salmon River. Five smaller systems with weirs are Afognak Lake, Saltery Lake, Pasagshak River, Buskin River and Pauls Lake. On the Dog Salmon River, a fish pass is also operated upstream near the outlet of Frazer Lake. Inseason aerial survey counts are utilized for smaller streams. There are also 5 designated Special Harvest Areas (SHAs; 5 AAC 40.085) and 1 Terminal Harvest Area (THA; 5

AAC 18.378) in the KMA to provide harvest opportunity of enhanced salmon runs (Fuerst and Jackson 2016); no management actions for enhanced stocks occur outside of these areas.

KMA fisheries are managed with data that are compiled and evaluated daily. These data include escapement information from weir counts and/or aerial, boat, and foot surveys, and total catch and fishery performance trends over time.

HISTORY OF STOCK COMPOSITION ESTIMATES IN KMA

Beginning in the late 1970s the Alaska Board of Fisheries established numerous management plans defining how different portions of KMA will be managed (e.g., Cape Igvak, Alitak Bay, and Westside). Central to these plans was maintaining traditional fishing opportunities and allocations among gear types and also promoting sustainable fisheries. Inherent to these plans was the recognition that many of the fisheries in this area harvest sockeye salmon stocks originating from not only within KMA (*local*) but also neighboring management areas (*nonlocal*). Quantifying stock-specific harvests and characterizing spatiotemporal migration trends of *local* and *nonlocal* sockeye salmon in these fisheries could improve run reconstructions, brood tables, and refine management of KMA.

Stock-specific estimates of sockeye salmon harvest for major commercial fishing areas were historically based on scale pattern analysis, age-marker analysis, historical averages of the latter (Foster 2011), and tagging studies (Rich and Morton 1930; Bower 1941; Bevan 1959; Nicholson 1978; Tyler et al. 1986). Estimating stock-specific harvests using tagging or scale pattern analysis methods is time consuming, expensive, and imprecise, especially in the presence of a multitude of stock groups. Detailed descriptions of the current run reconstruction methods for all KMA sockeye salmon systems is found in (Wattum 2016).

CURRENT RESEARCH PROJECT

The principal objective of this project was to sample the major sockeye salmon commercial fisheries in marine waters of KMA from June through the end of August and use genetic mixed stock analysis (MSA) to estimate stock compositions and stock-specific harvest. Fisheries biologists have used MSA as a tool to estimate stock compositions of mixtures of sockeye salmon of unknown origin since the 1980s throughout their range (e.g., Grant et al. 1980; Wood et al. 1989; Seeb et al. 2000; Beacham et al. 2004; Barclay et al. 2010; Dann et al. 2012c, among others). The Western Alaska Salmon Stock Identification Program (WASSIP) sampled catches from 2006 to 2009 to estimate stocks of origin of sockeye salmon caught by inshore commercial salmon fisheries of western Alaska (Eggers et al. 2011). Stock compositions and stock-specific harvests and harvest rates were reported in 2012 (Dann et al. 2012c; Habicht et al. 2012a). However, fisheries east of the Chignik Management Area were not analyzed as part of WASSIP. To the north of this area, the Gene Conservation Laboratory has conducted MSA of sockeye salmon harvests in the Cook Inlet Management Area since 2005, but due to the terminal nature of the fishery the baseline does not report stock of origin for *nonlocal* stocks, outside of Cook Inlet (Barclay et al. 2013).

The experimental design for this project was described in 2 Operational Plans (Foster and Dann 2014b; Foster and Dann 2015). The genetic baseline for this project was described in a baseline report (Shedd et al. 2016a) and subsequent addendum (Shedd et al. 2016b). There were 14 total reporting groups in this study: 1) West of Chignik, 2) Black Lake, 3) Chignik Lake, 4) Upper Station/Akalura, 5) Ayakulik/Frazer, 6) Karluk, 7) Uganik, 8) Northwest Kodiak, 9) Afognak,

10) Eastside Kodiak, 11) Saltery (includes Spiridon), 12) Cook Inlet, 13) Prince William Sound, and 14) South of Cape Suckling. To aid in the interpretation of results, stock composition estimates were reported with 2 levels of reporting groups, regional and subregional. The 6 regional reporting groups were 1) West of Chignik, 2) Chignik, 3) Kodiak, 4) Cook Inlet, 5) Prince William Sound, and 6) South of Cape Suckling. The Chignik regional reporting group summarized the combined estimates from the Black Lake and Chignik Lake subregional reporting groups. The Kodiak regional reporting group summarized the combined estimates from the Upper Station/Akalura, Ayakulik/Frazer, Karluk, Uganik, Northwest Kodiak, Afognak, Eastside Kodiak, and Saltery subregional reporting groups. The final baseline contains 65,332 individuals from 762 collections representing 473 populations in 14 reporting groups.

Sampling areas were selected that are 1) actively managed, by regulation, for discrete sockeye salmon stock(s); and 2) used in postseason run reconstructions for a discrete sockeye salmon stock. Designated sampling areas encompass districts or partial districts as outlined in the sampling area descriptions below, and are based on geographic location, harvest magnitude, and management, with consideration given to port delivery location. Overall, 3 temporal strata were chosen (early, middle, and late). The early stratum (~June) coincides with commercial fisheries targeting early-run sockeye salmon. The middle stratum (~July) coincides with commercial fisheries targeting early-run sockeye and/or pink and chum salmon. The late stratum (~August) coincides with the commercial fisheries targeting late-run sockeye and/or pink and chum salmon (Table 1). Post-August sockeye salmon harvest in the KMA is assumed to be *local*, and is primarily composed of late-run Karluk and Upper Station group fish. This is consistent with the assumptions in WASSIP and stock apportionment in KMA run reconstructions (Wattum and Foster 2015; Wattum 2016). The 20-year average (1994 to 2013) post-August sockeye salmon harvest in the KMA was roughly 100,000 fish.

Sampling Area Descriptions

Sampling areas defined in this project were: Uganik-Kupreanof, Uyak, Karluk-Sturgeon, Ayakulik-Halibut Bay, Alitak, and Igvak (Figure 1). Statistical areas represented within each sampling area are in Table 1. All sampling areas were targeted for sampling during the early, middle, and late strata, with the exception of Igvak, (only early and middle).

Uganik-Kupreanof (253-11, 12, 13, 14, 31, 32, 33, 34, 35)

The Uganik-Kupreanof sampling area is located within the Central Section of the Northwest Kodiak District (Figure 2) and includes statistical areas 253-11 to 253-35. Uganik-Kupreanof sampling area includes the inshore waters of Uganik Bay, Viekoda Bay, and Kupreanof Strait, extending from Raspberry Cape to Cape Kuliuk. Both purse seine and set gillnet gear can be used in the majority of this sampling area.

As part of the Central Section of the Northwest Kodiak District of the KMA, management of the majority of the Uganik-Kupreanof sampling area is based on early-run sockeye salmon returning to Karluk, Ayakulik, and Olga Bay systems through June 15 and to Karluk from June 16 to July 5 during the early stratum (Fuerst and Jackson 2016). During the middle stratum, management is primarily based on pink salmon returning to systems in the Northwest Kodiak District (July 6 through August 15). During the late stratum, management is based on a combination of pink salmon returning to systems in the Northwest Kodiak District and late-run sockeye salmon returning to Karluk Lake.

Uyak (254-10, 20, 21, 30, 31, 40, 41)

The Uyak sampling area is located within the Central Section of the Northwest Kodiak District (Figure 3) and includes statistical areas 254-10 to 254-41. Uyak sampling area includes the inshore waters of Uyak Bay from Cape Kuliuk to Rocky Point. Both purse seine and set gillnet gear can be used in the majority of this sampling area. The Spiridon Bay Special Harvest Area (SBSHA; 254-50) is not part of this sampling area, as fish caught there are assumed to be 100% of Spiridon origin.

As part of the Central Section of the Northwest Kodiak District of the KMA, management of the Uyak sampling area is based on early-run sockeye salmon returning to Karluk, Ayakulik, and Olga Bay systems through June 15 and to Karluk from June 16 to July 5 (Fuerst and Jackson 2016) during the early stratum. During the middle stratum, management is primarily based on pink salmon returning to systems in the Northwest Kodiak District (July 6 through August 15). Management during the late stratum is based on a combination of pink salmon returning to systems in the Northwest Kodiak District, and late-run sockeye salmon returning to Karluk Lake.

Karluk-Sturgeon (255-10, 20; 256-40)

The Karluk-Sturgeon sampling area is located within Southwest Kodiak District and includes Inner and Outer Karluk and Sturgeon sections (Figure 4) and statistical areas 255-10, 255-20, and 256-40. The Karluk-Sturgeon sampling area extends from Rocky Point to Sturgeon Head. Only purse seine gear can be used in this sampling area and Inner Karluk Section is terminal to Karluk River.

Management of the Karluk-Sturgeon sampling area is based primarily on early-run sockeye salmon returning to Karluk (June 1 to July 15) during the early stratum. The Sturgeon portion of this sampling area may open (June 23 to July 15) based on Karluk and Ayakulik sockeye salmon and Sturgeon River chum salmon (Fuerst and Jackson 2016). The management during the middle stratum is based primarily on sockeye, chum, and/or pink salmon returning to Karluk. The Sturgeon portion of this sampling area may open (June 22 to July 15) based on Karluk and Ayakulik sockeye salmon and Sturgeon chum salmon. The management of the Karluk-Sturgeon sampling area during the late stratum is based primarily on late-run sockeye and/or pink salmon returning to Karluk.

Ayakulik-Halibut Bay (256-10, 15, 20, 25, 30)

The Ayakulik-Halibut Bay sampling area is located within Southwest Kodiak District includes the Inner and Outer Ayakulik and Halibut Bay sections (Figure 5) and statistical areas 256-10 to 256-30. The Ayakulik-Halibut Bay sampling area extends from Sturgeon Head to Low Cape. Only purse seine gear can be used in this district and Inner Ayakulik section is terminal to Ayakulik River.

Management of the Ayakulik-Halibut Bay sampling area is based primarily on early-run sockeye salmon returning to Ayakulik (June 1 to July 15) during the early stratum. The Halibut Bay portion of this sampling area may open (June 23 to July 15) based on Ayakulik and Karluk sockeye salmon and Sturgeon River chum salmon (Fuerst and Jackson 2016). The management during the middle stratum is based primarily on sockeye and pink salmon returning to Ayakulik. The Halibut Bay portion of this sampling area may open (June 23 to July 15) based on Ayakulik and Karluk sockeye salmon and Sturgeon River chum salmon. During the late stratum,

management is based primarily on late-run sockeye and pink salmon returning to Ayakulik and late-run sockeye returning to Karluk.

Alitak (257-10, 20, 50, 60, 70)

The Alitak sampling area is located within the Alitak District (Figure 6) and includes the seine only areas of the Cape Alitak and Humpy-Deadman sections, including statistical areas 257-10, 257-20, and 257-50 to 257-70. The sampling area extends from Low Cape to Cape Trinity.

The management of the Alitak sampling area is based primarily on sockeye salmon returning to Frazer and Upper Station (June 1 to July 15; Fuerst and Jackson 2016) during the early stratum. During the middle stratum, management for the Cape Alitak Section is based primarily on sockeye salmon returning to Frazer and Upper Station or pink salmon returning to Frazer, and management for the Humpy-Deadman Section is based on pink and chum salmon returning to the Humpy-Deadman Section. During the late stratum, management for Cape Alitak is based primarily on sockeye salmon returning to Frazer and Upper Station, and management for the Humpy-Deadman Section is based on pink and chum salmon returning to the Humpy-Deadman Section.

Igvak (262-75, 80, 90, 95)

The Igvak sampling area is located within Mainland District and includes Cape Igvak Section (Figure 7) and statistical areas 262-75, 262-80, 262-90, and 262-95. The Igvak sampling area extends from Cape Aklek to Kilokak Rocks. Only purse seine gear can be used in this district.

The Cape Igvak fishery in the KMA is allocated 15% of the total Chignik-bound sockeye salmon harvest (5 AAC 18.360). By regulation, 90% of the sockeye salmon harvested in the Cape Igvak Section from June 1 to July 25 are considered to be of Chignik origin (5 AAC 18.360(d); Fuerst and Jackson 2016).

OBJECTIVES

The overall goal of this project is to provide information that will be useful for reconstructing runs, building accurate brood tables to define escapement goals, and refining management by identifying spatial and temporal harvest patterns of *local* and *nonlocal* stocks. To achieve this goal, this document has 4 objectives:

1. Describe sampling of genetic tissues from sockeye salmon caught from June through August in select commercial fisheries in the KMA, 2014–2016.
2. Describe subsampling of genetic tissues in proportion to catch within sampling areas and temporal strata.
3. Report MSA results of stock proportions and stock-specific harvests of sockeye salmon sampled from select commercial fisheries in the KMA, 2014–2016.
4. Characterize where stocks were harvested from select commercial fisheries in the KMA, 2014–2016.

DEFINITIONS

To reduce confusion associated with the methods, results, and interpretation of this study, basic definitions of commonly used genetic and salmon management terms are offered here.

Allele. Alternative form(s) of a given gene or DNA sequence.

Brood (year). All salmon in a stock spawned in a specific year.

Credibility Interval. In Bayesian statistics, a credibility interval is a posterior probability interval. A credibility interval differs from a confidence interval in frequentist statistics in that it is a statement of probability: i.e., a 90% credibility interval has a 90% chance of containing the true answer.

District. A portion of a body of water, areas of which may be open to commercial salmon fishing. Districts are subdivided into statistical areas and used to document the spatial origin of fishery harvests. Commercial fishing districts, subdistricts and sections in KMA commercial fishing areas are defined in statutes listed below under *Salmon administrative area*.

Escapement (or Spawning Abundance or Spawners). The annual estimated size of the spawning salmon stock—the quality of escapement may be determined not only by numbers of spawners, but also factors such as sex ratio, age composition, temporal entry into the system, and spatial distribution with the salmon spawning habitat (from 5 AAC 39.222(f)).

Genetic Marker. A genetic variant showing Mendelian inheritance, such as a DNA sequence that can be identified by a simple assay.

Genotype. The set of alleles for one or more loci for an individual.

Hardy-Weinberg Expectations (HWE). The genotype frequencies that would be expected from given allele frequencies assuming random mating, no mutation (the alleles do not change), no migration or emigration (no exchange of alleles between populations), infinitely large population size, and no selective pressure for or against any traits.

Harvest. The number of salmon or weight of salmon taken of a run from a specific stock.

Local. A salmon stock originating within the Kodiak Management Area.

Locus (Loci, plural). A fixed position or region on a chromosome that may contain more than 1 genetic marker.

Mixed Stock Analysis (MSA). A method using allele frequencies from populations and genotypes from mixture samples to estimate stock compositions of mixtures (also known as genetic stock identification or GSI).

Nonlocal. A salmon stock originating outside the Kodiak Management Area.

Polymerase Chain Reaction (PCR). A method to amplifiy a single or few copies of a locus across several orders of magnitude, generating millions of copies of the DNA.

Reporting Group. A group of populations in a genetic baseline to which portions of a mixture are allocated with mixed stock analyses; constructed based on a combination of stakeholder needs and genetic distinction.

Run. The total number of salmon in a stock surviving to adulthood and returning to the vicinity of the natal stream in any calendar year, composed of both the harvest of adult salmon plus the escapement; the annual run in any calendar year, except for pink salmon, is composed of several age classes of mature fish from the stock, derived from the spawning of a number of previous brood years (from 5 AAC 39.222(f)).

Salmon Administrative Area (Area). Geographic areas used to administer the registration of commercial salmon fishing permits (from 20 AAC 05.230). Commercial salmon fishing areas are designated by letter code and are defined by the following Alaska administrative code: Southeast Alaska (Area A; 5 AAC 33.100); Yakutat (Area D; 5 AAC 30.100); Prince William Sound (Area E; 5 AAC 24.100); Cook Inlet (Area H; 5 AAC 21.100); Kodiak (Area K; 5 AAC 18.100); Chignik (Area L; 5 AAC 15.100); Alaska Peninsula (Area M; 5 AAC 12.100, 5 AAC 09.100, and 5 AAC 11.101); Bristol Bay (Area T; 5 AAC 06.100); and Kuskokwim (Area W; 5 AAC 07.100). Districts and subdistricts within areas used to aid management are further defined by administrative code.

Salmon Stock. A locally interbreeding group of salmon that is distinguished by a distinct combination of genetic, phenotypic, life history, and habitat characteristics, or an aggregation of 2 or more interbreeding groups occurring in the same geographic area and managed as a unit (from 5 AAC 39.222(f)).

Single Nucleotide Polymorphism (SNP). DNA sequence variation occurring when a single nucleotide (A, T, C, or G) differs among individuals or within an individual between paired chromosomes.

METHODS

TISSUE SAMPLING

Catch samplers collected tissue samples for MSA at processing facilities located at the major KMA fish processing ports: Kodiak, Larsen Bay, and Alitak. The genetic tissue samples for laboratory analysis were selected from the available harvest samples postseason by subsampling within strata proportional to the daily catches of the respective strata. This ensures that the stock compositions estimated from the MSA analysis are representative of the catch in the strata. Sampling proportional to catch does come with caveats since it entails not only tracking daily harvest but projecting harvest throughout the stratum and oversampling to facilitate postseason subsampling. In postseason sample selection, some samples were excluded from analysis to most closely approximate the daily catch proportions of a stratum's harvest.

Sockeye salmon tissue samples (pelvic fin axillary processes from the left side of fish) were collected by using bulk sampling procedures. In these procedures, sampled tissues from each time and area stratum were placed together in a unique 125 ml or 250 ml polyethylene bottle containing ethanol. Samplers obtained fish ticket information before collecting samples to determine if the fish were exclusively harvested from the area and timeframe designated to be sampled. If fish ticket data were not available, the processing facility dock foreman or tender operator was interviewed. Once fish ticket information became available, the origin of the catch was confirmed.

SELECTING TISSUE SAMPLES FOR ANALYSIS

A subset of the total samples collected was selected for analysis for each spatiotemporal stratum to be representative of harvests among days within each stratum. The sample size goal for each stratum was 380. Samples were selected from days in proportion to the harvest that occurred on each day included in the stratum. If the proportional number of samples was not available on a given sample day, all available samples were used and additional samples were selected in

proportion from remaining sample days until the 380-sample goal was achieved. Samples used for analysis were randomly selected from sample bottles.

Sample selection followed predetermined temporal strata as defined in the Operational Plans (Foster and Dann 2014b; Foster and Dann 2015). However, strata were moved back 6–7 days in the selection of 2015 samples to better characterize harvests due to the late nature of sockeye salmon runs that year (Brenner et al. 2016).

LABORATORY ANALYSIS

Assaying Genotypes

We extracted genomic DNA from tissue samples using a NucleoSpin® 96 Tissue Kit by Macherey-Nagel (Düren, Germany).We screened 48 SNP markers (Table 7 in Shedd et al. 2016a) using 2 Fluidigm® 192.24 Dynamic Array™ Integrated Fluidic Circuits (IFCs), which each systematically combined up to 24 assays and 192 samples into 4,608 parallel reactions. The components were pressurized into the IFC using the IFC Controller RX (Fluidigm). Each reaction was conducted in a 9 nL volume chamber consisting of a mixture of 20X Fast GT Sample Loading Reagent (Fluidigm), 2X TaqMan® GTXpress™ Master Mix (Applied Biosystems™), Custom TaqMan® SNP Genotyping Assay (Applied Biosystems), 2X Assay Loading Reagent (Fluidigm), 50X ROX Reference Dye (Invitrogen™), and 60–400 ng/µl DNA. Thermal cycling was performed on a Fluidigm FC1™ Cycler using a Fast-PCR protocol as follows: an initial "Hot-Start" denaturation of 95ºC for 2 min followed by 40 cycles of denaturation at 95ºC for 2 sec and annealing at 60ºC for 20 sec, with a final "Cool-Down" at 25ºC for 10 sec. The Dynamic Array IFCs was read on a Biomark™ or EP1™ System (Fluidigm) after amplification and scored using Fluidigm SNP Genotyping Analysis software.

Assays that failed to amplify on the Fluidigm system were reanalyzed with the QuantStudio™ 12K Flex Real-Time PCR System (Life Technologies). Each reaction was performed in 384-well plates in a 5 µL volume consisting of 6–40 ng/µl of DNA, 2X TaqMan® GTXpress™ Master Mix (Applied Biosystems™), and Custom TaqMan® SNP Genotyping Assay (Applied Biosystems). Thermal cycling was performed on a Dual 384-Well GeneAmp® PCR System 9700 (Applied Biosystems) as follows: an initial "Hot-Start" denaturation of 95°C for 10 min followed by 40 cycles of denaturation at 92°C for 1 sec and annealing at 60°C for 1 min, with a final "Cool-Down" hold at 10°C. The plates were scanned on the system after amplification and scored using the Life Technologies QuantStudio 12K Flex Software.

Genotypes produced on both platforms were imported and archived in the Gene Conservation Lab Oracle database, LOKI.

Laboratory Quality Control

We conducted quality control (QC) analyses to identify laboratory errors and measure the background discrepancy rate of the genotyping process. The QC analyses were performed as a separate event from the original genotyping, with staff duties altered to reduce the likelihood of repeated human errors. All samples were subject to the following QC protocol: re-extraction of 8% of project fish and genotyping for the same SNPs assayed in the original project. Discrepancy rates were calculated as the number of conflicting genotypes divided by the total number of genotypes compared. These rates describe the difference between original project data and QC data for all SNPs, and are capable of identifying extraction, assay plate, and genotyping errors. Error rates in the original project data are half the rate of discrepancies, assuming that

errors are equally likely to occur in original and QC genotyping. This QC method is the best representation of the error rate of our current genotyping methodology.

STATISTICAL ANALYSIS

Data Retrieval and Genotype Quality Control

We retrieved genotypes from LOKI and imported them into *R* version 3.3.1 (Bug in Your Hair).[a] All subsequent analyses were performed in *R* unless otherwise noted. Prior to MSA, we conducted 3 statistical QC analyses to ensure that only quality genotypic data were included in the estimation of stock compositions. First, we removed individuals that were missing substantial genotypic data from further analyses. We used what we refer to as the *80% rule* which excludes individuals missing genotypes for 20% or more of loci, because these individuals likely have poor quality DNA. The inclusion of individuals with poor quality DNA might introduce genotyping errors into the catch samples and reduce the accuracies and precision of MSA (Dann et al. 2012b).

Secondly, we identified individuals that appeared to be the wrong species. Individuals that amplified well, but displayed signature patterns for other species in their scatter plot distributions across selected loci were identified as nonsockeye. We were able to determine that the sample represented a nonsockeye because we analyzed Atlantic and Pacific salmon (chum, Chinook, pink, and coho salmon) on the 48 markers to identify these species-specific signatures in scatter plot distributions. We only noted that the sample was nonsockeye and did not report the species.

Thirdly, we identified individuals with duplicate genotypes and removed them from further analyses. Duplicate genotypes can occur as a result of sampling or extracting the same individual twice, and were defined as pairs of individuals sharing the same genotype in 95% of markers screened. The individual with the most missing data from each duplicate pair was removed from further analyses. If both samples had the same amount of genotypic data, the first sample was removed from further analyses.

The number of sockeye salmon initially selected for analysis, the number genotyped in the laboratory, the numbers excluded for the 3 statistical QC analyses, and the final number included in MSA were tabulated for each catch sample.

Estimating Stock Compositions and Stock-Specific Harvests

Stock compositions of KMA fishery harvests were estimated using a Bayesian approach to MSA, the Pella-Masuda Model as implemented in the program *BAYES* (Pella and Masuda 2001). The Bayesian method of MSA estimates the proportion of stocks caught within each fishery using 4 pieces of information: 1) a baseline of allele frequencies for each population, 2) the grouping of populations into the reporting groups desired for MSA, 3) prior information about the stock proportions of the fishery, and 4) the genotypes of fish sampled from the fishery. The baseline of allele frequencies for sockeye salmon populations and the reporting groups populations were combined into are described in (Shedd et al. 2016a; Shedd et al. 2016b).

[a] R version 3.3.1 (Bug in Your Hair) has been released on Tuesday 2016-06-21. The R project for statistical computing, Vienna, Austria. Available from https://www.R-project.org/.

Prior Choice

The Bayesian model implemented by *BAYES* places a Dirichlet distribution as the prior distribution for the stock proportions, and the parameters for this distribution must be specified. It was demonstrated during WASSIP that the choice of prior information about the stock proportions in a fishery, or the prior probability distribution (referred to hereafter as a *prior*), can be important to the outcome of MSA (Habicht et al. 2012b). For spatiotemporal strata that had no precedent (i.e., all "early" strata in 2014), we defined prior parameters for each reporting group to be equal (a *regionally flat prior*) with the prior for each reporting group subsequently divided equally to populations within that reporting group. Following this initial set of stock composition estimates, future strata were given a *sequential prior* according to WASSIP methods (Jasper et al. 2012), such that the prior for the second temporal mixture was the stock composition estimates from the first temporal mixture for a given geographic area. For subsequent years, the prior for the first temporal strata was equal to the stock compositions from the first temporal strata of the previous year. We set the sum of all prior parameters to 1 (prior weight), which is equivalent to adding 1 fish to each mixture (Pella and Masuda 2001).

BAYES Protocol

We ran 5 independent Markov Chain Monte Carlo (MCMC) chains of 40,000 iterations with different starting values and discarded the first 20,000 iterations (burn-in) to remove the influence of initial start values. We defined the starting values for the first chain such that the first 1/5 of the baseline populations summed to 0.9 and the remaining populations summed to 0.1. Each chain had a different combination of 1/5 of baseline populations summing to 0.9. We combined the second halves of these chains to form the posterior distribution and tabulated median and mean estimates, 90% credibility intervals, the probability of an estimate being equal to zero, and standard deviations from a total of 100,000 iterations. For each tabulated measure, summary statistics were based upon the raw posterior, which was calculated out to 6 significant digits.

We also assessed the within- and among-chain convergence of these estimates using the Raftery-Lewis (within-chain) and Gelman-Rubin (among-chain) diagnostics. These values measure the convergence of each chain to stable estimates (Raftery and Lewis 1996), as well as measure the variation of estimates within a chain to the total variation among chains (Gelman and Rubin 1992), respectively. If the Gelman-Rubin diagnostic for any stock group estimate was greater than 1.2 we reanalyzed the mixture with 80,000-iteration chains following the same protocol. If the Gelman-Rubin diagnostic for any stock group estimate was greater than 1.2 after this reanalysis and its mean stock proportion was greater than 0.05 (i.e., 5%), we analyzed the mixture with the program HWLER (Pella and Masuda 2006). HWLER is similar to BAYES in that it estimates stock compositions based upon a Bayesian model, but differs in that it incorporates information about the effect of assigning mixture individuals to baseline populations with respect to the Hardy-Weinberg and linkage equilibria conditions observed in the baseline populations. In doing so it allows for the identification of extra-baseline individuals that contravene these equilibria conditions, but contribute to the mixture in question. We incorporated this information into the definition of the posterior for those mixtures that failed to converge after reanalysis with 80,000-iteration chains in BAYES.

Applying Stock Compositions to Harvests

We calculated stock-specific harvests in the manner described by Dann et al. (2009). Briefly, median and mean harvest estimates, credibility intervals, and standard deviations for each temporal stratum were calculated by multiplying the harvest from that stratum by its unrounded reporting group stock proportion estimates. Temporal strata were combined within sampling areas into annual estimates by weighting them by their respective harvests. Annual estimates for each sampling area were combined into annual estimates for all sampling areas by weighting them by their respective harvests to arrive at overall annual estimates for KMA. Confidence intervals for the overall harvest of each stock in a sampling area was estimated via Monte Carlo by resampling 100,000 draws of the posterior output from each of the constituent temporal strata and applying the harvest to the draws.

Testing Assumption that Post-Sampling Harvest is of Local Stocks

The 20-year average (1994–2013) post-August sockeye salmon harvest in the KMA was roughly 100,000 fish. Due to the strong Karluk late run in 2014 and 2015 (734,000 fish) and overall late run timing in 2015 (434,000 fish), the post-August 29 sockeye salmon harvest in the sampling areas was substantially greater in those years (Table 1). Thus, a substantial proportion of the KMA harvest in the sampling areas for this project occurred after sampling ended in 2014 and 2015 (i.e., after August 29; Table 1). While we do not have samples taken from this postsampling harvest, we did specifically analyze 3 temporal strata from Uganik-Kupreanof, Uyak, and Karluk-Sturgeon sampling areas in 2014 representing the latest harvest from which we have samples (8/25–8/29, 2014; Appendix D) to see if these harvests were primarily to Karluk and Upper Station/Akalura *local* stocks by the end of August.

RESULTS

TISSUE SAMPLING

Commercial sockeye salmon fisheries in Kodiak area were sampled in 2014–2016. Approximately 45,165 sockeye salmon samples were collected in 47 spatiotemporal strata over the 3 years of sampling (Table 1; Appendix B).

Uganik-Kupreanof (253-11, 12, 13, 14, 31, 32, 33, 34, 35)

Three temporal strata were targeted for sampling each year in the Uganik-Kupreanof sampling area of Northwest Kodiak District (Table 1; Figure 2). Target sampling objectives were achieved in all strata in all years. Commercial fishing occurred during all temporal strata. Samples for Uganik-Kupreanof sampling area were collected exclusively at processing plants in Kodiak. Details of the sampling (i.e., tabulation of catch, samples collected, samples selected by day) for each of the years and temporal strata that were sampled and selected for MSA analysis are provided in Appendix B.

Uyak (254-10, 20, 21, 30, 31, 40, 41)

Three temporal strata were targeted for sampling each year in the Uyak sampling area of Northwest Kodiak District (Table 1; Figure 3). Sampling did not include harvest in the SBSHA (254-50). Target sampling objectives were achieved in all temporal strata in all years. Commercial fishing occurred during all temporal strata. Samples for Uyak sampling area were collected at the processing plant in Larsen Bay. Details of the sampling (i.e., tabulation of catch,

samples collected, samples selected by day) for each of the years and strata that were sampled and selected for MSA analysis are provided in Appendix B.

Karluk-Sturgeon (255-10, 20; 256-40)

Three temporal strata were targeted for sampling each year in the Karluk-Sturgeon sampling area of Southwest Kodiak District (Table 1; Figure 4). Target sampling objectives were achieved in all temporal strata in all years. Commercial fishing occurred during all strata. Samples for Karluk-Sturgeon were normally collected at the processing plant in Larsen Bay but occasionally were gathered in Kodiak or Alitak. Details of the sampling (i.e., tabulation of catch, samples collected, samples selected by day) for each of the years and temporal strata that were sampled and selected for MSA analysis are provided in Appendix B.

Ayakulik-Halibut Bay (256-10, 15, 20, 25, 30)

Three temporal strata were targeted for sampling each year in the Ayakulik-Halibut Bay sampling area of Southwest Kodiak District (Table 1; Figure 5). Target sampling objectives were achieved in 8 out of the 9 temporal strata. Commercial fishing occurred during all temporal strata except for the 2016 early stratum; however, a test fishery was prosecuted within 1 kilometer of the mouth of Ayakulik River and a limited sample collected. Samples for Ayakulik-Halibut Bay sampling area were collected at the processing plants in Alitak and Larsen Bay. Details of the sampling (i.e., tabulation of catch, samples collected, samples selected by day) for each of the years and temporal strata that were sampled and selected for MSA analysis are provided in Appendix B.

Alitak (257-10, 20, 50, 60, 70)

Three temporal strata were targeted for sampling each year in the Alitak sampling area of Alitak District (Table 1; Figure 6). Target sampling objectives were achieved all temporal strata fished (8 out of 9; Table 1). No fishing occurred during the early stratum of 2014. Samples for the Alitak sampling area were collected at the processing plant in Alitak. Details of the sampling (i.e., tabulation of catch, samples collected, samples selected by day) for each of the years and temporal strata that were sampled and selected for MSA analysis are provided in Appendix B.

Igvak (262-75, 80, 90, 95)

Two strata were targeted for sampling each year in the Igvak sampling area of Mainland District (Table 1; Figure 7). Target sampling objectives were achieved all temporal strata fished (3 out of 6; Table 1). No fishing occurred during 2014 and in the early stratum of 2015. Samples for Igvak sampling area were collected at the processing plants in Larsen Bay, Alitak, and Kodiak. Details of the sampling (i.e., tabulation of catch, samples collected, samples selected by day) for each of the years and temporal strata that were sampled and selected for MSA analysis are provided in Appendix B.

SELECTING TISSUE SAMPLES FOR ANALYSIS

Uganik-Kupreanof (253-11, 12, 13, 14, 31, 32, 33, 34, 35)

Pooling of commercial fishery samples allowed estimation of stock compositions for all 9 strata (Table 1; Appendix B). The late temporal stratum in 2014 was subsampled into an “Early-Late” (n = 380) and “Late-Late” (n = 285) substratum to test the hypothesis that the substantial harvest that occurred postsampling (i.e. after August 29, 2014) was likely to be *local* stocks. The “Late-

Late" stratum contained the latest samples taken for the late stratum (Appendix B). Following this test, stock compositions for the late stratum were estimated by stratifying the "Early-Late" and "Late-Late" stock composition estimates by harvest.

Uyak (254-10, 20, 21, 30, 31, 40, 41)

Pooling of commercial fishery samples allowed estimation of stock compositions for all 9 strata (Table 1; Appendix B). The late temporal stratum in 2014 was subsampled into an "Early-Late" (n = 380) and "Late-Late" (n = 285) substratum to test the hypothesis that the substantial harvest that occurred postsampling was likely to be *local* stocks. The "Late-Late" stratum contained the latest samples taken for the late stratum (Appendix B). Following this test, stock compositions for the late stratum were estimated by stratifying the "Early-Late" and "Late-Late" stock composition estimates by harvest.

Karluk-Sturgeon (255-10, 20; 256-40)

Pooling of commercial fishery samples allowed estimation of stock compositions for all 9 strata (Table 1; Appendix B). The late temporal stratum in 2014 was subsampled into an "Early-Late" (n = 380) and "Late-Late" (n = 285) substratum to test the hypothesis that the substantial harvest that occurred postsampling was likely to be *local* stocks. The "Late-Late" stratum contained the latest samples taken for the late stratum (Appendix B). Following this test, stock compositions for the late stratum were estimated by stratifying the "Early-Late" and "Late-Late" stock composition estimates by harvest.

Ayakulik-Halibut Bay (256-10, 15, 20, 25, 30)

Pooling of commercial fishery samples allowed estimation of stock compositions for all 9 strata (Table 1; Appendix B). However, the "Early" stratum for 2016 was sampled from fish harvested in the ADF&G test fishery, as there were no commercial openings during that stratum.

Alitak (257-10, 20, 50, 60, 70)

Pooling of commercial fishery samples allowed estimation of stock compositions for 8 of the 9 strata (Table 1; Appendix B). No samples were taken from the "Early" stratum in 2014 as there were no commercial openings during that stratum.

Igvak (262-75, 80, 90, 95)

Pooling of commercial fishery samples allowed estimation of stock compositions for 3 of the 6 strata (Table 1; Appendix B). No samples were taken from the "Early" or "Middle" strata in 2014 as there were no commercial openings during those strata due to low sockeye salmon harvest in the Chignik Management Area (Wilburn et al. 2015). No samples were taken from the "Early" stratum in 2015 as there were no commercial openings during that stratum due to low sockeye salmon harvest in the Chignik Management Area (Wilburn and Stumpf 2016). While samples were taken from the "Middle" stratum in 2015, harvest was far below historical averages (Wilburn and Stumpf 2016). Samples were taken proportional to harvest during both strata in 2016, where harvest was similar to historical averages.

LABORATORY ANALYSIS

Assaying Genotypes

A total of 18,558 fish were genotyped from 47 strata representing harvests (Table 1).

Laboratory Quality Control

Laboratory QC identified errors in tissue and DNA handling. After these errors were corrected, we measured low levels of nonsystematic discrepancies between the original and QC analyses (Table 2). There were 70,992 genotypes compared between these analyses. The majority of discrepancies were between homozygote and heterozygote genotypes (0.27%), but some discrepancies between alternate homozygotes were observed (0.02%). Assuming all errors are equally likely to have occurred in the production and QC genotyping process, error rates for both error types was 0.15%. This level of error was well below the standard set by the laboratory as acceptable (1%).

STATISTICAL ANALYSIS

Data Retrieval and Genotype Quality Control

Of the 18,558 fish genotyped, 221 were excluded from analysis because they were missing genotypes for more than 20% of loci, zero were excluded because they were identified as the wrong species, and 10 were excluded because they appeared to represent duplicate individuals (Appendix C). In the end, a total of 18,327 fish were used to produce stock composition estimates for 50 strata (including "Late-Late" harvest from 2014). Average sample size of strata was 367 fish with a minimum of 219 fish and a maximum of 380 fish.

Stock Composition and Stock-Specific Harvest Estimates

Estimates by Sampling Area

Uganik-Kupreanof (253-11, 12, 13, 14, 31, 32, 33, 34, 35)

Early stratum harvests were smaller and heterogeneous with contributions from Saltery, Karluk, Ayakulik/Frazer, and Uganik reporting groups, while middle and late strata harvests were dominated by Saltery and Karluk reporting groups (Tables 3–14; Figures 8–9). During 2014, the Saltery and Karluk reporting groups contributed 22.1% and 20.1% to the early stratum followed by Ayakulik/Frazer with 15.8%, Uganik with 15.2%, West of Chignik with 6.6%, Chignik with 5.9%, and Northwest Kodiak with 5.2% (Table 3). The middle stratum was primarily Saltery with 68.5%, followed by Karluk with 9.2%, Uganik with 6.4%, and Prince William Sound with 6.1% (Table 4). For the late stratum, this relationship between Karluk and Saltery flipped with catches dominated by Karluk with 80.2% and Saltery with 11.2% (Table 5). No other groups represented over 5% of the harvest in any stratum (Figure 8). For 2014, stock-specific harvests in the Uganik-Kupreanof sampling areas were estimated at 159,308 Karluk fish, followed by 124,286 Saltery fish, 20,466 Uganik fish, and 17,431 Ayakulik/Frazer fish (Table 6; Figure 9).

In 2015, the early stratum harvests were again relatively small and diverse, with a contribution of 30.6% from the Uganik reporting group, followed by Karluk with 13.9%, Afognak with 10.9%, Northwest Kodiak with 9.7%, Black Lake with 8.9%, Saltery with 8.3%, Cook Inlet with 8.2%, and Prince William Sound with 5.5% (Table 7). In the middle stratum, the Saltery reporting group was again the largest with 56.2%, followed by Cook Inlet with 17.5%, Karluk with 9.2%, and Prince William Sound with 5.5% (Table 8). In the late stratum, the Saltery reporting group decreased to 34.4%, Cook Inlet increased to 31.2%, Karluk increased to 21.2%, and minor contributions came from Prince William Sound with 5.3% (Table 9; Figure 8). Harvest by stock during 2015 consisted of 173,213 Saltery fish, 85,243 Cook Inlet fish, 54,892 Karluk fish, 24,057 Uganik fish, and 21,466 Prince William Sound fish (Table 10; Figure 9).

In 2016, the early stratum harvests remained relatively small, but less diverse than previous years, with a larger contribution of 68.6% from the Uganik reporting group, followed by Karluk with 8.0%, and Cook Inlet with 7.3% (Table 11). Similar to previous years, the largest contribution to the middle stratum came from the Saltery reporting group with 46.3%, followed by Cook Inlet with 26.1%, Uganik with 14.8%, and Karluk with 9.5% (Table 12). In the late stratum, the Karluk reporting group contributed the majority of the harvest with 53.9% while Cook Inlet remained stable with 24.3%, and Saltery decreased to 18.6% of the catch (Table 13). No other reporting groups contributed more than 5% in any strata (Table 14; Figure 8). The total harvest was 93,597 Karluk fish, 92,672 Saltery fish, 74,674 Cook Inlet fish, and 64,555 Uganik fish (Table 14; Figure 9).

Uyak (254-10, 20, 21, 30, 31, 40, 41)

The stock composition in the Uyak sampling area was similar to the Uganik-Kupreanof sampling area with the Saltery and Karluk reporting groups as the largest contributors to the harvest, followed by the Cook Inlet reporting group, particularly in 2015 when it surpassed that of Saltery or Karluk (Tables 15–26; Figures 10–11). In 2014, the early stratum consisted of a diverse mixture of stocks ranging from the Karluk reporting group with 30.8%, Ayakulik/Frazer with 18.4%, Uganik with 18.0%, Saltery with 16.1%, and Northwest Kodiak with 5.9% (Table 15). The middle stratum was dominated by the Saltery reporting group with 71.7%, followed by Karluk with 10.1%, Cook Inlet with 5.5%, and Ayakulik/Frazer with 5.4% (Table 16). Conversely, the late stratum consisted of mostly the Karluk reporting group with 71.5%, with the Saltery reporting group contributing 16.6%, and Upper Station/Akalura 7.5% (Table 17). No other reporting groups contributed more than 5% in any strata (Table 18; Figure 10). The total harvest was 155,669 Karluk group fish, 133,287 Saltery fish, 29,466 Ayakulik/Frazer fish, and 21,271 Uganik fish (Table 18; Figure 11).

In 2015, early stratum harvest was distributed across the Karluk reporting group with a contribution of 27.7%, followed by Uganik with 20.0%, Cook Inlet with 17.2%, Prince William Sound with 13.3%, and Northwest Kodiak with 6.1% (Table 19). The Cook Inlet group increased to 54.0% of the harvest in the middle stratum, with the Saltery reporting group contributing 30.1% and the Karluk reporting group contributing 6.8% (Table 20). In the late stratum the Karluk reporting group contribution increased to 38.1%, the Saltery reporting group increased to 29.0%, while the Cook Inlet reporting group decreased to 31.7% of the harvest (Table 21). No groups other than Cook Inlet, Saltery, and Karluk contributed to more than 5% of the annual harvest (Table 22; Figure 10). The harvest of the Cook Inlet group during 2015 was 142,488 fish, followed by 91,045 Saltery fish, and 73,628 Karluk fish (Table 22; Figure 11).

In 2016, similar to Uganik-Kupreanof, the early stratum harvest was relatively small and the Uganik reporting group was the largest contributor with 51.3% of the fish harvested, followed by Karluk with 19.0%, Prince William Sound with 9.1%, and Cook Inlet with 8.9% (Table 23). In the middle stratum, the Saltery reporting group contributed the majority of the harvest with 58.1%, while the Cook Inlet group increased to 16.2%, the Uganik group decreased to 9.8%, and and Karluk group decreased to 7.8% (Table 24). In the late stratum, the Karluk group increased to 62.3%, Saltery decreased to 23.3%, and Cook Inlet decreased to 9.3% (Table 25). No other reporting groups contributed more than 5% in any strata (Table 26; Figure 10). The harvest during 2016 contained 91,587 Karluk group fish, 71,791 Saltery fish, 26,509 Cook Inlet fish, and 26,055 Uganik fish (Table 26; Figure 11).

Karluk-Sturgeon (255-10, 20; 256-40)

During 2014 through 2016, the Karluk reporting group was the largest contributor to the harvest, increasing throughout the season, followed by the Ayakulik/Frazer group, which decreased throughout the season (Tables 27–38; Figures 12–13). The Karluk reporting group was the largest contributor in the early stratum in 2014 with 47.0%, followed by the Ayakulik/Frazer group with 35.7% (Table 27). The middle stratum consisted of 37.8% Karluk, 25.8% Ayakulik/Frazer, 20.0% Saltery, and 5.4% Uganik fish (Table 28). The Karluk group increased to 80.2% in the late stratum, followed by small contributions from the Upper Station/Akalura group with 9.5% and the Ayakulik/Frazer group with 6.2% (Table 29; Figure 12). Overall, the majority of the 2014 total harvest included Karluk with 152,304 fish, followed by 45,406 Ayakulik/Frazer fish, 18,222 Saltery fish, and 13,723 Upper Station/Akalura fish (Table 30; Figure 13).

In 2015, the early temporal stratum was nearly identical to that of 2014 with the Karluk group contributing 45.1% and Ayakulik/Frazer 35.1% (Table 31). In the middle stratum, the Karluk group was still the plurality with 49.9%, followed by Cook Inlet with 29.1%, Ayakulik/Frazer with 8.0%, and Saltery with 6.4% (Table 32). Karluk again dominated the late stratum with 78.8%, followed by small contributions from Cook Inlet with 9.0% and Saltery with 6.0% (Table 33; Figure 12). The harvest of the Karluk group was 80,839 fish, followed by 15,081 Ayakulik/Frazer fish, and 14,608 Cook Inlet fish (Table 34; Figure 13).

In 2016, the Karluk group was the largest contributor in the early stratum with 56.0% of the harvest, followed by Ayakulik/Frazer with 22.2%, and Uganik with 5.6% (Table 35). In the middle stratum, harvest remained low but became more diverse with the Karluk reporting group decreasing to 32.3% of the harvest, with the remainder composed of 17.1% Ayakulik/Frazer, 16.3% Saltery, 12.4% Prince William Sound, 10.8% Cook Inlet, and 7.0% Uganik fish (Table 36). Harvest increased by an order of magnitude in the late stratum and was dominated by the Karluk reporting group, representing 91.0% of the harvest (Table 37). Harvest by stock in 2016 consisted of 114,420 Karluk group fish, with no other groups representing 5% or more of the harvest (Table 38; Figures 12–13).

Ayakulik-Halibut Bay (256-10, 15, 20, 25, 30)

In general, the stock composition of the Ayakulik/Frazer group declined slightly over temporal strata in Ayakulik-Halibut Bay sampling area, while the Cook Inlet group seemed to peak in the middle stratum (Tables 39–46; Figures 14–15). The early stratum of 2014 was dominated by the Ayakulik/Frazer group with 71.3% of the harvest, followed by Karluk with 10.2% and Cook Inlet with 7.1% (Table 39). The proportion of the Ayakulik/Frazer group decreased to 51.7% in the middle stratum, while Cook Inlet group increased to 23.6% and the Saltery group accounted for 13.1% (Table 40). In the late stratum, the Ayakulik/Frazer group remained consistent with 52.1%, Upper Station/Akalura contributed 21.6%, Karluk reappeared with 12.7%, and Cook Inlet decreased to 5.2% (Table 41). No other group contributed 5% or more of the harvest in any of the strata (Figure 14). Overall, harvest of the Ayakulik/Frazer group totaled 236,602 fish, followed by 56,044 Cook Inlet fish, 28,484 Saltery fish, 26,103 Karluk fish, and 20,529 Upper Station/Akalura fish (Table 42; Figure 15).

In 2015, the early temporal stratum had the same 3 groups as 2014; however, the proportions were different, with 44.8% of the harvest attributed to the Ayakulik/Frazer group, 28.2% to Cook Inlet, 9.4% to Karluk, and 7.9% to Prince William Sound (Table 43). The middle stratum was

split between the Cook Inlet group with 48.2%, and Ayakulik/Frazer with 40.7% (Table 44). Cook Inlet decreased to 8.3% of the harvest in the late stratum with the rest of the harvest evenly distributed—Ayakulik/Frazer group with 24.8%, Karluk with 24.4%, Saltery with 21.7%, and Upper Station/Akalura with 15.9% (Table 45; Figure 14). Harvest in 2015 was dominated by Ayakulik/Frazer with 252,727 fish, followed by 244,316 Cook Inlet fish and 41,959 Karluk fish (Table 46; Figure 15).

In 2016, the early temporal stratum was solely represented by samples from the department test fishery operating in front of the Ayakulik River mouth, as the commercial fishery was not open. For this early temporal stratum, 98.0% of the harvest was attributed to the Ayakulik/Frazer reporting group (Table 47). In the middle stratum, when the commercial fishery was open, harvest was split fairly evenly between the Ayakulik/Frazer reporting group (47.0%) and the Cook Inlet reporting group (42.2%; Table 48). Harvest decreased in the late stratum and contained 47.3% Karluk reporting group fish, 28.5% Cook Inlet fish, 8.8% Upper Station/Akalura fish, 6.0% Ayakulik/Frazer fish, and 5.3% Saltery fish (Table 49). No other reporting groups contributed to more than 5% of the harvest in any strata (Figure 14). Harvest in 2016 was roughly evenly split between 62,295 Ayakulik/Frazer fish and 60,351 Cook Inlet fish, followed by 20,533 Karluk fish (Table 50; Figure 15).

Alitak (257-10, 20, 50, 60, 70)

During 2014 through 2016, the Ayakulik/Frazer and Cook Inlet reporting groups were the largest contributors to the Alitak sampling area, with other smaller contributions from Upper Station/Akalura and Eastside Kodiak stocks (Tables 51–57; Figures 16–17). The early stratum was not sampled in 2014, as there was no harvest (Table 1). The majority of the harvest in the middle stratum was attributed to the Ayakulik/Frazer group (56.5%), with the remainder (32.3%) largely from the Cook Inlet group (Table 51). The late stratum had much smaller harvest consisting of 63.4% Upper Station/Akalura fish, 25.1% Ayakulik/Frazer fish, and 5.2% Cook Inlet fish (Table 52). No other groups received 5% or more harvest in any strata (Figure 16). Harvest by stock in 2014 consisted of 66,942 Ayakulik/Frazer fish, 37,751 Cook Inlet fish, and 8,829 Upper Station/Akalura fish (Table 53; Figure 17).

In 2015, the majority of the early stratum was from the Ayakulik/Frazer reporting group with 53.4%, followed by Cook Inlet with 26.8%, Prince William Sound with 7.2%, and Upper Station/Akalura with 6.3% (Table 54). The Cook Inlet group increased to 77.0% in the middle stratum, while the Ayakulik/Frazer group decreased to 17.2% (Table 55). In the late stratum, the Ayakulik/Frazer group contributed 37.2%, the Upper Station/Akalura group contributed 34.3%, followed by the Eastside Kodiak group with 16.4%, and Saltery with 7.1% (Table 56; Figure 16). The harvest during 2015 contained 136,314 Cook Inlet fish, 55,537 Ayakulik/Frazer fish, 12,665 Upper Station/Akalura fish, and 11,379 Eastside Kodiak fish (Table 57; Figure 17).

In 2016, the early stratum had relatively low harvest which contained 54.2% Ayakulik/Frazer reporting group fish, 23.3% Cook Inlet fish, and 13.9% Upper Station/Akalura fish (Table 58). Harvest picked up in the middle stratum, but was low relative to 2014–2015, and saw an increase in the Cook Inlet group to 66.4% and decrease in the Ayakulik/Frazer group to 25.5% (Table 59). Catches in the late stratum were dominated by the Upper Station/Akalura reporting group with 65.5%, followed by Ayakulik/Frazer with 13.1%, Saltery with 7.9%, and Cook Inlet with 7.1% (Table 60). No other groups contributed over 5% to any stratum (Figure 16). In 2016,

harvest included 45,279 Cook Inlet fish, 24,579 Ayakulik/Frazer fish, and 17,264 Upper Station/Akalura fish (Table 61; Figure 17).

Igvak (262-75, 80, 90, 95)

Igvak sampling area was not sampled in either strata of 2014 or the early temporal stratum of 2015 due to fishery closures. When sampling did occur in the Igvak sampling area, harvest was attributed to the Cook Inlet group, the Black Lake group, or the Chignik Lake group (Tables 62–66; Figures 18–19). While samples were taken from the middle stratum of 2015, harvest was low relative to historical averages and contained 54.0% Cook Inlet fish, 20.1% Chignik Lake fish, 11.0% Black Lake fish, 6.9% Kodiak fish, and 5.8% Prince William Sound fish (Table 62). No other groups contributed greater than 5% of the harvest (Figure 18). The harvest during 2015 was 3,560 Cook Inlet fish, 1,324 Chignik Lake fish, 727 Black Lake fish, and 384 Prince William Sound fish (Table 63; Figure 19).

In 2016, the Chignik regional group was the largest contributor in the early stratum with 74.1% of the harvest (70.9% to the Black Lake group), followed by the Kodiak regional group with 9.5%, the West of Chignik group with 7.7%, and Cook Inlet with 6.0% (Table 64). In the middle temporal stratum, the Cook Inlet group increased to 93.2% and the Chignik regional group decreased to 5.6%, which was largely attributed to the Chignik Lake group with 5.2% (Table 65). No other reporting group contributed to 5% or more of the harvest in any stratum (Figure 18). For 2016, a stock-specific harvest in the Igvak sampling area was estimated at 174,456 Cook Inlet reporting group fish, followed by 124,510 Chignik regional reporting group fish (110,155 Black Lake reporting group fish and 14,168 Chignik Lake reporting group fish), and 16,406 Kodiak regional reporting group fish (Table 66; Figure 19).

Estimates by Reporting Group

West of Chignik

West of Chignik fish only constituted greater than 5% of a mixture in 2 of the 47 strata analyzed. West of Chignik fish were 6.6% of the harvest (5,273 fish) in the early temporal stratum of the Uganik-Kupreanof sampling area in 2014 (Table 3) and 7.7% of the harvest (11,843 fish) in the early temporal stratum of the Igvak sampling area in 2016 (Table 64). Overall, West of Chignik fish contributions to the sampled annual KMA harvest were small, amounting to 1.3% (20,559 fish), 0.1% (873 fish), and 1.0% (13,398 fish) of the KMA commercial sockeye salmon harvest from sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 67–69; Figures 21–24).

Black Lake

Black Lake fish only constituted greater than 5% of a mixture in 3 of the 47 strata analyzed. Black Lake fish were 8.9% of the harvest (2,806 fish) in the early temporal stratum of the Uganik-Kupreanof sampling area in 2015 (Table 7), 11.0% of the harvest (727 fish) in the middle temporal stratum of the Igvak sampling area in 2015 (Table 62), and 70.9% of the harvest (109,455 fish) in the early temporal stratum of the Igvak sampling area in 2016 (Table 64). Overall, Black Lake fish contributions to the sampled annual KMA harvest were small and limited predominantly to the Igvak sampling area, amounting to 0.5% (7,016 fish), 0.6% (10,848 fish), and 8.6% (112,104 fish) of the KMA commercial sockeye salmon harvest from sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 67–69; Figures 21–24).

Chignik Lake

Chignik Lake fish only constituted greater than 5% of a mixture in 2 of the 47 strata analyzed. Chignik Lake fish were 20.1% of the harvest (1,324 fish) in the middle temporal stratum of the Igvak sampling area in 2015 (Table 62) and 5.2% of the harvest (9,300 fish) in the middle temporal stratum of the Igvak sampling area in 2016 (Table 65). Overall, Chignik Lake fish contributions to the sampled annual KMA harvest were small and limited to the Igvak sampling area, amounting to 0.8% (11,579 fish), 0.8% (13,014 fish), and 1.2% (15,267 fish) of the KMA commercial sockeye salmon harvest from sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 67–69; Figures 21–24).

Upper Station/Akalura

Upper Station/Akalura fish constituted greater than 5% of a mixture in 10 of the 47 strata analyzed. Harvest of Upper Station/Akalura fish occurred predominantly in the Alitak and Ayakulik-Halibut Bay sampling areas, except in 2014 when harvest was also seen in Westside sampling areas (Figures 22–24). On average, 60% of this Upper Station/Akalura harvest occurred in those areas during 2014 through 2016. The remainder of the Upper Station/Akalura harvest was in the Karluk-Sturgeon sampling area and the 2 sampling areas in the Central Section of the Northwest Kodiak District, Uganik-Kupreanof and Uyak. Most of the Upper Station/Akalura harvest occurred in late temporal strata. Overall, Upper Station/Akalura fish contributions to the sampled annual KMA harvest were small, amounting to 4.3% (65,196 fish), 1.7% (29,702 fish), and 2.2% (27,924 fish) of the KMA commercial sockeye salmon harvest from sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 67–69; Figures 21–24).

Ayakulik/Frazer

Ayakulik/Frazer fish constituted greater than 5% of a mixture in 27 of the 47 strata analyzed. Harvest of Ayakulik/Frazer group fish occurred predominantly in the Ayakulik-Halibut Bay and Alitak sampling areas, except in 2014 (Figures 22–24). On average, 84% of the Ayakulik/Frazer harvest occurred in those areas during 2014 through 2016. The remainder of the Ayakulik/Frazer harvest was in the Karluk-Sturgeon sampling area and the 2 sampling areas in the Central Section of the Northwest Kodiak District, Uganik-Kupreanof and Uyak. Stock composition estimates also indicated the presence of Ayakulik/Frazer fish in the Igvak sampling area but in percentages less than 5% of the harvest. Most of the Ayakulik/Frazer harvest occurred in the early and middle temporal strata. Overall, Ayakulik/Frazer fish contributions to the sampled annual KMA harvest varied across sampling years, amounting to 26.0% (396,083 fish), 19.3% (329,848 fish), and 8.2% (106,364 fish) of the KMA commercial sockeye salmon harvest from sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 67–69; Figures 21–24).

Karluk

Karluk fish constituted greater than 5% of a mixture in 32 of the 47 strata analyzed. Harvest of Karluk group fish was evenly distributed between the 2 sampling areas in the Central Section of the Northwest Kodiak District, Uganik-Kupreanof and Uyak, and the Karluk-Sturgeon sampling area in each year (Figures 22–24). On average, roughly 90% of the Karluk sockeye salmon harvest occurred in those areas during 2014–2016. Other harvests of Karluk fish occurred mostly in the Ayakulik-Halibut Bay sampling area. Stock composition estimates also detected Karluk

group fish in Igvak and Alitak sampling areas but in percentages less than 5%. Most of the Karluk harvest occurred in late temporal strata. Overall, Karluk fish contributions to the sampled annual KMA harvest varied across sampling years, amounting to 32.4% (493,692 fish), 14.7% (252,170 fish), and 25.4% (328,862 fish) of the KMA commercial sockeye salmon harvest from sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 67–69; Figures 21–24).

Uganik

Uganik fish constituted greater than 5% of a mixture in 12 of the 47 strata analyzed. Harvest of Uganik group fish was predominantly within the 2 sampling areas in the Central Section of the Northwest Kodiak District, Uganik-Kupreanof and Uyak. On average 90% of the Uganik harvest occurred there (Figures 22–24). The remainder of Uganik harvest was in the 2 sampling areas in the Southwest Kodiak District, Karluk-Sturgeon and Ayakulik-Halibut Bay, with minimal harvest in Alitak and Igvak. Most of the Uganik harvest occurred in the early temporal stratum. Overall, Uganik fish contributions to the sampled annual KMA harvest were small, amounting to 3.1% (47,797 fish), 2.7% (46,650 fish), and 7.4% (96,205 fish) of the KMA commercial sockeye salmon harvest from sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 67–69; Figures 21–24).

Northwest Kodiak

Northwest Kodiak fish only constituted greater than 5% of a mixture in 4 of the 47 strata analyzed. Harvest of Northwest Kodiak group fish occurred almost exclusively in the early temporal strata of the 2 sampling areas in the Central Section of the Northwest Kodiak District, Uganik-Kupreanof and Uyak, in 2014 and 2015. Overall, Northwest Kodiak fish contributions to the sampled annual KMA harvest were small, amounting to 0.8% (11,895 fish), 0.6% (9,569 fish), and 1.3% (3,938 fish) of the KMA commercial sockeye salmon harvest from sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 67–69; Figures 21–24).

Afognak

Afognak fish only constituted greater than 5% of a mixture in 1 of the 47 strata analyzed. Afognak fish were 10.9% of the harvest (3,446 fish) in the early temporal stratum of the Uganik Kupreanof sampling area in 2015 (Table 7). Overall, Afognak fish contributions to the sampled annual KMA harvest were small, amounting to 0.5% (7,057 fish), 0.5% (7,648 fish), and 0.4% (5,330 fish) of the KMA commercial sockeye salmon harvest from sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 67–69; Figures 21–24).

Eastside Kodiak

Eastside Kodiak fish only constituted greater than 5% of a mixture in 1 of the 47 strata analyzed. Eastside Kodiak fish were 16.4% of the harvest (5,127 fish) in the late temporal stratum of the Alitak sampling area in 2015 (Table 56). Overall, Eastside Kodiak fish contributions to the sampled annual KMA harvest were small, amounting to 0.7% (11,300 fish), 0.9% (15,339 fish), and 0.2% (2,988 fish) of the KMA commercial sockeye salmon harvest from sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 67–69; Figures 21–24).

Saltery (Spiridon)

Saltery fish constituted greater than 5% of a mixture in 24 of the 47 strata analyzed. Harvest of Saltery group fish was predominantly within the 2 sampling areas in the Central Section of the

Northwest Kodiak District, Uganik-Kupreanof and Uyak. On average 87% of the Saltery harvest occurred there (Figures 22–24). The remainder of Saltery harvest was largely in the 2 sampling areas in the Southwest Kodiak District, Karluk-Sturgeon and Ayakulik-Halibut Bay, with minimal harvest in Alitak and Igvak sampling areas. Most of the Saltery harvest occurred in the middle and late temporal strata. Overall, Saltery fish contributions to the sampled annual KMA harvest were relatively consistent across sampling years, amounting to 20.1% (305,476 fish), 17.4% (297,204 fish), and 13.6% (175,968 fish) of the KMA commercial sockeye salmon harvest from sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 67–69; Figures 21–24).

Cook Inlet

Cook Inlet fish constituted greater than 5% of a mixture in 34 of the 47 strata analyzed. Harvest of Cook Inlet fish was variable among years and areas. In 2014, 83% of the harvest of Cook Inlet fish within sampled areas of KMA occurred within the Ayakulik-Halibut Bay and Alitak areas (Figure 22). In 2015, when overall Cook Inlet harvest was higher, roughly 61% of the harvest occurred in the Ayakulik-Halibut Bay and Alitak areas, and 36% occurred in Uyak and Uganik-Kupreanof areas (Figure 23). In 2016, roughly 45% of the Cook Inlet harvest occurred in Igvak while the remainder was spread out among the Uganik-Kupreanof, Ayakulik-Halibut-Bay, Alitak, and Uyak sampling areas (Figure 24). Harvest of Cook Inlet fish was never greater than 5% of the total Karluk-Sturgeon sampling area harvests. Cook Inlet sockeye salmon harvest in the KMA predominantly occurred in the middle temporal stratum. Overall, Cook Inlet fish contributions to the sampled annual KMA harvest were variable across sampling years, amounting to 7.5% (113,972 fish), 36.6% (626,473 fish), and 29.6% (384,089 fish) of the KMA commercial sockeye salmon harvest from sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 67–69; Figures 21–24).

Prince William Sound

Prince William Sound fish only constituted greater than 5% of a mixture in 10 of the 47 strata analyzed. Harvest of Prince William Sound group fish was predominantly within the 2 sampling areas in the Central Section of the Northwest Kodiak District, Uganik-Kupreanof and Uyak. On average 59% of the Prince William Sound harvest occurred there (Figures 22–24). The remainder of Prince William Sound harvest was in the Ayakulik-Halibut Bay sampling area, with minimal harvest in the Karluk-Sturgeon, Alitak, and Igvak sampling areas. Most of the Prince William Sound harvest occurred in the early and middle temporal strata. Overall, Prince William Sound fish contributions to the sampled annual KMA harvest were small, amounting to 1.6% (23,716 fish), 3.6% (61,815 fish), and 1.2% (15,986 fish) of the KMA commercial sockeye salmon harvest from sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 67–69; Figures 21–24).

South of Cape Suckling

South of Cape Suckling fish never constituted greater than 5% of a mixture in any of the 47 strata analyzed. Overall, South of Cape Suckling fish contributions to the sampled annual KMA harvest were very small, amounting to 0.4% (5,656 fish), 0.3% (4,500 fish), and 0.4% (4,949 fish) of the KMA commercial sockeye salmon harvest from sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 67–69; Figures 21–24).

Estimates for KMA

Results from all spatiotemporal strata for each year were combined to estimate total KMA stock composition and stock-specific harvest summaries from June 1 through August 29 for sampled areas. While these estimates represent the major sockeye harvest in KMA during periods of active sockeye and pink salmon management, they do not include harvest after August 29 or spatial areas outside of the sampling plan, such as Eastside Kodiak District, Afognak District, Mainland District (North of Cape Igvak Section), Alitak District gillnet areas (Alitak Bay, Moser Bay and Olga Bay sections), 5 SHAs, and 1 THA (Foster and Dann 2014a; Foster and Dann 2015).

In 2014, the total KMA harvest in fisheries that were sampled was 1,523,042 sockeye salmon, representing 46.7% of the total KMA sockeye salmon harvest for 2014 (Jackson 2014). Of this sampled sockeye salmon harvest, 87.9% was attributed to the Kodiak regional reporting group and 7.5% was attributed to the Cook Inlet reporting group (Table 67; Figure 20). The most prominent Kodiak subregional reporting groups were Karluk (32.4%), Ayakulik/Frazer (26.0%), and Saltery (20.1%). The Kodiak regional reporting group harvest was 1,339,346 fish (493,692 Karluk group fish, 396,083 Ayakulik/Frazer group fish, and 305,476 Saltery group fish) and the Cook Inlet group was 113,972 fish (Table 67; Figures 21 and 22).

In 2015, the total KMA harvest in fisheries that were sampled was 1,709,784 sockeye salmon, representing 55.2% of the total KMA sockeye salmon harvest for 2015 (Jackson 2015). Of this sampled sockeye salmon harvest, 57.9% was attributed to the Kodiak regional reporting group and 36.6% was attributed to the Cook Inlet reporting group (Table 68; Figure 20). The most prominent Kodiak subregional reporting groups were Ayakulik/Frazer (19.3%), Saltery (17.4%), and Karluk (14.7%). The Kodiak regional reporting group harvest was 990,025 fish (329,848 Ayakulik/Frazer group fish, 297,204 Saltery group fish, and 252,170 Karluk group fish) and the Cook Inlet group was 626,472 fish (Table 68; Figures 21 and 23).

In 2016, the total KMA harvest in fisheries that were sampled was 1,296,193 sockeye salmon, representing 62.4% of the total KMA sockeye salmon harvest for 2016 (Jackson 2016). Of this sampled sockeye salmon harvest, 57.8% was attributed to the Kodiak regional reporting group, 29.6% was attributed to the Cook Inlet reporting group, and 9.8% was attributed to the Chignik regional reporting group (Table 69; Figure 20). The most prominent Kodiak subregional reporting groups were Karluk (25.4%), Saltery (13.6%), Ayakulik/Frazer (8.2%), and Uganik (7.4%). The Chignik subregional reporting groups consisted of 8.6% Black Lake fish and 1.2% Chignik Lake fish. The Kodiak regional reporting group harvest was 749,249 fish (328,862 Karluk group fish, 175,968 Saltery group fish, 106,364 Ayakulik/Frazer group fish, and 96,205 Uganik group fish), the Cook Inlet group was 384,089 fish, and the Chignik regional reporting group harvest was 127,576 fish (112,103 Black Lake group fish and 15,267 Chignik Lake group fish; Table 69; Figures 21 and 24).

Testing Assumption that Postsampling Harvest is of Local Stocks

Three temporal strata from Uganik-Kupreanof, Uyak, and Karluk-Sturgeon sampling areas representing the latest harvest from which we have samples (8/25–8/29, 2014; Appendix B) were tested to examine the validity of the assumption that post-August harvest was mostly *local* stocks. The Karluk reporting group dominated the harvest for all 3 areas, representing 91.9% of the late-August harvest from Uganik-Kupreanof, 82.1% of the harvest from Uyak, and 85.6% of the harvest from Karluk-Sturgeon sampling areas (Appendix D). The only other reporting group

that represented over 5% of the harvest in any stratum was the Upper Station/Akalura reporting group, with 5.5% of the harvest from Uganik-Kupreanof, 14.5% of the harvest from Uyak, and 12.7% of the harvest from Karluk-Sturgeon (Appendix D). These results support the assumption that post-August harvest was mostly *local* stocks. The study plan was not modified to extend sampling for this project beyond August 29, as management in September is predominantly for Karluk and Upper Station late-run sockeye and coho salmon, and almost all harvest in late August was of these 2 *local* stocks.

DISCUSSION

Samples were collected from 6 spatial areas throughout KMA over 3 temporal strata from June 1 through August 29 from 2014 to 2016. Of the 45,165 sockeye salmon tissue samples collected in 47 strata, 18,558 were genotyped and 18,327 were ultimately used for MSA. These samples were genotyped for 48 SNPs chosen specifically for MSA in KMA and analyzed with a robust baseline containing 65,332 individuals from 762 collections representing 473 populations in 6 regional and 14 subregional reporting groups. These reporting groups represent all major North American sockeye salmon stocks (Shedd et al. 2016a; Shedd et al. 2016b). These results represent a majority of sockeye salmon commercial harvests in KMA and should improve our understanding of stock productivity and migratory patterns, and provide information to evaluate assumptions built into management plans.

Like most other scientific studies, these analyses represent environmental and fishery conditions during a specific period of time. Nonetheless, these studies are conducted so that future scientific and policy activities may be better informed. However, while this 3-year data set provides some measure of interannual variability in environmental and fishery conditions, some caution must be exercised when extrapolating the results to years, areas, and temporal periods not analyzed because changes in relative abundance among reporting groups, prosecution of fisheries, or migratory behavior due to ocean conditions very likely affect distribution of stock-specific harvests among fisheries.

DEPARTURES FROM WASSIP METHODS

The methodology in this report built upon the robust approach developed for WASSIP, but differed in 5 major ways: 1) we assumed harvests included in this study were known without error, and did not incorporate the 5% CV that was incorporated in the WASSIP estimates of stock-specific catches (Dann et al. 2012a); 2) we reported the median as the primary estimate of central tendency due to its more realistic characterization of right skewed distributions (Dann et al. 2012a); 3) we did not calculate stock-specific harvest rates for any fisheries (Dann et al. 2012a); 4) we used an updated genetic baseline that included additional representation in Kodiak, Cook Inlet, and extended south of Cape Suckling to the Columbia River (Shedd et al. 2016a); and 5) reporting groups were updated to reflect the likely stocks harvested in KMA fisheries (Shedd et al. 2016a; Shedd et al. 2016b).

KMA MANAGEMENT IMPLICATIONS

Sampling Limitations

The impetus for this study was to provide analytically sound estimates of stocks harvested in KMA fisheries to better understand stock productivity and address management assumptions. The principal objective of this project was to sample the major directed sockeye salmon

commercial fisheries in marine waters of KMA. As discussed in the 2 operational plans outlining this project (Foster and Dann 2014a; Foster and Dann 2015), funding constraints limited the scope of this project to specific sampling areas and time periods. Outside of the sampling areas in this study are the Eastside Kodiak District, Afognak District, Mainland District (North of Cape Igvak Section), Alitak District gillnet areas (Alitak Bay, Moser Bay and Olga Bay sections), 5 SHAs, and 1 THA, with general openings targeting *local* pink, chum, and sockeye salmon (Figure 1). From 2014 to 2016, the average percent of the total KMA sockeye salmon harvest in these unsampled areas (those outside of the MSA sampling areas) was 31.3% (range: 30.8–32.5%). Additionally, sampling from the KMA sockeye salmon commercial harvest only occurred from June 1 to August 29 in all 3 years of this study. Overall, the stock composition and stock-specific harvest in this study represent 46.7%, 55.2%, and 62.4% of the total KMA sockeye salmon commercial harvest in 2014–2016.

Given these sampling constraints, the total stock-specific harvest of all reporting groups is certainly higher than measured in this study. This important caveat applies especially to Upper Station/Akalura, Ayakulik/Frazer, and Karluk reporting groups. Regarding the Upper Station/Akalura and Ayakulik/Frazer group harvest, it is important to consider that sampling areas did not include the gillnet sections within Alitak District that are terminal to Frazer and Upper Station/Akalura systems. In addition, a large portion of Upper Station/Akalura and Karluk group late-run harvest and escapement can occur in September, after sampling was terminated for this project. This was corroborated by the MSA estimates of the late-August harvest from 2014 with Upper Station/Akalura averaging 11.4% and Karluk averaging 87.9% (Appendix D).

Ayakulik/Frazer Reporting Group

The original baseline published for this study attempted to separate Red Lake (Ayakulik) and Frazer Lake populations into separate reporting groups in order to provide managers and stakeholders with stock-specific harvest of these important *local* stocks in Southwest Kodiak (Shedd et al. 2016a). While the populations of these 2 stocks are genetically distinct from each other, the level of differentiation is low and insufficient for MSA. This low level of genetic differentiation was not unexpected given Frazer's lengthy and varied stocking history which included Ayakulik as the primary brood source[b] (Burger et al. 2000). Concerns regarding poor MSA performance due to the low level of genetic differentiation between Ayakulik and Frazer populations prompted additional baseline testing described in Shedd et al. (2016b). The fishery scenario tests used to evaluate the baseline in hypothetical proportions expected in 2 different KMA fisheries suggested that the baseline cannot accurately and precisely estimate stock compositions of separate Ayakulik and Frazer reporting groups (Shedd et al. 2016b). However, when populations from Ayakulik and Frazer were collapsed into a single reporting group, accuracy and precision of stock composition estimates were greatly improved. In order to ensure precise, accurate estimates of stock composition for commercial harvests of sockeye salmon from 2014 to 2016, Ayakulik and Frazer populations were combined into a single, composite reporting group.

Management would benefit from estimates of stock-specific harvest of Ayakulik and Frazer stocks and future research should explore means to accomplish this objective. Pairing individual age data with genetic tissues to incorporate age as an informative mark in a Bayesian mixed

[b] Letter from Clint Stockley to Peter (last name not provided), titled Laura and Frazer Lakes, the Beginning. March 12, 1996. Available from Alaska Resources Library & Information Services, arlis.org (December 14, 2016).

stock analysis model and/or the development of more informative genetic markers could aid this effort.

Uganik Reporting Group

The majority of the Central Section is not managed specifically for Uganik Lake sockeye salmon but their presence in the fishery is obvious considering the geographic location. The Inner Uganik Bay Section (within the Uganik-Kupreanof sampling area) at the head of Uganik Bay is the primary management tool for Uganik Lake fish. There is no weir on Uganik River to enumerate fish so inseason management for this stock can be problematic.

Saltery Reporting Group

It is unknown what proportion of harvest from this group was of enhancement origin (i.e., Spiridon) or wild-stock origin, bound for Saltery Lake on the eastside of Kodiak. An important caveat of the estimated Saltery sockeye harvest is that the MSA sampling areas did not include the SBSHA. Sockeye salmon return annually to Telrod Cove in Spiridon Bay as a result of a juvenile stocking program in Spiridon Lake conducted by Kodiak Regional Aquaculture Association. The fish are harvested coincident to KMA commercial fisheries being managed for wild stock fish; remaining fish are harvested in a terminal fishery in the SBSHA in Telrod Cove. Sockeye salmon stocked into Spiridon Lake are taken annually from Saltery Lake, a wild system located on the eastside of Kodiak Island. The Saltery Lake broodstock is also used for netpen releases in Telrod Cove, the village of Ouzinkie, and Anton Larsen Bay in Northwest Kodiak. Considering the location of Saltery Lake and SBSHA and the relative magnitude of escapement/harvest in each, it is likely that the vast majority of Saltery group fish harvested in Uganik-Kupreanof and Uyak sampling areas on the west side of Kodiak were bound for the SBSHA (i.e., enhanced fish).

Cape Igvak Section

The Cape Igvak Section fishery in the KMA is allocated 15% of the total Chignik-bound sockeye salmon harvest. The Cape Igvak Salmon Management Plan, 5 AAC 18.360(d), stipulates that 90% of the sockeye salmon harvested in the Cape Igvak Section from June 1 to July 25 are of Chignik origin. The assumed percentage of Chignik-bound fish is based on information gathered during a tagging study conducted at Cape Igvak in 1969.[c] While only 3 of the 6 planned spatiotemporal strata were sampled due to lack of fishing, the MSA estimate of Chignik group stock composition never reached 90%.

No fishing occurred in the Cape Igvak Section in 2014. During 2015, the Cape Igvak Section fishery opened for a short amount of time in the middle stratum and 6,595 sockeye salmon were harvested (Table 1). The regulatory estimate of Chignik-bound fish in the Cape Igvak fishery through July 25 was 5,936 sockeye salmon (Wilburn and Stumpf 2016). The MSA estimate of Chignik-bound fish was 2,059 fish, which was 31.2% of the total Cape Igvak Section harvest in 2015 (Table 62).

During 2016, the Cape Igvak Section fishery opened in 2016 during the early stratum with 154,318 sockeye salmon harvested (Table 1), 74.1% of which were of Chignik origin (Table 64). During the middle stratum of 2016, Cape Igvak Section opened with 177,315 sockeye salmon

[c] ADF&G Region 2 Report. Unpublished. Stock identification of commercially-caught red salmon in the vicinity of Cape Igvak, 1968, 1969, 1970. Alaska Department of Fish and Game, Division of Commercial Fisheries, Anchorage.

harvested (Table 1); MSA estimates of Chignik reporting group was 5.6% (Table 65). The regulatory estimate of Chignik-bound fish harvested in the Cape Igvak fishery prior to July 25 was 298,469 sockeye salmon (Wilburn 2016). The MSA estimate of Chignik-bound fish was 124,510 fish, which was 37.5% of the total Cape Igvak harvest in 2016 (Table 66).

Harvest of Nonlocal Stocks

While *nonlocal* harvest of sockeye salmon in KMA commercial fisheries has been assumed in regulation and demonstrated in previous studies based on tagging (Appendix A), scale pattern analysis (Barrett and Swanton 1991, 1992), or average weight (Vining 1996), this project represents the first effort to use modern MSA techniques to quantify that harvest. The proportion of *nonlocal* harvest varied across years, accounting for 12.1% (2014), 32.1% (2015), and 32.2% (2016) of the KMA commercial sockeye salmon harvest from spatiotemporal periods analyzed in 2014–2016. The vast majority of *nonlocal* sockeye salmon harvest in this study was attributed to the Cook Inlet reporting group. While *nonlocal* sockeye salmon harvest occurred in all sampling areas, it was most prominent in Ayakulik-Halibut Bay, Alitak, and Igvak sampling areas, with additional harvest in the Uyak and Uganik-Kupreanof sampling areas. Most of the *nonlocal* harvest occurred during the middle temporal strata, when the management of KMA areas generally switches to pink salmon, with the exception of the Igvak sampling area. *Nonlocal* harvest was greatest in 2015, a year with an extremely large pink salmon run, extremely late run timing of sockeye salmon, and maximum July and August fishing effort in Kodiak (Jackson 2015).

SUMMARY OF MIGRATION CHARACTERISTICS

Although this study was not designed to understand migratory patterns, a comparison can be made to information collected during the past tagging studies. The historical tagging studies were conducted primarily in June so the temporal representation of the 2 types of studies differs (Appendix A). Historically, Karluk sockeye salmon demonstrated southward migration off the west side of Kodiak Island. Genetic estimates also demonstrate that pattern of southward migration toward Karluk. The presence of Karluk sockeye salmon in the Central Section confirms this assumption. Migration of major stocks occurs in both a clockwise and counterclockwise fashion around Kodiak Island as evidenced by the presence of Karluk and Saltery stock groups in all 5 sections on Kodiak Island included in this study.

Ayakulik and Olga Bay sockeye salmon were observed much less frequently on the westside than early tagging studies by Nicholson (1978) and especially Tyler et al. (1986). The difference between the modern MSA estimates and the historical estimates likely reflects both the changes in stock abundances and the presence of new enhanced stocks such as Spiridon (Saltery group).

FUTURE WORK AND SUMMARY

While this study provided analytically sound estimates of stocks harvested in KMA fisheries to better understand stock productivity and address management assumptions, these results may only have limited utility in formal run-reconstructions for 2 primary reasons. First, not all fishing areas were sampled, and sampling did not include harvest after August 29, when substantial numbers of Karluk and Upper Station late-run fish can be harvested. Second, the genetic baseline was unable to adequately distinguish between Ayakulik and Frazer stocks for the purposes of MSA (Shedd et al. 2016a; Shedd et al. 2016b). Given the lack of complete harvest information due to incomplete sampling of the total harvest and inability to distinguish between major stocks,

a formal comparison between traditional methods of run reconstruction on Kodiak (Wattum and Foster 2015; Wattum 2016) and MSA results from this study will be challenging and necessarily rely on many assumptions.

Management of commercial salmon fisheries in KMA is complex, as managers operate fisheries consisting of 3 distinct user groups that target 4 salmon species and are guided by 10 management plans in order to both maximize harvest and assure wild stock escapement for multiple systems and species. Results from this study indicate that stock-specific harvest varies among years due to run strength and the prosecution of fisheries. While the KMA is a mixed stock fishery, this study indicates that the closer fishing occurs to the system of origin, the more sockeye salmon of that stock are harvested.

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TABLES AND FIGURES

Table 1.–Summary of commercial fishery harvests and number of fish sampled and genotyped for sockeye salmon commercial fisheries in the Kodiak Management Area in 2014–2016 by sampling area and temporal stratum. The sample size goal for all strata in the plan was 380 fish analyzed.

Sampling Area	District or Section(s)	Temporal Stratum	2014				2015				2016			
			Period	Harvest	Samp.	Anlyz.	Period	Harvest	Samp.	Anlyz.	Period	Harvest	Samp.	Anlyz.
Uganik	253-11,12,13	Early	6/1–6/27	79,494	1,400	380	6/1–7/3	31,607	1,200	380	6/1–6/27	62,771	910	380
Kupreanof	14,31,32,33	Middle	6/28–7/25	128,836	1,400	380	7/4–8/1	215,645	800	380	6/28–7/25	138,281	900	380
	34,35	Late	7/26–8/29	163,843	1,220	665[a]	8/2–8/29	143,567	680	380	7/26–8/29	139,612	1,100	380
		Post Sampling	>8/29	111,718	Not in Plan		>8/29	101,682	Not in Plan		>8/29	13,874	Not in Plan	
Uyak	254-10,20,21	Early	6/1–6/27	102,346	1,400	380	6/1–7/3	49,515	1,215	380	6/1–6/27	37,238	900	380
	30,31,40,41	Middle	6/28–7/25	126,840	1,400	380	7/4–8/1	174,009	800	380	6/28–7/25	69,803	1,100	380
		Late	7/26–8/29	155,658	1,400	665[a]	8/2–8/29	126,126	697	380	7/26–8/29	126,837	1,000	380
		Post Sampling	>8/29	139,213	Not in Plan		>8/29	61,565	Not in Plan		>8/29	30,452	Not in Plan	
Karluk	255-10, 20	Early	6/1–6/27	56,018	1,092	380	6/1–7/3	35,183	800	380	6/1–6/27	13,856	600	380
Sturgeon	256-40	Middle	6/28–7/25	68,438	960	380	7/4–8/1	29,915	509	380	6/28–7/25	10,700	900	380
		Late	7/26–8/29	124,879	2,000	665[a]	8/2–8/29	63,532	800	380	7/26–8/29	113,445	800	380
		Post Sampling	>8/29	467,253	Not in Plan		>8/29	265,532	Not in Plan		>8/29	46,297	Not in Plan	
Ayakulik	256-10,15,20	Early	6/1–6/27	162,984	1,276	380	6/1–7/3	203,170	1,200	380	6/1–6/27	3,937[b]	220[b]	223[b]
Halibut Bay	25,30	Middle	6/28–7/25	175,205	600	380	7/4–8/1	384,390	800	380	6/28–7/25	120,068	1,000	380
		Late	7/26–8/29	57,066	1,050	380	8/2–8/29	20,619	400	380	7/26–8/29	33,721	800	380
		Post Sampling	>8/29	15,672	Not in Plan		>8/29	2,954	Not in Plan		>8/29	1,589	Not in Plan	
Alitak	257-10, 20	Early	6/1–6/27	Closed	No Samples		6/1–7/3	28,723	600	380	6/1–6/27	11,118	400	380
	50, 60, 70	Middle	6/28–7/25	115,998	1,100	380	7/4–8/1	165,894	800	380	6/28–7/25	61,930	885	380
		Late	7/26–8/29	5,437	742	380	8/2–8/29	31,294	800	380	7/26–8/29	21,243	1,309	380
		Post Sampling	>8/29	Closed	Not in Plan		>8/29	2,548	Not in Plan		>8/29	3,376	Not in Plan	
Igvak	262-75, 80	Early	6/1–6/27	Closed	No Samples		6/1–7/3	Closed	No Samples		6/1–6/27	154,318	1,400	380
	90, 95	Middle	6/28–7/25	Closed	No Samples		7/4–8/1	6,595	400	380	6/28–7/25	177,315	1,400	380
		Late	7/26–8/29	2,477	Not in Plan		8/2–8/29	1,552	Not in Plan		7/26–8/29	9,228	Not in Plan	
		Post Sampling	>8/29	Closed	Not in Plan		>8/29	Closed	Not in Plan		>8/29	Closed	Not in Plan	
Sampling Area and Temporal Strata Totals			6/1-8/29	1,523,042	17,040	6,175	6/1-8/29	1,709,784	12,501	6,080	6/1-8/29	1,296,193	15,624	6,303

[a] In 2014 we split the Late stratum for Uganik-Kupreanof, Uyak, and Karluk-Sturgeon into 2 substrata in order to better infer if the significant postsampling harvest was *local*. To this end, 285 additional fish were analyzed from the last commercial opening in the late stratum.

[b] Early strata harvest and samples in the Ayakulik-Halibut Bay sampling area in 2016 came exclusively from ADF&G test fishery harvest in the Inner Ayakulik Section.

Table 2.–Quality control (QC) results including the number of genotypes compared, discrepancy rates and estimated error rates of the collections genotyped for the KMA sockeye salmon commercial and test fishery samples.

	Discrepancy Rate[a]			
Genotypes Compared	Homo-homo	Homo-het	Overall	Error Rate[b]
70,992	0.02%	0.27%	0.29%	0.15%

[a] Discrepancy rates include the rate due to differences of alternate homozygote genotypes (Homo-homo), of homozygote and heterozygote genotypes (Homo-het), and the total discrepancy rate.

[b] Error rate assumes that discrepancies are the result of errors that are equally likely to have occurred in the production and QC genotyping process.

Table 3.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 1 ("Early"; June 1–27; Harvest = 79,494; n = 376) of Uganik-Kupreanof (statistical areas 253-11, 12, 13, 14, 31, 32, 33, 34, 35), 2014. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		6.6	4.4	9.5	0.00	6.7	1.6	5,273	3,466	7,545	5,359	1,247
Chignik		5.9	3.7	8.6	0.00	6.0	1.5	4,680	2,977	6,802	4,759	1,169
Kodiak		84.7	80.9	88.1	0.00	84.6	2.2	67,332	64,302	70,024	67,268	1,740
Cook Inlet		0.8	0.1	2.7	0.00	1.0	0.8	619	81	2,155	801	671
Prince William Sound		1.3	0.5	3.0	0.00	1.5	0.8	1,065	399	2,347	1,178	618
South of Cape Suckling		0.0	0.0	0.9	0.42	0.2	0.4	0	0	753	129	322
										Total	79,494	
Chignik	Black Lake	4.4	1.9	7.3	0.00	4.5	1.7	3,486	1,493	5,838	3,550	1,327
	Chignik Lake	1.2	0.0	4.3	0.14	1.5	1.5	977	0	3,424	1,209	1,172
Kodiak	Upper Station/Akalura	0.7	0.0	1.9	0.09	0.7	0.6	524	0	1,500	595	485
	Ayakulik/Frazer	15.8	12.3	19.7	0.00	15.9	2.2	12,571	9,813	15,629	12,623	1,775
	Karluk	20.1	15.8	24.8	0.00	20.2	2.7	16,000	12,591	19,712	16,052	2,166
	Uganik	15.2	11.6	19.2	0.00	15.3	2.3	12,073	9,251	15,229	12,133	1,819
	Northwest Kodiak	5.2	2.9	8.1	0.00	5.3	1.6	4,121	2,275	6,421	4,206	1,271
	Afognak	4.9	3.1	7.2	0.00	5.0	1.3	3,869	2,425	5,707	3,940	1,001
	Eastside Kodiak	0.0	0.0	0.9	0.47	0.1	0.4	0	0	715	110	317
	Saltery	22.1	18.1	26.4	0.00	22.2	2.5	17,565	14,359	21,003	17,608	2,023

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 4.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 2 ("Middle"; June 28–July 25; Harvest = 128,836; n = 376) of Uganik-Kupreanof (statistical areas 253-11, 12, 13, 14, 31, 32, 33, 34, 35), 2014. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	1.6	0.47	0.3	0.7	0	0	2,110	326	950
Chignik		3.4	1.8	5.7	0.00	3.5	1.2	4,403	2,260	7,316	4,545	1,551
Kodiak		89.3	85.8	92.4	0.00	89.2	2.0	115,105	110,499	119,036	114,977	2,609
Cook Inlet		0.4	0.0	2.8	0.36	0.8	1.0	498	0	3,570	1,003	1,265
Prince William Sound		6.1	3.9	8.8	0.00	6.2	1.5	7,839	5,016	11,356	7,965	1,935
South of Cape Suckling		0.0	0.0	0.0	0.90	0.0	0.1	0	0	10	19	150
										Total	128,836	
Chignik	Black Lake	0.9	0.0	2.3	0.06	1.0	0.7	1,137	0	2,992	1,266	934
	Chignik Lake	2.4	0.9	4.7	0.00	2.5	1.2	3,085	1,191	6,048	3,279	1,503
Kodiak	Upper Station/Akalura	0.0	0.0	1.5	0.58	0.3	0.6	0	0	1,974	412	717
	Ayakulik/Frazer	3.4	1.9	5.4	0.00	3.5	1.1	4,331	2,415	6,931	4,457	1,388
	Karluk	9.2	6.5	12.4	0.00	9.3	1.8	11,895	8,398	15,965	12,006	2,306
	Uganik	6.4	3.6	10.0	0.00	6.5	2.0	8,208	4,668	12,863	8,413	2,514
	Northwest Kodiak	0.0	0.0	1.1	0.47	0.2	0.4	0	0	1,428	251	529
	Afognak	0.7	0.0	2.0	0.05	0.8	0.6	927	0	2,515	1,051	780
	Eastside Kodiak	0.0	0.0	0.8	0.86	0.1	0.6	0	0	971	157	710
	Saltery	68.5	63.7	73.1	0.00	68.5	2.9	88,284	82,072	94,223	88,230	3,691

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 5.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 3 ("Late"; July 26–August 29; Harvest = 163,843; n = 654) of Uganik-Kupreanof (statistical areas 253-11, 12, 13, 14, 31, 32, 33, 34, 35), 2014. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.3	0.77	0.0	0.1	0	0	437	53	180
Chignik		0.7	0.3	1.2	0.00	0.7	0.3	1,109	476	2,008	1,159	472
Kodiak		96.3	95.1	97.3	0.00	96.3	0.7	157,851	155,740	159,484	157,761	1,148
Cook Inlet		1.9	1.3	2.6	0.00	1.9	0.4	3,123	2,100	4,331	3,159	680
Prince William Sound		0.1	0.0	0.7	0.24	0.2	0.2	143	0	1,119	313	396
South of Cape Suckling		0.8	0.2	1.8	0.00	0.9	0.5	1,245	384	2,939	1,398	807
										Total	163,843	
Chignik	Black Lake	0.0	0.0	0.0	0.86	0.0	0.0	0	0	13	7	53
	Chignik Lake	0.7	0.3	1.2	0.00	0.7	0.3	1,103	472	1,997	1,152	470
Kodiak	Upper Station/Akalura	4.4	2.2	7.2	0.00	4.5	1.5	7,194	3,677	11,751	7,386	2,465
	Ayakulik/Frazer	0.0	0.0	2.0	0.55	0.3	0.7	0	0	3,272	524	1,187
	Karluk	80.2	76.8	82.9	0.00	80.1	1.9	131,408	125,887	135,894	131,209	3,064
	Uganik	0.0	0.0	0.3	0.49	0.0	0.1	0	0	420	66	169
	Northwest Kodiak	0.0	0.0	0.4	0.59	0.1	0.1	0	0	636	125	234
	Afognak	0.0	0.0	0.0	0.84	0.0	0.0	0	0	33	12	71
	Eastside Kodiak	0.0	0.0	0.0	0.84	0.0	0.1	0	0	36	16	116
	Saltery	11.2	9.9	12.7	0.00	11.2	0.8	18,364	16,285	20,763	18,423	1,366

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 6.–Annual regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for Uganik-Kupreanof (statistical areas 253-11, 12, 13, 14, 31, 32, 33, 34, 35), 2014. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		1.5	1.0	2.3	0.00	1.5	0.4	5,551	3,604	8,495	5,738	1,562
Chignik		2.8	2.0	3.7	0.00	2.8	0.5	10,353	7,363	13,952	10,463	2,010
Kodiak		91.4	89.8	92.8	0.00	91.4	0.9	340,121	334,286	345,334	340,006	3,359
Cook Inlet		1.3	0.8	2.1	0.00	1.3	0.4	4,719	2,863	7,868	4,963	1,560
Prince William Sound		2.5	1.7	3.5	0.00	2.5	0.6	9,324	6,288	13,062	9,456	2,069
South of Cape Suckling		0.4	0.1	0.9	0.00	0.4	0.2	1,382	434	3,232	1,546	882
										Total	372,173	
Chignik	Black Lake	1.3	0.6	2.1	0.00	1.3	0.4	4,732	2,305	7,649	4,823	1,629
	Chignik Lake	1.5	0.7	2.5	0.00	1.5	0.5	5,459	2,762	9,144	5,640	1,962
Kodiak	Upper Station/Akalura	2.2	1.2	3.5	0.00	2.3	0.7	8,203	4,471	12,985	8,393	2,604
	Ayakulik/Frazer	4.7	3.7	5.9	0.00	4.7	0.7	17,431	13,712	22,075	17,603	2,559
	Karluk	42.8	40.8	44.7	0.00	42.8	1.2	159,308	151,963	166,443	159,268	4,400
	Uganik	5.5	4.2	7.0	0.00	5.5	0.8	20,466	15,736	26,016	20,613	3,130
	Northwest Kodiak	1.2	0.7	1.9	0.00	1.2	0.4	4,469	2,493	7,042	4,581	1,396
	Afognak	1.3	0.8	1.9	0.00	1.3	0.3	4,913	3,078	7,241	5,002	1,270
	Eastside Kodiak	0.0	0.0	0.4	0.38	0.1	0.2	2	0	1,671	284	788
	Saltery	33.4	31.4	35.3	0.00	33.4	1.2	124,286	116,890	131,529	124,261	4,454

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 7.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 1 ("Early"; June 1–July 3; Harvest = 31,607; n = 378) of Uganik-Kupreanof (statistical areas 253-11, 12, 13, 14, 31, 32, 33, 34, 35), 2015. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.2	0.0	2.2	0.26	0.5	0.8	63	0	683	171	254
Chignik		8.9	6.4	11.9	0.00	9.0	1.7	2,810	2,017	3,751	2,838	527
Kodiak		76.4	71.9	80.6	0.00	76.4	2.7	24,152	22,722	25,489	24,136	842
Cook Inlet		8.2	5.5	11.4	0.00	8.3	1.8	2,580	1,730	3,596	2,612	569
Prince William Sound		5.5	0.8	8.9	0.02	5.4	2.3	1,725	259	2,819	1,691	719
South of Cape Suckling		0.0	0.0	2.8	0.66	0.5	1.1	0	0	890	158	334
										Total	31,607	
Chignik	Black Lake	8.9	6.4	11.9	0.00	9.0	1.7	2,806	2,012	3,746	2,834	527
	Chignik Lake	0.0	0.0	0.0	0.87	0.0	0.1	0	0	7	5	34
Kodiak	Upper Station/Akalura	0.0	0.0	0.8	0.76	0.1	0.3	0	0	259	36	108
	Ayakulik/Frazer	2.2	0.7	4.4	0.00	2.3	1.1	687	208	1,378	725	359
	Karluk	13.9	10.4	18.0	0.00	14.0	2.3	4,404	3,280	5,682	4,434	730
	Uganik	30.6	26.0	35.5	0.00	30.7	2.9	9,681	8,233	11,208	9,697	905
	Northwest Kodiak	9.7	6.9	13.1	0.00	9.8	1.9	3,080	2,180	4,138	3,109	595
	Afognak	10.9	8.2	14.0	0.00	11.0	1.8	3,446	2,590	4,439	3,470	562
	Eastside Kodiak	0.0	0.0	0.6	0.84	0.1	0.3	0	0	178	24	101
	Saltery	8.3	5.6	11.5	0.00	8.4	1.8	2,611	1,761	3,628	2,641	567

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 8.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 2 ("Middle"; July 4–August 1; Harvest = 215,645; n = 379) of Uganik-Kupreanof (statistical areas 253-11, 12, 13, 14, 31, 32, 33, 34, 35), 2015. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

		Stock Composition						Stock-specific Harvest				
Reporting Group			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.2	0.87	0.0	0.2	0	0	368	88	480
Chignik		4.2	2.1	7.0	0.00	4.3	1.5	9,037	4,489	15,115	9,318	3,247
Kodiak		72.4	67.7	76.9	0.00	72.4	2.8	156,176	145,958	165,797	156,059	6,033
Cook Inlet		17.5	13.7	21.8	0.00	17.6	2.4	37,774	29,584	46,918	37,934	5,263
Prince William Sound		5.5	3.1	8.5	0.00	5.6	1.7	11,886	6,686	18,401	12,139	3,590
South of Cape Suckling		0.0	0.0	0.3	0.82	0.0	0.2	0	0	752	107	426
										Total	215,645	
Chignik	Black Lake	0.0	0.0	0.9	0.40	0.1	0.4	2	0	1,945	317	796
	Chignik Lake	4.0	2.0	6.8	0.00	4.2	1.5	8,725	4,207	14,764	9,000	3,236
Kodiak	Upper Station/Akalura	0.0	0.0	0.0	0.91	0.0	0.1	0	0	6	15	133
	Ayakulik/Frazer	1.4	0.4	2.9	0.00	1.5	0.8	2,974	877	6,361	3,210	1,702
	Karluk	9.2	6.4	12.5	0.00	9.3	1.9	19,845	13,791	26,898	20,034	3,995
	Uganik	4.5	2.4	7.4	0.00	4.7	1.6	9,812	5,068	16,033	10,087	3,357
	Northwest Kodiak	0.4	0.0	1.9	0.16	0.6	0.7	871	0	4,186	1,307	1,454
	Afognak	0.0	0.0	0.4	0.38	0.1	0.2	2	0	861	145	401
	Eastside Kodiak	0.0	0.0	0.0	0.89	0.1	0.4	0	0	93	117	811
	Saltery	56.2	51.2	61.1	0.00	56.2	3.0	121,181	110,481	131,688	121,143	6,445

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 9.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 3 ("Late"; August 2–29; Harvest = 143,567; n = 377) of Uganik-Kupreanof (statistical areas 253-11, 12, 13, 14, 31, 32, 33, 34, 35), 2015. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.0	0.92	0.0	0.1	0	0	3	12	138
Chignik		1.7	0.1	4.0	0.02	1.8	1.2	2,398	177	5,782	2,617	1,716
Kodiak		60.1	55.4	64.8	0.00	60.1	2.9	86,354	79,486	93,083	86,326	4,141
Cook Inlet		31.2	26.6	35.9	0.00	31.2	2.8	44,740	38,206	51,568	44,788	4,058
Prince William Sound		5.3	2.8	8.5	0.00	5.5	1.7	7,673	4,085	12,214	7,841	2,501
South of Cape Suckling		1.1	0.0	3.6	0.10	1.4	1.1	1,578	0	5,107	1,983	1,632
										Total	143,567	
Chignik	Black Lake	0.0	0.0	0.0	0.91	0.0	0.1	0	0	9	16	125
	Chignik Lake	1.7	0.1	4.0	0.02	1.8	1.2	2,382	156	5,770	2,601	1,718
Kodiak	Upper Station/Akalura	0.6	0.0	2.0	0.23	0.7	0.7	919	0	2,903	1,060	985
	Ayakulik/Frazer	0.0	0.0	0.0	0.89	0.0	0.0	0	0	9	8	70
	Karluk	21.2	17.5	25.3	0.00	21.3	2.4	30,477	25,141	36,280	30,567	3,385
	Uganik	3.0	1.4	5.3	0.00	3.1	1.2	4,338	2,047	7,606	4,519	1,711
	Northwest Kodiak	0.0	0.0	0.1	0.88	0.0	0.1	0	0	77	30	175
	Afognak	0.0	0.0	0.9	0.53	0.2	0.4	0	0	1,359	275	504
	Eastside Kodiak	0.2	0.0	0.9	0.00	0.3	0.3	304	23	1,282	433	426
	Saltery	34.4	29.9	39.1	0.00	34.4	2.8	49,391	42,929	56,083	49,435	4,000

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 10.–Annual regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for Uganik-Kupreanof (statistical areas 253-11, 12, 13, 14, 31, 32, 33, 34, 35), 2015. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

		Stock Composition						Stock-specific Harvest				
Reporting Group			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.3	0.25	0.1	0.1	96	0	1,085	272	557
Chignik		3.7	2.3	5.4	0.00	3.8	0.9	14,508	9,147	21,282	14,772	3,708
Kodiak		68.2	65.1	71.3	0.00	68.2	1.9	266,576	254,257	278,460	266,491	7,375
Cook Inlet		21.8	19.1	24.7	0.00	21.8	1.7	85,243	74,595	96,531	85,352	6,670
Prince William Sound		5.5	3.8	7.5	0.00	5.5	1.1	21,466	14,867	29,276	21,684	4,396
South of Cape Suckling		0.5	0.0	1.4	0.03	0.6	0.4	1,906	190	5,377	2,249	1,649
										Total	390,819	
Chignik	Black Lake	0.8	0.5	1.3	0.00	0.8	0.2	2,980	2,089	4,944	3,166	962
	Chignik Lake	2.9	1.6	4.6	0.00	3.0	0.9	11,344	6,075	18,028	11,605	3,664
Kodiak	Upper Station/Akalura	0.2	0.0	0.8	0.17	0.3	0.3	966	0	2,973	1,110	1,002
	Ayakulik/Frazer	1.0	0.4	1.8	0.00	1.0	0.4	3,715	1,531	7,150	3,949	1,745
	Karluk	14.0	11.9	16.4	0.00	14.1	1.4	54,892	46,530	63,961	55,022	5,308
	Uganik	6.2	4.7	8.0	0.00	6.2	1.0	24,057	18,366	31,075	24,301	3,880
	Northwest Kodiak	1.1	0.6	1.9	0.00	1.1	0.4	4,107	2,501	7,494	4,447	1,577
	Afognak	1.0	0.7	1.4	0.00	1.0	0.2	3,769	2,738	5,463	3,890	857
	Eastside Kodiak	0.1	0.0	0.4	0.00	0.1	0.2	351	28	1,611	575	917
	Saltery	44.3	41.1	47.5	0.00	44.3	1.9	173,213	160,683	185,687	173,197	7,610

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 11.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 1 ("Early"; June 1–27; Harvest = 62,771; n = 375) of Uganik-Kupreanof (statistical areas 253-11, 12, 13, 14, 31, 32, 33, 34, 35), 2016. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

		Stock Composition						Stock-specific Harvest				
Reporting Group			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	1.1	0.81	0.1	0.5	0	0	678	86	302
Chignik		0.5	0.0	2.2	0.13	0.7	0.8	323	0	1,389	450	477
Kodiak		89.6	86.1	92.7	0.00	89.5	2.0	56,269	54,019	58,171	56,205	1,268
Cook Inlet		7.3	4.6	10.4	0.00	7.4	1.8	4,565	2,912	6,526	4,622	1,101
Prince William Sound		1.9	0.7	4.5	0.00	2.2	1.2	1,195	448	2,831	1,365	749
South of Cape Suckling		0.0	0.0	0.3	0.87	0.1	0.4	0	0	186	45	223
										Total	62,771	
Chignik	Black Lake	0.5	0.0	2.2	0.15	0.7	0.8	321	0	1,385	447	476
	Chignik Lake	0.0	0.0	0.0	0.92	0.0	0.0	0	0	1	2	21
Kodiak	Upper Station/Akalura	0.0	0.0	0.0	0.90	0.0	0.1	0	0	5	8	64
	Ayakulik/Frazer	2.1	0.8	4.0	0.00	2.2	1.0	1,349	473	2,536	1,407	631
	Karluk	8.0	5.2	11.5	0.00	8.1	1.9	5,027	3,251	7,234	5,106	1,216
	Uganik	68.6	63.7	73.4	0.00	68.6	3.0	43,092	39,956	46,097	43,067	1,870
	Northwest Kodiak	3.3	1.6	5.5	0.00	3.4	1.2	2,066	1,035	3,423	2,126	730
	Afognak	2.8	1.5	4.7	0.00	2.9	1.0	1,782	918	2,978	1,844	633
	Eastside Kodiak	0.1	0.0	0.8	0.37	0.2	0.4	35	0	520	130	252
	Saltery	3.9	1.8	6.7	0.00	4.0	1.5	2,424	1,142	4,215	2,516	943

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 12.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 2 ("Middle"; June 28–July 25; Harvest = 138,281; n = 377) of Uganik-Kupreanof (statistical areas 253-11, 12, 13, 14, 31, 32, 33, 34, 35), 2016. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.0	0.89	0.0	0.1	0	0	36	26	189
Chignik		0.0	0.0	0.1	0.81	0.0	0.1	0	0	189	40	206
Kodiak		72.9	68.3	77.2	0.00	72.8	2.7	100,784	94,444	106,764	100,718	3,746
Cook Inlet		26.1	21.7	30.6	0.00	26.1	2.7	36,024	30,013	42,371	36,088	3,759
Prince William Sound		0.1	0.0	2.9	0.37	0.5	1.0	94	0	3,963	690	1,368
South of Cape Suckling		0.0	0.0	2.3	0.59	0.5	0.9	0	0	3,228	718	1,177
										Total	138,281	
Chignik	Black Lake	0.0	0.0	0.0	0.89	0.0	0.1	0	0	37	24	156
	Chignik Lake	0.0	0.0	0.0	0.90	0.0	0.1	0	0	9	16	134
Kodiak	Upper Station/Akalura	0.0	0.0	0.0	0.92	0.0	0.0	0	0	2	7	62
	Ayakulik/Frazer	0.0	0.0	0.1	0.81	0.0	0.1	0	0	132	33	179
	Karluk	9.5	7.0	12.5	0.00	9.6	1.7	13,192	9,661	17,327	13,300	2,339
	Uganik	14.8	11.1	19.0	0.00	14.9	2.4	20,508	15,324	26,299	20,614	3,341
	Northwest Kodiak	0.2	0.0	1.2	0.23	0.3	0.4	265	0	1,720	483	612
	Afognak	1.4	0.4	2.9	0.00	1.5	0.8	1,912	580	4,025	2,056	1,067
	Eastside Kodiak	0.0	0.0	0.7	0.79	0.1	0.3	0	0	1,023	139	484
	Saltery	46.3	41.2	51.5	0.00	46.3	3.1	64,073	56,982	71,201	64,087	4,317

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 13.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 3 ("Late"; July 26–August 29; Harvest = 139,612; n = 371) of Uganik-Kupreanof (statistical areas 253-11, 12, 13, 14, 31, 32, 33, 34, 35), 2016. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.0	0.90	0.0	0.2	0	0	18	46	337
Chignik		0.0	0.0	0.1	0.81	0.0	0.2	0	0	159	40	217
Kodiak		74.1	69.7	78.4	0.00	74.1	2.6	103,514	97,316	109,467	103,470	3,684
Cook Inlet		24.3	20.1	28.7	0.00	24.4	2.6	33,956	28,084	40,092	34,011	3,640
Prince William Sound		0.5	0.1	1.5	0.00	0.6	0.4	727	154	2,042	863	617
South of Cape Suckling		0.8	0.2	1.8	0.00	0.8	0.5	1,050	304	2,502	1,182	700
										Total	139,612	
Chignik	Black Lake	0.0	0.0	0.0	0.91	0.0	0.1	0	0	8	14	109
	Chignik Lake	0.0	0.0	0.0	0.90	0.0	0.1	0	0	20	26	189
Kodiak	Upper Station/Akalura	0.0	0.0	0.3	0.87	0.1	0.3	0	0	412	84	411
	Ayakulik/Frazer	0.0	0.0	0.0	0.92	0.0	0.0	0	0	2	7	65
	Karluk	53.9	49.3	58.4	0.00	53.9	2.8	75,234	68,763	81,540	75,207	3,892
	Uganik	0.4	0.0	2.3	0.10	0.7	0.8	586	0	3,277	975	1,131
	Northwest Kodiak	0.0	0.0	0.1	0.88	0.0	0.1	0	0	85	28	164
	Afognak	0.0	0.0	0.0	0.89	0.0	0.0	0	0	6	6	50
	Eastside Kodiak	0.0	0.0	5.1	0.75	0.7	1.8	0	0	7,155	1,039	2,461
	Saltery	18.6	14.9	22.7	0.00	18.7	2.4	26,032	20,795	31,724	26,124	3,332

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 14.–Annual regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for Uganik-Kupreanof (statistical areas 253-11, 12, 13, 14, 31, 32, 33, 34, 35), 2016. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.3	0.68	0.0	0.1	0	0	1,044	158	492
Chignik		0.1	0.0	0.5	0.11	0.2	0.2	388	0	1,601	530	563
Kodiak		76.5	73.8	79.0	0.00	76.4	1.6	260,447	251,393	269,171	260,392	5,403
Cook Inlet		21.9	19.4	24.5	0.00	21.9	1.6	74,674	66,010	83,632	74,720	5,351
Prince William Sound		0.7	0.3	1.9	0.00	0.9	0.5	2,481	1,087	6,497	2,918	1,716
South of Cape Suckling		0.5	0.1	1.4	0.00	0.6	0.4	1,552	381	4,721	1,945	1,390
										Total	340,664	
Chignik	Black Lake	0.1	0.0	0.4	0.14	0.1	0.2	355	0	1,475	485	511
	Chignik Lake	0.0	0.0	0.1	0.77	0.0	0.1	0	0	188	45	236
Kodiak	Upper Station/Akalura	0.0	0.0	0.2	0.75	0.0	0.1	0	0	591	99	420
	Ayakulik/Frazer	0.4	0.1	0.8	0.00	0.4	0.2	1,380	489	2,619	1,446	658
	Karluk	27.5	25.2	29.7	0.00	27.5	1.4	93,597	85,939	101,343	93,613	4,696
	Uganik	18.9	17.1	21.0	0.00	19.0	1.2	64,555	58,273	71,425	64,656	3,995
	Northwest Kodiak	0.7	0.4	1.3	0.00	0.8	0.3	2,523	1,266	4,394	2,637	967
	Afognak	1.1	0.6	1.8	0.00	1.1	0.4	3,784	2,091	6,131	3,905	1,243
	Eastside Kodiak	0.0	0.0	2.2	0.23	0.4	0.7	146	0	7,421	1,308	2,507
	Saltery	27.2	24.6	29.9	0.00	27.2	1.6	92,672	83,705	101,923	92,728	5,537

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 15.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 1 ("Early"; June 1–27; Harvest = 102,346; n = 378) of Uyak (statistical areas 254-10, 20, 21, 30, 31, 40, 41; does not include Spiridon Bay SHA 254-50), 2014. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

		Stock Composition						Stock-specific Harvest				
Reporting Group			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		2.0	1.0	3.6	0.00	2.1	0.8	2,066	992	3,660	2,161	821
Chignik		1.4	0.4	3.0	0.00	1.5	0.8	1,414	448	3,049	1,535	809
Kodiak		92.3	89.6	94.6	0.00	92.2	1.5	94,462	91,662	96,798	94,374	1,565
Cook Inlet		1.9	0.8	3.4	0.00	2.0	0.8	1,920	865	3,478	2,014	805
Prince William Sound		2.0	1.0	3.4	0.00	2.1	0.8	2,009	992	3,527	2,103	783
South of Cape Suckling		0.0	0.0	0.9	0.42	0.2	0.3	1	0	917	160	350
										Total	102,346	
Chignik	Black Lake	1.3	0.4	2.9	0.00	1.4	0.8	1,348	392	2,972	1,470	801
	Chignik Lake	0.0	0.0	0.4	0.51	0.1	0.2	0	0	421	65	206
Kodiak	Upper Station/Akalura	1.5	0.5	3.0	0.00	1.6	0.8	1,523	539	3,097	1,633	798
	Ayakulik/Frazer	18.4	14.7	22.5	0.00	18.5	2.4	18,819	15,021	23,008	18,894	2,422
	Karluk	30.8	26.0	35.7	0.00	30.8	3.0	31,477	26,605	36,572	31,528	3,030
	Uganik	18.0	14.2	22.2	0.00	18.1	2.4	18,449	14,568	22,699	18,520	2,480
	Northwest Kodiak	5.9	3.6	8.7	0.00	6.0	1.6	6,027	3,684	8,922	6,130	1,601
	Afognak	0.9	0.2	2.1	0.01	1.0	0.6	936	231	2,178	1,036	610
	Eastside Kodiak	0.0	0.0	0.6	0.46	0.1	0.3	0	0	662	107	291
	Saltery	16.1	12.5	20.0	0.00	16.1	2.3	16,457	12,827	20,485	16,525	2,330

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 16.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 2 ("Middle"; June 28–July 25; Harvest = 126,840; n = 380) of Uyak (statistical areas 254-10, 20, 21, 30, 31, 40, 41; does not include Spiridon Bay SHA 254-50), 2014. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.0	0.83	0.0	0.3	0	0	46	50	442
Chignik		1.1	0.2	2.7	0.02	1.2	0.8	1,385	194	3,437	1,544	1,006
Kodiak		90.4	87.2	93.1	0.00	90.3	1.8	114,686	110,653	118,111	114,572	2,272
Cook Inlet		5.5	3.5	8.0	0.00	5.6	1.4	6,994	4,441	10,129	7,101	1,734
Prince William Sound		2.1	0.6	4.2	0.00	2.2	1.1	2,689	755	5,364	2,811	1,437
South of Cape Suckling		0.0	0.0	3.2	0.64	0.6	1.2	0	0	4,094	763	1,478
										Total	126,840	
Chignik	Black Lake	0.0	0.0	1.3	0.68	0.2	0.5	0	0	1,706	272	624
	Chignik Lake	0.9	0.0	2.6	0.21	1.0	0.9	1,138	0	3,349	1,272	1,122
Kodiak	Upper Station/Akalura	0.0	0.0	0.8	0.77	0.1	0.3	0	0	1,017	127	422
	Ayakulik/Frazer	5.4	3.3	7.9	0.00	5.5	1.4	6,804	4,215	10,066	6,926	1,790
	Karluk	10.1	7.1	13.5	0.00	10.2	1.9	12,800	9,042	17,114	12,896	2,456
	Uganik	1.8	0.4	4.0	0.00	2.0	1.1	2,305	545	5,131	2,501	1,420
	Northwest Kodiak	0.0	0.0	1.9	0.46	0.3	0.7	0	0	2,361	389	856
	Afognak	0.2	0.0	1.2	0.20	0.3	0.4	256	0	1,488	431	520
	Eastside Kodiak	0.2	0.0	1.0	0.13	0.3	0.5	198	0	1,222	370	589
	Saltery	71.7	67.3	76.0	0.00	71.7	2.6	90,992	85,348	96,349	90,933	3,348

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 17.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 3 ("Late"; July 26–August 29; Harvest = 155,658; n = 657) of Uyak (statistical areas 254-10, 20, 21, 30, 31, 40, 41; does not include Spiridon Bay SHA 254-50), 2014. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.0	0.85	0.0	0.0	0	0	14	6	44
Chignik		0.0	0.0	0.1	0.73	0.0	0.1	0	0	78	17	91
Kodiak		98.6	97.5	99.4	0.00	98.5	0.6	153,485	151,790	154,686	153,396	890
Cook Inlet		0.7	0.1	1.6	0.01	0.8	0.5	1,136	210	2,546	1,223	723
Prince William Sound		0.4	0.1	1.1	0.00	0.5	0.3	671	149	1,687	763	490
South of Cape Suckling		0.1	0.0	0.5	0.04	0.2	0.2	170	2	777	253	265
										Total	155,658	
Chignik	Black Lake	0.0	0.0	0.0	0.85	0.0	0.0	0	0	13	6	43
	Chignik Lake	0.0	0.0	0.0	0.85	0.0	0.1	0	0	24	11	80
Kodiak	Upper Station/Akalura	7.5	5.4	9.9	0.00	7.5	1.4	11,664	8,359	15,415	11,750	2,152
	Ayakulik/Frazer	2.3	1.1	4.0	0.00	2.4	0.9	3,581	1,693	6,294	3,734	1,415
	Karluk	71.5	68.0	74.8	0.00	71.5	2.1	111,318	105,822	116,474	111,257	3,236
	Uganik	0.0	0.0	1.0	0.43	0.2	0.4	13	0	1,538	361	555
	Northwest Kodiak	0.0	0.0	0.0	0.85	0.0	0.0	0	0	17	8	59
	Afognak	0.0	0.0	0.0	0.86	0.0	0.0	0	0	12	5	36
	Eastside Kodiak	0.3	0.1	0.7	0.00	0.3	0.2	393	83	1,101	467	330
	Saltery	16.6	14.3	18.9	0.00	16.6	1.4	25,780	22,265	29,469	25,813	2,186

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 18.–Annual regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for Uyak (statistical areas 254-10, 20, 21, 30, 31, 40, 41; does not include Spiridon Bay SHA 254-50), 2014. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.5	0.3	1.0	0.00	0.6	0.2	2,093	1,006	3,779	2,217	933
Chignik		0.8	0.3	1.4	0.00	0.8	0.3	2,947	1,243	5,441	3,095	1,293
Kodiak		94.2	92.9	95.3	0.00	94.2	0.8	362,449	357,411	366,947	362,347	2,902
Cook Inlet		2.7	1.9	3.6	0.00	2.7	0.5	10,218	7,189	13,857	10,334	2,033
Prince William Sound		1.4	0.8	2.3	0.00	1.5	0.4	5,552	3,088	8,679	5,676	1,717
South of Cape Suckling		0.1	0.0	1.2	0.01	0.3	0.4	494	21	4,515	1,174	1,527
										Total	384,844	
Chignik	Black Lake	0.4	0.1	1.0	0.00	0.5	0.3	1,563	450	3,680	1,747	1,015
	Chignik Lake	0.3	0.0	0.9	0.10	0.4	0.3	1,208	0	3,460	1,348	1,141
Kodiak	Upper Station/Akalura	3.5	2.6	4.6	0.00	3.5	0.6	13,411	9,825	17,513	13,510	2,334
	Ayakulik/Frazer	7.7	6.3	9.1	0.00	7.7	0.9	29,466	24,281	35,172	29,552	3,315
	Karluk	40.4	38.3	42.6	0.00	40.5	1.3	155,669	147,375	164,057	155,688	5,079
	Uganik	5.5	4.4	6.9	0.00	5.6	0.8	21,271	16,769	26,368	21,383	2,920
	Northwest Kodiak	1.7	1.0	2.5	0.00	1.7	0.5	6,356	3,845	9,763	6,526	1,820
	Afognak	0.3	0.1	0.8	0.00	0.4	0.2	1,343	407	2,959	1,471	803
	Eastside Kodiak	0.2	0.1	0.6	0.00	0.2	0.2	774	204	2,185	944	738
	Saltery	34.6	32.6	36.6	0.00	34.6	1.2	133,287	125,647	140,857	133,273	4,636

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 19.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 1 ("Early"; June 1–July 3; Harvest = 49,515; n = 379) of Uyak (statistical areas 254-10, 20, 21, 30, 31, 40, 41; does not include Spiridon Bay SHA 254-50), 2015. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

		Stock Composition						Stock-specific Harvest				
Reporting Group			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.0	0.84	0.0	0.1	0	0	13	6	40
Chignik		4.4	2.6	6.7	0.00	4.5	1.3	2,171	1,291	3,319	2,220	620
Kodiak		64.3	59.5	68.9	0.00	64.2	2.9	31,827	29,455	34,111	31,813	1,414
Cook Inlet		17.2	13.5	21.2	0.00	17.2	2.4	8,492	6,667	10,507	8,526	1,170
Prince William Sound		13.3	8.4	17.3	0.00	13.1	2.7	6,565	4,155	8,590	6,503	1,336
South of Cape Suckling		0.0	0.0	5.8	0.68	0.9	2.1	0	0	2,854	447	1,023
										Total	49,515	
Chignik	Black Lake	4.4	2.6	6.7	0.00	4.5	1.2	2,161	1,284	3,303	2,210	617
	Chignik Lake	0.0	0.0	0.0	0.89	0.0	0.1	0	0	10	10	71
Kodiak	Upper Station/Akalura	0.0	0.0	0.1	0.85	0.0	0.1	0	0	29	11	64
	Ayakulik/Frazer	3.8	1.9	6.3	0.00	3.9	1.3	1,879	963	3,105	1,936	656
	Karluk	27.7	23.1	32.6	0.00	27.8	2.9	13,736	11,449	16,142	13,756	1,427
	Uganik	20.0	16.1	24.2	0.00	20.0	2.5	9,887	7,955	12,003	9,923	1,232
	Northwest Kodiak	6.1	3.6	9.2	0.00	6.2	1.7	3,002	1,781	4,567	3,065	854
	Afognak	1.9	0.9	3.5	0.00	2.0	0.8	962	438	1,755	1,012	406
	Eastside Kodiak	0.0	0.0	1.1	0.81	0.1	0.5	0	0	553	69	244
	Saltery	4.0	1.9	6.8	0.00	4.1	1.5	1,985	929	3,349	2,041	741

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 20.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 2 ("Middle"; July 4–August 1; Harvest = 174,009; n = 377) of Uyak (statistical areas 254-10, 20, 21, 30, 31, 40, 41; does not include Spiridon Bay SHA 254-50), 2015. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.0	0.92	0.0	0.0	0	0	3	8	84
Chignik		0.2	0.0	1.2	0.18	0.4	0.4	361	0	2,151	620	755
Kodiak		40.2	35.4	45.1	0.00	40.2	2.9	69,960	61,635	78,453	69,988	5,106
Cook Inlet		54.0	49.0	58.9	0.00	54.0	3.0	93,923	85,210	102,564	93,909	5,273
Prince William Sound		4.5	0.9	8.0	0.00	4.5	2.1	7,875	1,535	13,891	7,815	3,681
South of Cape Suckling		0.3	0.0	5.0	0.00	1.0	1.7	520	36	8,692	1,669	2,893
										Total	174,009	
Chignik	Black Lake	0.2	0.0	1.2	0.23	0.3	0.4	293	0	2,053	565	729
	Chignik Lake	0.0	0.0	0.1	0.87	0.0	0.2	0	0	217	55	296
Kodiak	Upper Station/Akalura	0.0	0.0	0.0	0.92	0.0	0.0	0	0	3	7	74
	Ayakulik/Frazer	0.0	0.0	1.1	0.42	0.2	0.4	7	0	1,841	398	675
	Karluk	6.8	4.5	9.4	0.00	6.8	1.5	11,758	7,904	16,422	11,913	2,600
	Uganik	2.8	0.9	5.3	0.00	2.9	1.3	4,822	1,600	9,229	5,044	2,345
	Northwest Kodiak	0.0	0.0	0.4	0.57	0.1	0.3	0	0	737	123	462
	Afognak	0.0	0.0	0.0	0.83	0.0	0.1	0	0	77	27	166
	Eastside Kodiak	0.0	0.0	0.0	0.92	0.0	0.1	0	0	3	14	151
	Saltery	30.1	25.7	34.7	0.00	30.1	2.7	52,377	44,712	60,440	52,462	4,779

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 21.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 3 ("Late"; August 2–29; Harvest = 126,126; n = 373) of Uyak (statistical areas 254-10, 20, 21, 30, 31, 40, 41; does not include Spiridon Bay SHA 254-50), 2015. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.0	0.92	0.0	0.1	0	0	2	7	65
Chignik		0.0	0.0	0.1	0.82	0.0	0.1	0	0	74	25	155
Kodiak		67.9	63.3	72.3	0.00	67.9	2.7	85,647	79,839	91,153	85,595	3,438
Cook Inlet		31.7	27.3	36.3	0.00	31.8	2.7	39,989	34,450	45,798	40,046	3,448
Prince William Sound		0.0	0.0	2.4	0.57	0.3	0.8	0	0	3,012	439	1,069
South of Cape Suckling		0.0	0.0	0.0	0.91	0.0	0.1	0	0	6	14	124
										Total	126,126	
Chignik	Black Lake	0.0	0.0	0.0	0.92	0.0	0.0	0	0	2	5	53
	Chignik Lake	0.0	0.0	0.0	0.90	0.0	0.1	0	0	17	20	146
Kodiak	Upper Station/Akalura	0.0	0.0	0.0	0.90	0.0	0.1	0	0	17	17	122
	Ayakulik/Frazer	0.0	0.0	0.5	0.82	0.1	0.3	0	0	681	92	348
	Karluk	38.1	33.7	42.6	0.00	38.1	2.7	47,994	42,457	53,697	48,026	3,418
	Uganik	0.2	0.0	2.3	0.37	0.6	0.8	294	0	2,905	808	1,038
	Northwest Kodiak	0.0	0.0	0.0	0.92	0.0	0.0	0	0	2	5	48
	Afognak	0.0	0.0	0.0	0.92	0.0	0.0	0	0	2	5	43
	Eastside Kodiak	0.0	0.0	0.0	0.91	0.0	0.2	0	0	5	23	241
	Saltery	29.0	24.7	33.5	0.00	29.0	2.7	36,573	31,179	42,248	36,620	3,361

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 22.–Annual regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for Uyak (statistical areas 254-10, 20, 21, 30, 31, 40, 41; does not include Spiridon Bay SHA 254-50), 2015. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.0	0.75	0.0	0.0	0	0	90	21	114
Chignik		0.8	0.4	1.3	0.00	0.8	0.3	2,723	1,537	4,705	2,867	990
Kodiak		53.6	50.6	56.6	0.00	53.6	1.8	187,386	177,000	197,848	187,392	6,341
Cook Inlet		40.8	37.7	43.8	0.00	40.8	1.8	142,488	131,893	153,019	142,484	6,425
Prince William Sound		4.2	2.3	6.2	0.00	4.2	1.2	14,790	7,917	21,529	14,757	4,100
South of Cape Suckling		0.2	0.0	2.7	0.00	0.6	0.9	791	49	9,469	2,130	3,134
										Total	349,650	
Chignik	Black Lake	0.8	0.4	1.3	0.00	0.8	0.3	2,641	1,497	4,551	2,781	956
	Chignik Lake	0.0	0.0	0.2	0.73	0.0	0.1	0	0	550	86	337
Kodiak	Upper Station/Akalura	0.0	0.0	0.1	0.74	0.0	0.0	0	0	199	35	156
	Ayakulik/Frazer	0.6	0.3	1.2	0.00	0.7	0.3	2,258	1,109	4,313	2,425	1,004
	Karluk	21.1	19.0	23.2	0.00	21.1	1.3	73,628	66,341	81,212	73,692	4,527
	Uganik	4.5	3.3	5.9	0.00	4.5	0.8	15,579	11,423	20,755	15,773	2,853
	Northwest Kodiak	0.9	0.5	1.4	0.00	0.9	0.3	3,091	1,822	4,888	3,193	972
	Afognak	0.3	0.1	0.5	0.00	0.3	0.1	983	446	1,829	1,043	441
	Eastside Kodiak	0.0	0.0	0.2	0.71	0.0	0.1	0	0	714	106	380
	Saltery	26.0	23.3	28.9	0.00	26.1	1.7	91,045	81,539	100,991	91,124	5,896

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 23.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 1 ("Early"; June 1–27; Harvest = 37,238; n = 377) of Uyak (statistical areas 254-10, 20, 21, 30, 31, 40, 41; does not include Spiridon Bay SHA 254-50), 2016. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

		Stock Composition						Stock-specific Harvest				
Reporting Group			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.3	0.79	0.0	0.2	0	0	129	18	65
Chignik		0.0	0.0	0.2	0.62	0.0	0.1	0	0	67	13	54
Kodiak		81.9	77.6	85.7	0.00	81.8	2.5	30,487	28,904	31,911	30,459	914
Cook Inlet		8.9	6.3	11.9	0.00	9.0	1.7	3,299	2,345	4,428	3,333	635
Prince William Sound		9.1	6.0	12.7	0.00	9.2	2.1	3,372	2,221	4,727	3,409	764
South of Cape Suckling		0.0	0.0	0.0	0.90	0.0	0.1	0	0	3	6	53
										Total	37,238	
Chignik	Black Lake	0.0	0.0	0.1	0.69	0.0	0.1	0	0	32	6	30
	Chignik Lake	0.0	0.0	0.0	0.90	0.0	0.1	0	0	5	6	45
Kodiak	Upper Station/Akalura	0.0	0.0	0.0	0.90	0.0	0.1	0	0	6	5	36
	Ayakulik/Frazer	4.6	2.6	7.3	0.00	4.7	1.4	1,698	954	2,710	1,748	539
	Karluk	19.0	15.1	23.1	0.00	19.0	2.4	7,057	5,627	8,604	7,082	906
	Uganik	51.3	46.2	56.4	0.00	51.3	3.1	19,102	17,204	20,989	19,098	1,152
	Northwest Kodiak	0.2	0.0	1.6	0.18	0.4	0.6	88	0	593	165	207
	Afognak	1.7	0.7	3.3	0.00	1.8	0.8	649	267	1,239	688	301
	Eastside Kodiak	0.0	0.0	0.3	0.86	0.1	0.3	0	0	96	20	98
	Saltery	4.3	2.3	6.9	0.00	4.4	1.4	1,609	874	2,583	1,653	523

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 24.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 2 ("Middle"; June 28–July 25; Harvest = 69,803; n = 378) of Uyak (statistical areas 254-10, 20, 21, 30, 31, 40, 41; does not include Spiridon Bay SHA 254-50), 2016. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.3	0.81	0.0	0.2	0	0	202	29	110
Chignik		0.0	0.0	0.0	0.84	0.0	0.1	0	0	13	6	40
Kodiak		80.9	76.9	84.5	0.00	80.8	2.3	56,478	53,662	59,006	56,424	1,623
Cook Inlet		16.2	12.7	20.0	0.00	16.2	2.2	11,283	8,894	13,960	11,336	1,538
Prince William Sound		2.7	1.2	4.9	0.00	2.8	1.2	1,854	828	3,452	1,958	810
South of Cape Suckling		0.0	0.0	0.2	0.87	0.1	0.4	0	0	141	50	277
										Total	69,803	
Chignik	Black Lake	0.0	0.0	0.0	0.92	0.0	0.0	0	0	1	2	22
	Chignik Lake	0.0	0.0	0.0	0.92	0.0	0.0	0	0	1	4	34
Kodiak	Upper Station/Akalura	0.0	0.0	1.2	0.75	0.2	0.5	0	0	847	117	318
	Ayakulik/Frazer	4.0	2.2	6.3	0.00	4.1	1.2	2,767	1,538	4,373	2,838	869
	Karluk	7.8	5.2	10.8	0.00	7.9	1.7	5,442	3,642	7,559	5,501	1,191
	Uganik	9.8	6.7	13.4	0.00	9.9	2.0	6,835	4,704	9,363	6,907	1,421
	Northwest Kodiak	0.0	0.0	2.4	0.48	0.7	0.9	4	0	1,670	469	610
	Afognak	0.0	0.0	0.0	0.85	0.0	0.1	0	0	24	10	63
	Eastside Kodiak	0.0	0.0	0.3	0.82	0.0	0.2	0	0	200	33	152
	Saltery	58.1	53.1	63.0	0.00	58.1	3.0	40,571	37,098	43,968	40,551	2,091

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 25.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 3 ("Late"; July 26–August 29; Harvest = 126,837; n = 377) of Uyak (statistical areas 254-10, 20, 21, 30, 31, 40, 41; does not include Spiridon Bay SHA 254-50), 2016. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	1.5	0.57	0.3	0.5	0	0	1,853	421	676
Chignik		0.0	0.0	0.0	0.84	0.0	0.1	0	0	33	14	93
Kodiak		89.5	86.5	92.2	0.00	89.5	1.7	113,580	109,703	116,936	113,484	2,210
Cook Inlet		9.3	6.7	12.3	0.00	9.4	1.7	11,808	8,520	15,656	11,917	2,176
Prince William Sound		0.0	0.0	0.4	0.75	0.1	0.3	0	0	533	86	369
South of Cape Suckling		0.6	0.1	1.6	0.01	0.7	0.5	804	172	2,043	915	591
										Total	126,837	
Chignik	Black Lake	0.0	0.0	0.0	0.92	0.0	0.0	0	0	2	5	47
	Chignik Lake	0.0	0.0	0.0	0.91	0.0	0.1	0	0	4	9	80
Kodiak	Upper Station/Akalura	1.5	0.0	3.1	0.06	1.6	0.9	1,890	0	3,995	1,974	1,147
	Ayakulik/Frazer	2.1	0.5	4.3	0.02	2.2	1.2	2,667	585	5,476	2,802	1,490
	Karluk	62.3	57.6	66.8	0.00	62.3	2.8	79,005	73,095	84,736	78,971	3,534
	Uganik	0.0	0.0	0.5	0.42	0.1	0.2	0	0	574	94	274
	Northwest Kodiak	0.0	0.0	0.0	0.92	0.0	0.0	0	0	1	4	40
	Afognak	0.0	0.0	0.0	0.92	0.0	0.0	0	0	3	6	60
	Eastside Kodiak	0.0	0.0	0.0	0.91	0.0	0.1	0	0	6	16	144
	Saltery	23.3	19.6	27.2	0.00	23.4	2.3	29,558	24,882	34,563	29,616	2,950

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 26.–Annual regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for Uyak (statistical areas 254-10, 20, 21, 30, 31, 40, 41; does not include Spiridon Bay SHA 254-50), 2016. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.8	0.38	0.2	0.3	57	0	1,905	468	684
Chignik		0.0	0.0	0.1	0.50	0.0	0.0	0	0	179	32	113
Kodiak		85.7	83.6	87.7	0.00	85.7	1.2	200,446	195,494	204,995	200,372	2,891
Cook Inlet		11.3	9.5	13.3	0.00	11.4	1.2	26,509	22,238	31,208	26,584	2,730
Prince William Sound		2.3	1.6	3.2	0.00	2.3	0.5	5,360	3,700	7,534	5,453	1,180
South of Cape Suckling		0.4	0.1	0.9	0.01	0.4	0.3	839	183	2,201	970	653
										Total	233,878	
Chignik	Black Lake	0.0	0.0	0.0	0.65	0.0	0.0	0	0	70	13	60
	Chignik Lake	0.0	0.0	0.0	0.77	0.0	0.0	0	0	90	19	96
Kodiak	Upper Station/Akalura	0.9	0.0	1.8	0.05	0.9	0.5	2,006	1	4,204	2,096	1,195
	Ayakulik/Frazer	3.1	2.0	4.5	0.00	3.2	0.8	7,264	4,634	10,554	7,387	1,804
	Karluk	39.2	36.4	41.8	0.00	39.2	1.6	91,587	85,203	97,819	91,565	3,834
	Uganik	11.1	9.9	12.5	0.00	11.2	0.8	26,055	23,121	29,235	26,099	1,860
	Northwest Kodiak	0.2	0.0	0.8	0.08	0.3	0.3	429	0	1,898	637	645
	Afognak	0.3	0.1	0.5	0.00	0.3	0.1	662	273	1,276	704	313
	Eastside Kodiak	0.0	0.0	0.2	0.66	0.0	0.1	0	0	412	68	230
	Saltery	30.7	28.2	33.3	0.00	30.7	1.6	71,791	65,883	77,852	71,817	3,639

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 27.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 1 ("Early"; June 1–27; Harvest = 56,018; n = 380) of Karluk-Sturgeon (statistical areas 255-10, 20; 256-40), 2014. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		2.3	1.0	4.2	0.00	2.4	1.0	1,292	545	2,376	1,355	564
Chignik		0.3	0.0	1.6	0.10	0.5	0.5	190	0	885	278	304
Kodiak		91.9	89.0	94.4	0.00	91.9	1.6	51,508	49,858	52,864	51,454	917
Cook Inlet		3.1	1.7	5.4	0.00	3.2	1.2	1,729	925	3,005	1,816	645
Prince William Sound		1.6	0.7	3.0	0.00	1.7	0.7	881	371	1,685	935	409
South of Cape Suckling		0.1	0.0	1.4	0.26	0.3	0.5	49	0	762	181	279
										Total	56,018	
Chignik	Black Lake	0.3	0.0	1.5	0.20	0.4	0.5	146	0	835	245	292
	Chignik Lake	0.0	0.0	0.4	0.51	0.1	0.2	0	0	206	33	106
Kodiak	Upper Station/Akalura	2.9	1.3	5.1	0.00	3.0	1.2	1,622	720	2,861	1,686	657
	Ayakulik/Frazer	35.7	30.4	41.1	0.00	35.7	3.3	19,980	17,010	23,035	20,000	1,837
	Karluk	47.0	40.9	52.9	0.00	47.0	3.7	26,303	22,935	29,651	26,306	2,047
	Uganik	1.5	0.4	3.1	0.01	1.6	0.8	816	218	1,742	878	471
	Northwest Kodiak	0.6	0.1	2.1	0.00	0.8	0.7	362	60	1,157	453	366
	Afognak	0.6	0.0	1.7	0.02	0.7	0.5	313	16	925	372	287
	Eastside Kodiak	0.8	0.0	5.0	0.14	1.5	1.8	425	0	2,792	868	983
	Saltery	1.5	0.5	3.0	0.00	1.6	0.8	830	290	1,708	891	440

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 28.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 2 ("Middle"; June 28–July 25; Harvest = 68,438; n = 370) of Karluk-Sturgeon (statistical areas 255-10, 20; 256-40), 2014. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	1.8	0.45	0.4	0.7	4	0	1,252	284	459
Chignik		3.3	1.7	5.5	0.00	3.4	1.2	2,264	1,155	3,768	2,338	800
Kodiak		90.7	87.3	93.5	0.00	90.6	1.9	62,061	59,759	63,995	61,992	1,294
Cook Inlet		3.5	1.9	5.7	0.00	3.6	1.2	2,379	1,278	3,928	2,462	815
Prince William Sound		1.6	0.6	3.6	0.01	1.8	1.0	1,096	383	2,475	1,218	656
South of Cape Suckling		0.0	0.0	1.1	0.59	0.2	0.5	0	0	787	143	316
										Total	68,438	
Chignik	Black Lake	0.0	0.0	0.1	0.88	0.1	0.3	0	0	98	35	194
	Chignik Lake	3.3	1.6	5.5	0.01	3.4	1.2	2,244	1,082	3,754	2,303	831
Kodiak	Upper Station/Akalura	0.0	0.0	1.3	0.55	0.2	0.5	0	0	863	156	316
	Ayakulik/Frazer	25.8	21.4	30.5	0.00	25.8	2.8	17,635	14,615	20,842	17,670	1,897
	Karluk	37.8	32.6	43.1	0.00	37.8	3.2	25,856	22,332	29,518	25,881	2,183
	Uganik	5.4	3.0	8.3	0.00	5.5	1.6	3,665	2,059	5,679	3,738	1,105
	Northwest Kodiak	0.2	0.0	1.4	0.21	0.3	0.5	115	0	925	239	333
	Afognak	0.0	0.0	1.3	0.68	0.2	0.5	0	0	906	154	328
	Eastside Kodiak	0.3	0.0	2.2	0.31	0.6	0.8	220	0	1,486	414	571
	Saltery	20.0	16.2	24.1	0.00	20.1	2.4	13,690	11,120	16,526	13,741	1,645

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 29.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 3 ("Late"; July 26–August 29; Harvest = 124,879; n = 657) of Karluk-Sturgeon (statistical areas 255-10, 20; 256-40), 2014. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (P = 0), mean, and standard deviation (SD).

		Stock Composition						Stock-specific Harvest				
Reporting Group			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.0	0.83	0.0	0.1	0	0	61	19	111
Chignik		0.3	0.0	1.1	0.18	0.4	0.4	343	0	1,341	449	462
Kodiak		99.0	98.0	99.7	0.00	99.0	0.5	123,685	122,430	124,493	123,603	639
Cook Inlet		0.4	0.1	1.0	0.00	0.4	0.3	484	110	1,264	559	367
Prince William Sound		0.0	0.0	0.5	0.41	0.1	0.2	14	0	576	128	217
South of Cape Suckling		0.0	0.0	0.4	0.45	0.1	0.2	5	0	558	120	210
										Total	124,879	
Chignik	Black Lake	0.0	0.0	0.0	0.85	0.0	0.0	0	0	18	8	50
	Chignik Lake	0.3	0.0	1.1	0.21	0.4	0.4	334	0	1,333	441	461
Kodiak	Upper Station/Akalura	9.5	7.2	12.2	0.00	9.6	1.5	11,887	8,948	15,195	11,953	1,899
	Ayakulik/Frazer	6.2	4.2	8.5	0.00	6.2	1.3	7,688	5,270	10,638	7,788	1,642
	Karluk	80.2	76.7	83.5	0.00	80.2	2.1	100,168	95,754	104,265	100,109	2,584
	Uganik	0.0	0.0	0.2	0.55	0.0	0.1	0	0	278	42	138
	Northwest Kodiak	0.0	0.0	0.0	0.85	0.0	0.0	0	0	12	5	35
	Afognak	0.0	0.0	0.0	0.85	0.0	0.0	0	0	13	5	36
	Eastside Kodiak	0.0	0.0	0.3	0.77	0.0	0.2	0	0	349	51	201
	Saltery	2.9	1.8	4.2	0.00	2.9	0.7	3,591	2,278	5,224	3,650	902

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 30.–Annual regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for Karluk-Sturgeon (statistical areas 255-10, 20; 256-40), 2014. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

		Stock Composition						Stock-specific Harvest				
Reporting Group			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.6	0.3	1.2	0.00	0.7	0.3	1,559	648	3,009	1,658	733
Chignik		1.2	0.6	1.9	0.00	1.2	0.4	2,986	1,605	4,797	3,065	972
Kodiak		95.1	93.9	96.2	0.00	95.1	0.7	237,111	234,121	239,751	237,049	1,718
Cook Inlet		1.9	1.3	2.7	0.00	1.9	0.4	4,754	3,182	6,779	4,837	1,103
Prince William Sound		0.9	0.5	1.5	0.00	0.9	0.3	2,183	1,149	3,756	2,281	805
South of Cape Suckling		0.1	0.0	0.6	0.08	0.2	0.2	307	0	1,387	444	470
										Total	249,335	
Chignik	Black Lake	0.1	0.0	0.4	0.18	0.1	0.1	176	0	959	287	355
	Chignik Lake	1.1	0.5	1.8	0.00	1.1	0.4	2,713	1,351	4,456	2,777	958
Kodiak	Upper Station/Akalura	5.5	4.2	6.9	0.00	5.5	0.8	13,723	10,577	17,260	13,795	2,033
	Ayakulik/Frazer	18.2	16.2	20.3	0.00	18.2	1.3	45,406	40,396	50,692	45,457	3,125
	Karluk	61.1	58.5	63.7	0.00	61.1	1.6	152,304	145,778	158,779	152,296	3,960
	Uganik	1.8	1.1	2.7	0.00	1.9	0.5	4,588	2,805	6,763	4,658	1,206
	Northwest Kodiak	0.2	0.1	0.7	0.00	0.3	0.2	581	127	1,662	697	497
	Afognak	0.2	0.0	0.6	0.02	0.2	0.2	421	34	1,408	532	440
	Eastside Kodiak	0.4	0.0	1.4	0.04	0.5	0.5	1,054	1	3,528	1,332	1,167
	Saltery	7.3	6.1	8.6	0.00	7.3	0.8	18,222	15,206	21,526	18,282	1,923

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 31.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 1 ("Early"; June 1–July 3; Harvest = 35,183; n = 375) of Karluk-Sturgeon (statistical areas 255-10, 20; 256-40), 2015. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.5	0.0	2.7	0.09	0.8	0.9	182	0	951	279	318
Chignik		0.2	0.0	1.8	0.38	0.5	0.7	64	0	647	174	232
Kodiak		94.7	91.8	96.9	0.00	94.5	1.5	33,305	32,299	34,077	33,261	543
Cook Inlet		0.1	0.0	1.8	0.39	0.4	0.6	23	0	625	158	226
Prince William Sound		3.6	1.8	6.0	0.00	3.7	1.3	1,271	628	2,111	1,307	455
South of Cape Suckling		0.0	0.0	0.0	0.90	0.0	0.1	0	0	6	4	31
										Total	35,183	
Chignik	Black Lake	0.0	0.0	1.6	0.54	0.3	0.6	0	0	555	122	203
	Chignik Lake	0.0	0.0	1.1	0.77	0.1	0.4	0	0	383	51	147
Kodiak	Upper Station/Akalura	4.2	2.5	6.5	0.00	4.4	1.2	1,494	885	2,297	1,531	432
	Ayakulik/Frazer	35.1	30.4	40.0	0.00	35.2	2.9	12,355	10,708	14,091	12,371	1,026
	Karluk	45.1	39.5	50.7	0.00	45.1	3.4	15,885	13,914	17,828	15,877	1,188
	Uganik	3.5	1.9	5.5	0.00	3.6	1.1	1,220	682	1,935	1,252	383
	Northwest Kodiak	3.5	1.5	6.1	0.00	3.6	1.4	1,232	537	2,148	1,272	494
	Afognak	2.0	0.8	3.7	0.00	2.1	0.9	687	291	1,288	725	308
	Eastside Kodiak	0.0	0.0	3.5	0.59	0.6	1.2	0	0	1,216	228	434
	Saltery	0.0	0.0	0.0	0.86	0.0	0.1	0	0	8	5	32

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 32.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 2 ("Middle"; July 4–August 1; Harvest = 29,915; n = 375) of Karluk-Sturgeon (statistical areas 255-10, 20; 256-40), 2015. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

		Stock Composition						Stock-specific Harvest				
Reporting Group			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.1	0.88	0.0	0.2	0	0	21	11	67
Chignik		0.0	0.0	0.7	0.74	0.1	0.3	0	0	218	29	98
Kodiak		67.7	63.3	72.0	0.00	67.7	2.6	20,258	18,928	21,532	20,248	790
Cook Inlet		29.1	24.8	33.6	0.00	29.2	2.7	8,711	7,425	10,061	8,722	799
Prince William Sound		2.8	1.1	5.4	0.00	3.0	1.3	846	343	1,611	894	391
South of Cape Suckling		0.0	0.0	0.0	0.89	0.0	0.3	0	0	6	11	90
										Total	29,915	
Chignik	Black Lake	0.0	0.0	0.6	0.83	0.1	0.3	0	0	177	23	90
	Chignik Lake	0.0	0.0	0.0	0.90	0.0	0.1	0	0	6	6	39
Kodiak	Upper Station/Akalura	0.0	0.0	0.1	0.69	0.0	0.1	0	0	39	8	35
	Ayakulik/Frazer	8.0	5.3	11.3	0.00	8.1	1.8	2,394	1,591	3,369	2,425	543
	Karluk	49.9	45.0	54.8	0.00	49.9	3.0	14,921	13,456	16,380	14,922	891
	Uganik	0.0	0.0	0.3	0.71	0.0	0.2	0	0	79	13	57
	Northwest Kodiak	0.0	0.0	1.1	0.43	0.3	0.4	1	0	332	76	122
	Afognak	1.7	0.6	3.2	0.00	1.8	0.8	495	192	962	525	238
	Eastside Kodiak	1.0	0.3	2.2	0.00	1.1	0.6	299	104	651	328	173
	Saltery	6.4	4.2	9.2	0.00	6.5	1.5	1,921	1,249	2,751	1,950	458

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 33.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 3 ("Late"; August 2–29; Harvest = 63,532; n = 375) of Karluk-Sturgeon (statistical areas 255-10, 20; 256-40), 2015. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

		Stock Composition						Stock-specific Harvest				
Reporting Group			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.0	0.91	0.0	0.1	0	0	2	4	37
Chignik		0.0	0.0	0.1	0.83	0.0	0.1	0	0	33	12	76
Kodiak		89.7	86.6	92.4	0.00	89.6	1.7	56,987	55,031	58,682	56,940	1,112
Cook Inlet		9.0	6.5	11.9	0.00	9.1	1.7	5,714	4,115	7,568	5,764	1,052
Prince William Sound		0.1	0.0	0.9	0.25	0.2	0.4	66	0	570	149	234
South of Cape Suckling		0.8	0.0	2.9	0.02	1.0	0.9	517	28	1,811	663	570
										Total	63,532	
Chignik	Black Lake	0.0	0.0	0.0	0.91	0.0	0.1	0	0	2	4	37
	Chignik Lake	0.0	0.0	0.0	0.91	0.0	0.1	0	0	3	8	66
Kodiak	Upper Station/Akalura	3.9	1.9	6.6	0.00	4.1	1.4	2,498	1,235	4,176	2,575	899
	Ayakulik/Frazer	0.3	0.0	1.8	0.20	0.5	0.7	162	0	1,168	322	416
	Karluk	78.8	74.6	82.7	0.00	78.7	2.5	50,056	47,369	52,530	50,016	1,564
	Uganik	0.0	0.0	0.6	0.84	0.1	0.3	0	0	412	54	219
	Northwest Kodiak	0.0	0.0	0.0	0.92	0.0	0.0	0	0	1	2	25
	Afognak	0.0	0.0	0.0	0.88	0.0	0.0	0	0	5	3	24
	Eastside Kodiak	0.0	0.0	1.2	0.83	0.1	0.5	0	0	785	91	335
	Saltery	6.0	3.9	8.6	0.00	6.1	1.5	3,821	2,459	5,483	3,876	924

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 34.–Annual regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for Karluk-Sturgeon (statistical areas 255-10, 20; 256-40), 2015. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

		Stock Composition						Stock-specific Harvest				
Reporting Group			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.2	0.0	0.8	0.08	0.2	0.3	194	0	986	295	326
Chignik		0.1	0.0	0.6	0.25	0.2	0.2	121	0	742	215	264
Kodiak		85.9	83.9	87.7	0.00	85.9	1.1	110,481	107,973	112,814	110,449	1,473
Cook Inlet		11.4	9.7	13.2	0.00	11.4	1.0	14,608	12,493	16,920	14,644	1,349
Prince William Sound		1.8	1.1	2.7	0.00	1.8	0.5	2,299	1,374	3,478	2,350	648
South of Cape Suckling		0.4	0.0	1.4	0.02	0.5	0.5	530	32	1,844	679	580
										Total	128,630	
Chignik	Black Lake	0.0	0.0	0.5	0.43	0.1	0.2	10	0	624	150	226
	Chignik Lake	0.0	0.0	0.3	0.65	0.1	0.1	0	0	431	65	167
Kodiak	Upper Station/Akalura	3.1	2.0	4.6	0.00	3.2	0.8	4,045	2,588	5,879	4,113	1,005
	Ayakulik/Frazer	11.7	10.2	13.4	0.00	11.8	1.0	15,081	13,132	17,225	15,118	1,244
	Karluk	62.8	60.0	65.6	0.00	62.8	1.7	80,839	77,210	84,333	80,816	2,165
	Uganik	1.0	0.5	1.6	0.00	1.0	0.3	1,266	702	2,116	1,320	446
	Northwest Kodiak	1.0	0.5	1.7	0.00	1.1	0.4	1,311	589	2,251	1,351	509
	Afognak	0.9	0.5	1.5	0.00	1.0	0.3	1,217	678	1,949	1,253	390
	Eastside Kodiak	0.3	0.1	1.4	0.00	0.5	0.4	427	126	1,856	646	578
	Saltery	4.5	3.3	5.9	0.00	4.5	0.8	5,780	4,223	7,609	5,831	1,030

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 35.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 1 ("Early"; June 1–27; Harvest = 13,856; n = 378) of Karluk-Sturgeon (statistical areas 255-10, 20; 256-40), 2016. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		3.0	1.7	4.8	0.00	3.1	1.0	414	230	666	426	134
Chignik		1.3	0.4	2.7	0.01	1.4	0.7	178	55	378	192	100
Kodiak		90.6	87.5	93.2	0.00	90.5	1.8	12,550	12,120	12,917	12,539	243
Cook Inlet		0.0	0.0	0.0	0.89	0.0	0.1	0	0	5	3	16
Prince William Sound		2.6	0.9	6.5	0.00	3.1	1.8	363	120	895	431	256
South of Cape Suckling		2.0	0.0	5.1	0.40	1.9	1.9	277	0	704	266	265
										Total	13,856	
Chignik	Black Lake	0.0	0.0	0.6	0.82	0.1	0.3	0	0	89	11	43
	Chignik Lake	1.2	0.1	2.7	0.04	1.3	0.8	170	10	370	181	105
Kodiak	Upper Station/Akalura	4.9	3.0	7.2	0.00	5.0	1.3	674	416	1,004	687	180
	Ayakulik/Frazer	22.2	17.9	26.8	0.00	22.2	2.7	3,073	2,484	3,713	3,083	373
	Karluk	56.0	50.7	61.2	0.00	56.0	3.2	7,760	7,021	8,485	7,757	445
	Uganik	5.6	3.6	8.2	0.00	5.7	1.4	778	492	1,132	790	196
	Northwest Kodiak	0.4	0.0	2.2	0.21	0.7	0.8	58	0	309	94	107
	Afognak	0.4	0.0	1.6	0.22	0.5	0.5	58	0	221	75	76
	Eastside Kodiak	0.0	0.0	2.0	0.65	0.4	0.7	0	0	274	51	102
	Saltery	0.0	0.0	0.0	0.91	0.0	0.1	0	0	1	2	15

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 36.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 2 ("Middle"; June 28–July 25; Harvest = 10,700; n = 366) of Karluk-Sturgeon (statistical areas 255-10, 20; 256-40), 2016. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.5	0.73	0.1	0.4	0	0	55	10	48
Chignik		0.0	0.0	0.7	0.74	0.1	0.4	0	0	77	10	38
Kodiak		76.5	72.1	80.6	0.00	76.4	2.6	8,185	7,714	8,622	8,178	276
Cook Inlet		10.8	7.7	14.4	0.00	10.9	2.0	1,157	828	1,544	1,168	218
Prince William Sound		12.4	8.9	16.2	0.00	12.4	2.2	1,322	952	1,737	1,331	238
South of Cape Suckling		0.0	0.0	0.1	0.83	0.0	0.2	0	0	7	3	20
										Total	10,700	
Chignik	Black Lake	0.0	0.0	0.5	0.85	0.1	0.3	0	0	57	8	34
	Chignik Lake	0.0	0.0	0.0	0.88	0.0	0.2	0	0	3	2	17
Kodiak	Upper Station/Akalura	1.2	0.3	2.8	0.00	1.4	0.8	132	36	302	146	83
	Ayakulik/Frazer	17.1	13.4	21.2	0.00	17.2	2.4	1,826	1,432	2,271	1,835	255
	Karluk	32.3	27.5	37.3	0.00	32.3	3.0	3,455	2,937	3,986	3,457	318
	Uganik	7.0	4.2	10.3	0.00	7.1	1.9	745	453	1,102	757	198
	Northwest Kodiak	0.0	0.0	0.0	0.89	0.0	0.1	0	0	3	2	14
	Afognak	1.0	0.3	2.3	0.01	1.1	0.6	109	31	248	120	68
	Eastside Kodiak	0.9	0.3	2.2	0.00	1.0	0.6	100	28	231	111	64
	Saltery	16.3	12.7	20.3	0.00	16.3	2.3	1,740	1,354	2,177	1,749	250

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 37.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 3 ("Late"; July 26–August 29; Harvest = 113,445; n = 375) of Karluk-Sturgeon (statistical areas 255-10, 20; 256-40), 2016. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

		Stock Composition						Stock-specific Harvest				
Reporting Group			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.2	0.86	0.0	0.2	0	0	218	38	182
Chignik		0.0	0.0	0.1	0.82	0.0	0.1	0	0	89	23	123
Kodiak		97.8	96.0	99.0	0.00	97.7	0.9	110,921	108,906	112,285	110,800	1,039
Cook Inlet		1.3	0.1	3.3	0.00	1.4	1.0	1,471	123	3,749	1,638	1,145
Prince William Sound		0.1	0.0	1.8	0.19	0.5	0.7	125	0	2,097	527	748
South of Cape Suckling		0.3	0.0	1.1	0.02	0.4	0.4	302	14	1,222	419	402
										Total	113,445	
Chignik	Black Lake	0.0	0.0	0.0	0.90	0.0	0.1	0	0	15	15	103
	Chignik Lake	0.0	0.0	0.0	0.91	0.0	0.1	0	0	4	8	68
Kodiak	Upper Station/Akalura	2.6	0.0	4.9	0.07	2.6	1.4	2,976	0	5,610	2,984	1,580
	Ayakulik/Frazer	0.0	0.0	1.2	0.17	0.3	0.5	42	0	1,387	293	514
	Karluk	91.0	87.6	94.1	0.00	90.9	2.0	103,210	99,420	106,783	103,164	2,228
	Uganik	0.0	0.0	0.2	0.56	0.0	0.1	0	0	176	31	116
	Northwest Kodiak	0.2	0.0	0.8	0.00	0.3	0.3	213	16	914	306	305
	Afognak	0.0	0.0	0.0	0.91	0.0	0.0	0	0	2	5	42
	Eastside Kodiak	0.0	0.0	0.0	0.91	0.0	0.1	0	0	4	11	99
	Saltery	3.4	1.9	5.4	0.00	3.5	1.1	3,904	2,184	6,175	4,007	1,223

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 38.–Annual regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for Karluk-Sturgeon (statistical areas 255-10, 20; 256-40), 2016. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

		Stock Composition						Stock-specific Harvest				
Reporting Group			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.3	0.2	0.6	0.00	0.3	0.2	434	237	811	475	231
Chignik		0.1	0.0	0.3	0.00	0.2	0.1	195	61	466	225	163
Kodiak		95.4	93.9	96.5	0.00	95.3	0.8	131,624	129,528	133,131	131,517	1,103
Cook Inlet		1.9	0.9	3.6	0.00	2.0	0.8	2,645	1,242	4,947	2,808	1,168
Prince William Sound		1.5	1.0	2.9	0.00	1.7	0.6	2,078	1,339	3,937	2,288	822
South of Cape Suckling		0.5	0.0	1.1	0.01	0.5	0.4	628	43	1,587	688	485
										Total	138,001	
Chignik	Black Lake	0.0	0.0	0.1	0.66	0.0	0.1	0	0	191	34	117
	Chignik Lake	0.1	0.0	0.3	0.04	0.1	0.1	175	19	393	191	126
Kodiak	Upper Station/Akalura	2.8	0.6	4.7	0.00	2.8	1.2	3,810	879	6,462	3,818	1,592
	Ayakulik/Frazer	3.7	3.1	4.7	0.00	3.8	0.5	5,115	4,294	6,476	5,210	684
	Karluk	82.9	80.1	85.6	0.00	82.9	1.7	114,420	110,544	118,099	114,378	2,291
	Uganik	1.1	0.8	1.5	0.00	1.1	0.2	1,558	1,124	2,090	1,577	301
	Northwest Kodiak	0.2	0.0	0.7	0.00	0.3	0.2	323	47	1,033	403	324
	Afognak	0.1	0.0	0.3	0.00	0.1	0.1	184	56	394	200	110
	Eastside Kodiak	0.1	0.0	0.3	0.00	0.1	0.1	133	34	435	173	156
	Saltery	4.1	2.8	5.8	0.00	4.2	0.9	5,661	3,894	7,963	5,758	1,248

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 39.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 1 ("Early"; June 1–27; Harvest = 162,984; n = 378) of Ayakulik-Halibut Bay (statistical areas 256-10, 15, 20, 25, 30), 2014. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

		Stock Composition						Stock-specific Harvest				
Reporting Group			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		1.5	0.6	3.0	0.00	1.6	0.8	2,479	900	4,964	2,648	1,258
Chignik		0.0	0.0	0.8	0.22	0.2	0.3	26	0	1,238	251	468
Kodiak		87.4	84.3	90.2	0.00	87.4	1.8	142,494	137,343	147,040	142,379	2,951
Cook Inlet		7.1	5.0	9.7	0.00	7.2	1.4	11,585	8,095	15,822	11,723	2,360
Prince William Sound		2.4	1.2	4.1	0.00	2.5	0.9	3,866	1,944	6,639	4,019	1,451
South of Cape Suckling		1.0	0.0	3.3	0.09	1.2	1.1	1,625	0	5,303	1,964	1,719
										Total	162,984	
Chignik	Black Lake	0.0	0.0	0.6	0.43	0.1	0.2	1	0	958	165	381
	Chignik Lake	0.0	0.0	0.3	0.52	0.1	0.2	0	0	528	86	290
Kodiak	Upper Station/Akalura	2.8	1.5	4.6	0.00	2.9	1.0	4,539	2,421	7,484	4,692	1,555
	Ayakulik/Frazer	71.3	66.8	75.6	0.00	71.3	2.7	116,247	108,932	123,179	116,180	4,340
	Karluk	10.2	7.0	13.9	0.00	10.3	2.1	16,588	11,405	22,595	16,741	3,417
	Uganik	0.5	0.0	1.8	0.10	0.6	0.6	768	0	2,856	991	958
	Northwest Kodiak	0.0	0.0	0.7	0.48	0.1	0.3	0	0	1,151	173	485
	Afognak	0.0	0.0	0.1	0.56	0.0	0.1	0	0	213	37	137
	Eastside Kodiak	0.2	0.0	1.0	0.05	0.3	0.3	348	0	1,603	519	562
	Saltery	1.8	0.7	3.4	0.00	1.9	0.8	2,897	1,144	5,476	3,046	1,337

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 40.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 2 ("Middle"; June 28–July 25; Harvest = 175,205; n = 379) of Ayakulik-Halibut Bay (statistical areas 256-10, 15, 20, 25, 30), 2014. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

		Stock Composition						Stock-specific Harvest				
Reporting Group			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		4.1	1.8	6.6	0.00	4.2	1.4	7,202	3,234	11,617	7,294	2,535
Chignik		0.0	0.0	0.2	0.80	0.0	0.2	0	0	281	59	295
Kodiak		71.2	67.0	75.2	0.00	71.2	2.5	124,764	117,354	131,810	124,708	4,398
Cook Inlet		23.6	19.5	28.0	0.00	23.6	2.6	41,313	34,191	49,084	41,434	4,525
Prince William Sound		0.5	0.1	2.6	0.00	0.8	0.8	958	175	4,502	1,424	1,469
South of Cape Suckling		0.0	0.0	1.1	0.75	0.2	0.5	0	0	1,940	286	898
										Total	175,205	
Chignik	Black Lake	0.0	0.0	0.0	0.91	0.0	0.1	0	0	6	14	119
	Chignik Lake	0.0	0.0	0.1	0.88	0.0	0.2	0	0	90	45	271
Kodiak	Upper Station/Akalura	2.0	0.7	3.8	0.00	2.1	0.9	3,428	1,272	6,658	3,625	1,660
	Ayakulik/Frazer	51.7	47.0	56.3	0.00	51.7	2.8	90,666	82,374	98,721	90,621	4,971
	Karluk	1.0	0.0	4.0	0.10	1.3	1.3	1,725	0	6,995	2,338	2,362
	Uganik	0.0	0.0	0.0	0.90	0.0	0.1	0	0	16	27	207
	Northwest Kodiak	0.0	0.0	0.0	0.89	0.0	0.1	0	0	32	21	141
	Afognak	0.0	0.0	0.3	0.83	0.0	0.2	0	0	588	83	328
	Eastside Kodiak	2.6	1.4	4.7	0.00	2.8	1.1	4,617	2,426	8,175	4,880	1,846
	Saltery	13.1	10.0	16.6	0.00	13.2	2.0	22,990	17,579	29,057	23,113	3,487

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 41.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 3 ("Late"; July 26–August 29; Harvest = 57,066; n = 374) of Ayakulik-Halibut Bay (statistical areas 256-10, 15, 20, 25, 30), 2014. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

		Stock Composition						Stock-specific Harvest				
Reporting Group			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.7	0.1	2.0	0.01	0.9	0.6	423	86	1,169	499	348
Chignik		0.7	0.1	2.0	0.00	0.9	0.6	427	80	1,163	499	345
Kodiak		92.0	89.2	94.3	0.00	91.9	1.6	52,483	50,895	53,825	52,439	894
Cook Inlet		5.2	3.2	7.6	0.00	5.3	1.4	2,959	1,825	4,359	3,006	772
Prince William Sound		0.2	0.0	0.9	0.10	0.3	0.3	95	0	509	155	194
South of Cape Suckling		0.7	0.2	1.8	0.00	0.8	0.5	412	119	1,007	469	285
										Total	57,066	
Chignik	Black Lake	0.0	0.0	0.4	0.83	0.1	0.2	0	0	248	32	125
	Chignik Lake	0.7	0.0	2.0	0.07	0.8	0.6	401	0	1,146	466	356
Kodiak	Upper Station/Akalura	21.6	17.6	25.8	0.00	21.6	2.5	12,307	10,071	14,719	12,341	1,410
	Ayakulik/Frazer	52.1	47.0	57.2	0.00	52.1	3.1	29,735	26,842	32,618	29,735	1,758
	Karluk	12.7	9.0	16.8	0.00	12.8	2.4	7,239	5,161	9,593	7,287	1,352
	Uganik	0.0	0.0	0.1	0.88	0.0	0.1	0	0	53	15	82
	Northwest Kodiak	0.0	0.0	0.0	0.92	0.0	0.0	0	0	1	2	18
	Afognak	0.0	0.0	0.0	0.92	0.0	0.0	0	0	1	3	25
	Eastside Kodiak	0.7	0.1	3.1	0.00	1.1	1.0	398	70	1,778	602	558
	Saltery	4.2	2.5	6.4	0.00	4.3	1.2	2,403	1,424	3,664	2,455	685

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 42.–Annual regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for Ayakulik-Halibut Bay (statistical areas 256-10, 15, 20, 25, 30), 2014. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero ($P = 0$), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	$P = 0$	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		2.6	1.5	3.9	0.00	2.6	0.7	10,318	5,939	15,360	10,444	2,852
Chignik		0.2	0.0	0.5	0.00	0.2	0.2	637	131	2,083	808	653
Kodiak		80.9	78.6	83.0	0.00	80.8	1.4	319,597	310,580	328,170	319,518	5,362
Cook Inlet		14.2	12.1	16.4	0.00	14.2	1.3	56,044	47,899	64,818	56,166	5,149
Prince William Sound		1.3	0.7	2.4	0.00	1.4	0.5	5,280	2,882	9,457	5,601	2,066
South of Cape Suckling		0.6	0.1	1.6	0.00	0.7	0.5	2,300	347	6,512	2,718	1,972
										Total	395,255	
Chignik	Black Lake	0.0	0.0	0.3	0.36	0.1	0.1	8	0	1,077	211	419
	Chignik Lake	0.1	0.0	0.4	0.03	0.2	0.1	474	11	1,561	597	535
Kodiak	Upper Station/Akalura	5.2	4.2	6.4	0.00	5.2	0.7	20,529	16,497	25,273	20,658	2,673
	Ayakulik/Frazer	59.9	57.0	62.6	0.00	59.8	1.7	236,602	225,238	247,620	236,531	6,813
	Karluk	6.6	5.0	8.6	0.00	6.7	1.1	26,103	19,613	33,984	26,365	4,373
	Uganik	0.2	0.0	0.7	0.09	0.3	0.2	807	0	2,944	1,033	984
	Northwest Kodiak	0.0	0.0	0.3	0.44	0.0	0.1	1	0	1,229	197	504
	Afognak	0.0	0.0	0.2	0.47	0.0	0.1	0	0	750	122	358
	Eastside Kodiak	1.5	0.8	2.4	0.00	1.5	0.5	5,751	3,263	9,550	6,005	1,996
	Saltery	7.2	5.7	8.9	0.00	7.2	1.0	28,484	22,539	35,047	28,608	3,805

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 43.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 1 ("Early"; June 1–July 3; Harvest = 203,170; n = 377) of Ayakulik-Halibut Bay (statistical areas 256-10, 15, 20, 25, 30), 2015. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

		Stock Composition						Stock-specific Harvest				
Reporting Group			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.1	0.84	0.0	0.2	0	0	175	62	389
Chignik		1.8	0.7	3.6	0.00	1.9	0.9	3,700	1,405	7,224	3,930	1,802
Kodiak		61.7	57.2	66.0	0.00	61.6	2.7	125,280	116,205	134,152	125,239	5,446
Cook Inlet		28.2	24.2	32.5	0.00	28.3	2.5	57,347	49,106	66,103	57,446	5,177
Prince William Sound		7.9	5.2	11.2	0.00	8.0	1.8	16,111	10,540	22,728	16,307	3,716
South of Cape Suckling		0.0	0.0	0.8	0.82	0.1	0.3	0	0	1,536	185	686
										Total	203,170	
Chignik	Black Lake	1.8	0.7	3.5	0.00	1.9	0.9	3,628	1,341	7,120	3,853	1,789
	Chignik Lake	0.0	0.0	0.2	0.87	0.0	0.2	0	0	337	78	401
Kodiak	Upper Station/Akalura	4.0	2.4	6.2	0.00	4.1	1.2	8,193	4,842	12,610	8,388	2,371
	Ayakulik/Frazer	44.8	40.2	49.4	0.00	44.8	2.8	91,015	81,732	100,396	91,027	5,669
	Karluk	9.4	6.3	13.0	0.00	9.5	2.1	19,035	12,748	26,392	19,234	4,170
	Uganik	2.1	0.9	4.0	0.00	2.2	0.9	4,314	1,818	8,063	4,540	1,920
	Northwest Kodiak	0.0	0.0	1.5	0.55	0.3	0.5	0	0	3,064	574	1,108
	Afognak	0.5	0.0	2.1	0.31	0.7	0.7	1,064	0	4,351	1,420	1,523
	Eastside Kodiak	0.0	0.0	0.0	0.91	0.0	0.1	0	0	8	20	193
	Saltery	0.0	0.0	0.0	0.84	0.0	0.1	0	0	84	34	219

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 44.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 2 ("Middle"; July 4–August 1; Harvest = 384,390; n = 377) of Ayakulik-Halibut Bay (statistical areas 256-10, 15, 20, 25, 30), 2015. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.2	0.87	0.1	0.3	0	0	860	250	1,278
Chignik		0.0	0.0	0.1	0.78	0.0	0.1	0	0	321	78	423
Kodiak		51.3	46.7	55.8	0.00	51.3	2.8	197,016	179,638	214,474	197,033	10,580
Cook Inlet		48.2	43.6	52.7	0.00	48.2	2.8	185,118	167,476	202,725	185,100	10,684
Prince William Sound		0.3	0.0	1.8	0.00	0.5	0.6	1,056	74	6,765	1,881	2,414
South of Cape Suckling		0.0	0.0	0.0	0.90	0.0	0.1	0	0	36	47	395
										Total	384,390	
Chignik	Black Lake	0.0	0.0	0.0	0.85	0.0	0.1	0	0	86	44	305
	Chignik Lake	0.0	0.0	0.0	0.91	0.0	0.1	0	0	15	34	295
Kodiak	Upper Station/Akalura	0.0	0.0	0.5	0.66	0.1	0.3	0	0	1,787	267	990
	Ayakulik/Frazer	40.7	36.3	45.2	0.00	40.8	2.7	156,626	139,594	173,832	156,652	10,389
	Karluk	4.6	2.4	7.5	0.00	4.7	1.6	17,586	9,091	29,021	18,142	6,106
	Uganik	0.0	0.0	1.3	0.69	0.2	0.5	0	0	4,886	669	1,902
	Northwest Kodiak	0.0	0.0	0.0	0.88	0.0	0.1	0	0	186	72	424
	Afognak	0.0	0.0	0.0	0.91	0.0	0.1	0	0	10	24	221
	Eastside Kodiak	0.5	0.1	1.5	0.00	0.6	0.5	1,991	419	5,761	2,397	1,769
	Saltery	4.8	2.9	7.2	0.00	4.9	1.3	18,453	11,034	27,836	18,811	5,128

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 45.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 3 ("Late"; August 2–29; Harvest = 20,619; n = 379) of Ayakulik-Halibut Bay (statistical areas 256-10, 15, 20, 25, 30), 2015. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.2	0.0	0.9	0.05	0.3	0.3	40	0	186	60	63
Chignik		0.0	0.0	0.0	0.84	0.0	0.1	0	0	5	2	15
Kodiak		89.5	86.5	92.2	0.00	89.5	1.7	18,462	17,834	19,002	18,446	356
Cook Inlet		8.3	5.9	11.2	0.00	8.4	1.6	1,717	1,218	2,313	1,736	333
Prince William Sound		1.1	0.0	2.9	0.14	1.2	1.0	232	0	593	247	196
South of Cape Suckling		0.0	0.0	2.5	0.53	0.6	0.9	0	0	513	128	188
										Total	20,619	
Chignik	Black Lake	0.0	0.0	0.0	0.92	0.0	0.0	0	0	0	1	9
	Chignik Lake	0.0	0.0	0.0	0.92	0.0	0.1	0	0	0	1	12
Kodiak	Upper Station/Akalura	15.9	12.5	19.7	0.00	15.9	2.2	3,271	2,573	4,053	3,286	451
	Ayakulik/Frazer	24.8	20.6	29.2	0.00	24.8	2.6	5,105	4,254	6,012	5,116	536
	Karluk	24.4	20.0	29.1	0.00	24.4	2.8	5,030	4,121	6,001	5,040	572
	Uganik	0.2	0.0	1.5	0.34	0.4	0.5	38	0	317	84	113
	Northwest Kodiak	0.2	0.0	1.0	0.00	0.3	0.3	41	3	196	63	71
	Afognak	0.0	0.0	0.0	0.92	0.0	0.0	0	0	0	1	7
	Eastside Kodiak	1.7	0.8	3.1	0.00	1.8	0.7	352	168	635	370	145
	Saltery	21.7	18.1	25.6	0.00	21.7	2.3	4,475	3,724	5,279	4,484	473

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 46.–Annual regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for Ayakulik-Halibut Bay (statistical areas 256-10, 15, 20, 25, 30), 2015. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero ($P = 0$), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.3	0.04	0.1	0.2	53	1	1,905	372	1,333
Chignik		0.6	0.2	1.2	0.00	0.7	0.3	3,764	1,435	7,399	4,010	1,849
Kodiak		56.0	52.8	59.3	0.00	56.0	2.0	340,744	321,037	360,357	340,718	11,938
Cook Inlet		40.2	37.0	43.4	0.00	40.2	2.0	244,316	224,759	263,868	244,282	11,886
Prince William Sound		3.0	2.0	4.3	0.00	3.0	0.7	18,038	11,900	26,256	18,436	4,458
South of Cape Suckling		0.0	0.0	0.3	0.40	0.1	0.1	62	0	1,908	361	814
										Total	608,179	
Chignik	Black Lake	0.6	0.2	1.2	0.00	0.6	0.3	3,666	1,358	7,209	3,897	1,813
	Chignik Lake	0.0	0.0	0.1	0.76	0.0	0.1	0	0	697	113	501
Kodiak	Upper Station/Akalura	1.9	1.3	2.7	0.00	2.0	0.4	11,691	8,151	16,556	11,942	2,618
	Ayakulik/Frazer	41.6	38.4	44.8	0.00	41.6	2.0	252,727	233,283	272,379	252,796	11,902
	Karluk	6.9	5.1	9.1	0.00	7.0	1.2	41,959	30,985	55,341	42,416	7,441
	Uganik	0.8	0.3	1.7	0.00	0.9	0.4	4,783	2,008	10,423	5,293	2,710
	Northwest Kodiak	0.0	0.0	0.5	0.00	0.1	0.2	122	6	3,331	709	1,189
	Afognak	0.2	0.0	0.7	0.27	0.2	0.3	1,087	0	4,398	1,445	1,539
	Eastside Kodiak	0.4	0.1	1.0	0.00	0.5	0.3	2,386	777	6,187	2,788	1,787
	Saltery	3.8	2.5	5.3	0.00	3.8	0.8	22,969	15,503	32,412	23,329	5,153

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 47.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 1 ("Early"; June 1–27; Harvest = 3,937; n = 219) of Ayakulik-Halibut Bay (statistical areas 256-10, 15, 20, 25, 30), 2016. Note that these samples are exclusively from the department test fishery operated in front of the Ayakulik River mouth, as the commercial fishery was not open. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

		Stock Composition						Stock-specific Harvest				
Reporting Group			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.0	0.92	0.0	0.0	0	0	0	0	2
Chignik		0.0	0.0	0.0	0.79	0.0	0.1	0	0	2	1	3
Kodiak		99.5	98.3	99.9	0.00	99.4	0.5	3,917	3,869	3,935	3,912	22
Cook Inlet		0.4	0.0	1.6	0.00	0.6	0.5	17	2	63	23	20
Prince William Sound		0.0	0.0	0.2	0.52	0.0	0.1	0	0	9	1	5
South of Cape Suckling		0.0	0.0	0.0	0.92	0.0	0.1	0	0	0	0	2
										Total	3,937	
Chignik	Black Lake	0.0	0.0	0.0	0.86	0.0	0.1	0	0	1	0	2
	Chignik Lake	0.0	0.0	0.0	0.92	0.0	0.0	0	0	0	0	2
Kodiak	Upper Station/Akalura	0.0	0.0	0.2	0.69	0.0	0.2	0	0	7	1	6
	Ayakulik/Frazer	98.0	95.7	99.3	0.00	97.8	1.2	3,859	3,766	3,911	3,851	45
	Karluk	0.7	0.0	3.0	0.07	1.0	1.0	28	0	117	39	39
	Uganik	0.2	0.0	1.8	0.33	0.5	0.7	7	0	72	19	26
	Northwest Kodiak	0.0	0.0	0.0	0.91	0.0	0.1	0	0	0	0	4
	Afognak	0.0	0.0	0.0	0.92	0.0	0.0	0	0	0	0	2
	Eastside Kodiak	0.0	0.0	0.0	0.90	0.0	0.1	0	0	0	0	4
	Saltery	0.0	0.0	0.0	0.92	0.0	0.1	0	0	0	0	2

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 48.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 2 ("Middle"; June 28–July 25; Harvest = 120,068; n = 377) of Ayakulik-Halibut Bay (statistical areas 256-10, 15, 20, 25, 30), 2016. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	1.7	0.77	0.2	0.6	0	0	1,994	265	759
Chignik		0.0	0.0	1.1	0.69	0.2	0.4	0	0	1,329	191	503
Kodiak		55.7	51.1	60.2	0.00	55.6	2.8	66,823	61,328	72,239	66,814	3,314
Cook Inlet		42.2	37.6	46.9	0.00	42.2	2.8	50,694	45,100	56,310	50,699	3,409
Prince William Sound		0.0	0.0	3.0	0.50	0.8	1.1	0	0	3,582	947	1,323
South of Cape Suckling		0.3	0.0	3.7	0.44	1.0	1.4	317	0	4,472	1,151	1,631
										Total	120,068	
Chignik	Black Lake	0.0	0.0	0.0	0.90	0.0	0.1	0	0	9	14	111
	Chignik Lake	0.0	0.0	1.1	0.76	0.1	0.4	0	0	1,291	176	493
Kodiak	Upper Station/Akalura	0.9	0.2	2.2	0.00	1.0	0.6	1,083	275	2,601	1,214	736
	Ayakulik/Frazer	47.0	42.5	51.5	0.00	47.0	2.7	56,389	51,032	61,790	56,397	3,269
	Karluk	3.7	1.8	6.4	0.00	3.9	1.4	4,487	2,217	7,647	4,650	1,668
	Uganik	1.3	0.0	3.4	0.13	1.5	1.1	1,611	0	4,140	1,745	1,319
	Northwest Kodiak	0.0	0.0	0.0	0.92	0.0	0.0	0	0	2	6	54
	Afognak	0.2	0.0	0.9	0.02	0.3	0.3	242	10	1,073	352	361
	Eastside Kodiak	0.2	0.0	1.3	0.01	0.4	0.6	252	16	1,609	472	745
	Saltery	1.6	0.0	3.4	0.09	1.6	1.0	1,912	0	4,137	1,978	1,239

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 49.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 3 ("Late"; July 26–August 29; Harvest = 33,721; n = 378) of Ayakulik-Halibut Bay (statistical areas 256-10, 15, 20, 25, 30), 2016. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

		Stock Composition						Stock-specific Harvest				
Reporting Group			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.2	0.82	0.0	0.1	0	0	84	12	49
Chignik		0.0	0.0	0.0	0.84	0.0	0.1	0	0	10	4	26
Kodiak		69.0	64.6	73.2	0.00	69.0	2.6	23,274	21,794	24,682	23,261	877
Cook Inlet		28.5	24.3	32.9	0.00	28.6	2.6	9,615	8,201	11,097	9,629	881
Prince William Sound		1.1	0.2	4.8	0.00	1.7	1.5	383	84	1,612	589	506
South of Cape Suckling		0.6	0.0	1.9	0.23	0.7	0.6	191	0	629	225	217
										Total	33,721	
Chignik	Black Lake	0.0	0.0	0.0	0.92	0.0	0.0	0	0	0	1	10
	Chignik Lake	0.0	0.0	0.0	0.91	0.0	0.1	0	0	1	3	24
Kodiak	Upper Station/Akalura	8.8	5.9	12.3	0.00	8.9	1.9	2,976	2,002	4,142	3,011	651
	Ayakulik/Frazer	6.0	3.6	9.0	0.00	6.1	1.7	2,027	1,205	3,027	2,060	558
	Karluk	47.3	42.1	52.6	0.00	47.3	3.2	15,965	14,210	17,723	15,965	1,065
	Uganik	0.0	0.0	0.1	0.85	0.0	0.2	0	0	40	12	63
	Northwest Kodiak	0.0	0.0	0.0	0.92	0.0	0.1	0	0	1	2	17
	Afognak	0.4	0.0	1.3	0.09	0.5	0.4	120	0	441	156	146
	Eastside Kodiak	0.5	0.0	2.5	0.19	0.7	0.9	153	0	854	246	287
	Saltery	5.3	3.0	8.0	0.00	5.4	1.5	1,780	1,023	2,699	1,810	510

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 50.–Annual regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for Ayakulik-Halibut Bay (statistical areas 256-10, 15, 20, 25, 30), 2016. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero ($P = 0$), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	1.3	0.62	0.2	0.5	0	0	2,018	278	760
Chignik		0.0	0.0	0.8	0.52	0.1	0.3	0	0	1,329	195	504
Kodiak		59.6	56.0	63.1	0.00	59.6	2.2	93,985	88,323	99,588	93,982	3,426
Cook Inlet		38.3	34.6	42.0	0.00	38.3	2.2	60,351	54,597	66,171	60,356	3,517
Prince William Sound		0.7	0.1	2.7	0.00	1.0	0.9	1,156	115	4,301	1,539	1,417
South of Cape Suckling		0.4	0.0	3.0	0.08	0.9	1.0	656	0	4,731	1,377	1,652
										Total	157,726	
Chignik	Black Lake	0.0	0.0	0.0	0.78	0.0	0.1	0	0	29	16	112
	Chignik Lake	0.0	0.0	0.8	0.67	0.1	0.3	0	0	1,287	179	494
Kodiak	Upper Station/Akalura	2.6	1.8	3.8	0.00	2.7	0.6	4,142	2,769	5,972	4,225	983
	Ayakulik/Frazer	39.5	36.0	43.0	0.00	39.5	2.1	62,295	56,841	67,759	62,307	3,320
	Karluk	13.0	11.2	15.3	0.00	13.1	1.3	20,533	17,620	24,084	20,653	1,978
	Uganik	1.0	0.0	2.6	0.04	1.1	0.8	1,645	1	4,169	1,775	1,319
	Northwest Kodiak	0.0	0.0	0.0	0.81	0.0	0.0	0	0	21	8	57
	Afognak	0.3	0.0	0.8	0.00	0.3	0.2	414	75	1,262	508	388
	Eastside Kodiak	0.3	0.0	1.3	0.00	0.5	0.5	503	75	1,989	718	796
	Saltery	2.4	1.1	3.9	0.00	2.4	0.9	3,723	1,680	6,104	3,788	1,341

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 51.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 2 ("Middle"; June 28–July 25; Harvest = 115,998; n = 375) of Alitak (statistical areas 257-10, 20, 50, 60, 70; does not include gillnet harvests in Olga, Moser, and Alitak Bay), 2014. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.1	0.0	2.4	0.27	0.6	0.8	139	0	2,746	694	976
Chignik		1.1	0.0	3.0	0.05	1.2	1.0	1,284	0	3,455	1,404	1,122
Kodiak		64.9	60.6	69.2	0.00	64.9	2.6	75,315	70,301	80,213	75,296	3,009
Cook Inlet		32.3	28.1	36.7	0.00	32.3	2.6	37,463	32,567	42,514	37,488	3,022
Prince William Sound		0.7	0.1	1.9	0.00	0.8	0.6	768	115	2,207	913	674
South of Cape Suckling		0.0	0.0	0.9	0.34	0.2	0.4	10	0	1,004	204	415
										Total	115,998	
Chignik	Black Lake	0.0	0.0	0.3	0.52	0.1	0.2	0	0	390	64	220
	Chignik Lake	1.0	0.0	2.9	0.11	1.2	1.0	1,217	0	3,402	1,339	1,124
Kodiak	Upper Station/Akalura	4.6	2.8	7.0	0.00	4.7	1.3	5,383	3,280	8,113	5,498	1,476
	Ayakulik/Frazer	56.5	52.1	60.8	0.00	56.5	2.7	65,573	60,442	70,571	65,550	3,086
	Karluk	0.0	0.0	0.5	0.50	0.1	0.2	0	0	542	86	290
	Uganik	0.0	0.0	1.1	0.39	0.2	0.4	2	0	1,243	232	458
	Northwest Kodiak	0.0	0.0	0.2	0.54	0.0	0.1	0	0	224	37	129
	Afognak	0.0	0.0	0.2	0.54	0.0	0.1	0	0	209	35	129
	Eastside Kodiak	2.2	1.1	4.4	0.00	2.4	1.1	2,579	1,265	5,135	2,800	1,220
	Saltery	0.8	0.0	2.2	0.05	0.9	0.7	935	0	2,537	1,056	792

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 52.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 3 ("Late"; July 26–August 29; Harvest = 5,437; n = 375) of Alitak (statistical areas 257-10, 20, 50, 60, 70; does not include gillnet harvests in Olga, Moser, and Alitak Bay), 2014. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.0	0.92	0.0	0.0	0	0	0	0	3
Chignik		0.4	0.0	1.7	0.32	0.5	0.6	20	0	94	29	33
Kodiak		92.7	90.2	94.9	0.00	92.7	1.4	5,043	4,902	5,161	5,039	79
Cook Inlet		5.2	3.4	7.5	0.00	5.3	1.2	284	186	408	288	67
Prince William Sound		0.2	0.0	0.8	0.10	0.2	0.3	9	0	43	13	15
South of Cape Suckling		1.1	0.4	2.4	0.00	1.2	0.6	62	23	130	67	33
										Total	5,437	
Chignik	Black Lake	0.0	0.0	0.0	0.92	0.0	0.0	0	0	0	0	3
	Chignik Lake	0.4	0.0	1.7	0.35	0.5	0.6	19	0	94	29	33
Kodiak	Upper Station/Akalura	63.4	58.8	67.9	0.00	63.4	2.8	3,449	3,197	3,694	3,448	151
	Ayakulik/Frazer	25.1	21.1	29.4	0.00	25.2	2.5	1,366	1,147	1,600	1,369	138
	Karluk	0.0	0.0	0.0	0.89	0.0	0.1	0	0	1	1	8
	Uganik	0.0	0.0	0.9	0.76	0.1	0.3	0	0	47	7	18
	Northwest Kodiak	0.0	0.0	0.0	0.92	0.0	0.0	0	0	0	0	2
	Afognak	0.0	0.0	0.0	0.92	0.0	0.0	0	0	0	0	2
	Eastside Kodiak	3.7	2.3	5.6	0.00	3.8	1.0	203	127	303	208	54
	Saltery	0.0	0.0	0.8	0.73	0.1	0.3	0	0	43	6	16

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 53.–Annual regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for Alitak (statistical areas 257-10, 20, 50, 60, 70; does not include gillnet harvests in Olga, Moser, and Alitak Bay), 2014. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.1	0.0	2.3	0.26	0.6	0.8	139	0	2,746	694	976
Chignik		1.1	0.0	2.9	0.02	1.2	0.9	1,313	12	3,486	1,432	1,123
Kodiak		66.2	62.0	70.2	0.00	66.2	2.5	80,356	75,339	85,254	80,334	3,010
Cook Inlet		31.1	27.1	35.2	0.00	31.1	2.5	37,751	32,851	42,805	37,776	3,023
Prince William Sound		0.6	0.1	1.8	0.00	0.8	0.6	782	128	2,222	926	674
South of Cape Suckling		0.1	0.0	0.9	0.00	0.2	0.3	105	30	1,071	272	417
										Total	121,435	
Chignik	Black Lake	0.0	0.0	0.3	0.49	0.1	0.2	0	0	390	65	220
	Chignik Lake	1.0	0.0	2.8	0.04	1.1	0.9	1,246	1	3,433	1,368	1,124
Kodiak	Upper Station/Akalura	7.3	5.5	9.5	0.00	7.4	1.2	8,829	6,712	11,579	8,946	1,486
	Ayakulik/Frazer	55.1	50.9	59.3	0.00	55.1	2.5	66,942	61,797	71,950	66,919	3,091
	Karluk	0.0	0.0	0.4	0.47	0.1	0.2	0	0	543	88	290
	Uganik	0.0	0.0	1.0	0.30	0.2	0.4	15	0	1,251	239	458
	Northwest Kodiak	0.0	0.0	0.2	0.51	0.0	0.1	0	0	224	37	129
	Afognak	0.0	0.0	0.2	0.52	0.0	0.1	0	0	209	36	129
	Eastside Kodiak	2.3	1.2	4.4	0.00	2.5	1.0	2,787	1,470	5,342	3,008	1,222
	Saltery	0.8	0.0	2.1	0.04	0.9	0.7	942	1	2,541	1,062	792

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 54.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 1 ("Early"; June 1–July 3; Harvest = 28,723; n = 368) of Alitak (statistical areas 257-10, 20, 50, 60, 70; does not include gillnet harvests in Olga, Moser, and Alitak Bay), 2015. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.2	0.0	2.3	0.27	0.6	0.9	50	0	669	168	247
Chignik		1.1	0.3	2.6	0.00	1.3	0.7	327	89	740	359	203
Kodiak		63.9	59.5	68.3	0.00	63.9	2.7	18,363	17,083	19,612	18,358	769
Cook Inlet		26.8	22.1	31.9	0.00	26.9	3.0	7,710	6,344	9,158	7,723	856
Prince William Sound		7.2	4.1	10.8	0.00	7.3	2.1	2,068	1,163	3,095	2,092	590
South of Cape Suckling		0.0	0.0	0.4	0.53	0.1	0.3	0	0	113	22	100
										Total	28,723	
Chignik	Black Lake	1.0	0.1	2.4	0.02	1.1	0.7	290	37	684	317	197
	Chignik Lake	0.0	0.0	0.9	0.47	0.1	0.4	0	0	265	42	108
Kodiak	Upper Station/Akalura	6.3	4.2	8.9	0.00	6.4	1.4	1,801	1,199	2,544	1,828	411
	Ayakulik/Frazer	53.4	48.8	57.9	0.00	53.4	2.8	15,333	14,007	16,642	15,330	798
	Karluk	0.4	0.0	2.5	0.20	0.7	0.9	110	0	706	202	249
	Uganik	0.0	0.0	1.1	0.40	0.2	0.4	0	0	330	62	123
	Northwest Kodiak	0.0	0.0	0.4	0.51	0.1	0.2	0	0	120	19	54
	Afognak	0.8	0.2	2.0	0.00	0.9	0.5	242	66	568	270	157
	Eastside Kodiak	1.5	0.5	4.0	0.00	1.8	1.1	429	149	1,155	512	319
	Saltery	0.3	0.0	1.5	0.17	0.5	0.5	93	0	434	136	151

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 55.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 2 ("Middle"; July 4–August 1; Harvest = 165,894; n = 373) of Alitak (statistical areas 257-10, 20, 50, 60, 70; does not include gillnet harvests in Olga, Moser, and Alitak Bay), 2015. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.1	0.88	0.0	0.2	0	0	177	56	312
Chignik		0.0	0.0	0.3	0.79	0.0	0.2	0	0	436	71	312
Kodiak		21.7	18.1	25.6	0.00	21.7	2.3	35,957	30,019	42,412	36,055	3,776
Cook Inlet		77.0	72.9	80.7	0.00	76.9	2.4	127,717	121,009	133,837	127,611	3,900
Prince William Sound		1.1	0.4	2.6	0.00	1.3	0.7	1,857	690	4,231	2,092	1,214
South of Cape Suckling		0.0	0.0	0.0	0.92	0.0	0.1	0	0	3	9	92
										Total	165,894	
Chignik	Black Lake	0.0	0.0	0.0	0.88	0.0	0.1	0	0	77	32	191
	Chignik Lake	0.0	0.0	0.0	0.89	0.0	0.1	0	0	52	39	248
Kodiak	Upper Station/Akalura	0.0	0.0	0.5	0.50	0.1	0.2	0	0	878	140	368
	Ayakulik/Frazer	17.2	14.1	20.6	0.00	17.3	2.0	28,542	23,392	34,215	28,632	3,292
	Karluk	0.0	0.0	0.0	0.89	0.0	0.2	0	0	49	43	282
	Uganik	0.0	0.0	0.1	0.88	0.0	0.2	0	0	171	56	313
	Northwest Kodiak	0.0	0.0	0.0	0.92	0.0	0.0	0	0	2	5	52
	Afognak	0.0	0.0	0.0	0.92	0.0	0.0	0	0	2	6	63
	Eastside Kodiak	3.4	2.1	5.3	0.00	3.5	1.0	5,691	3,462	8,814	5,860	1,662
	Saltery	0.5	0.0	2.6	0.36	0.8	0.9	810	0	4,355	1,313	1,542

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 56.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 3 ("Late"; August 2–29; Harvest = 31,294; n = 373) of Alitak (statistical areas 257-10, 20, 50, 60, 70; does not include gillnet harvests in Olga, Moser, and Alitak Bay), 2015. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.0	0.90	0.0	0.1	0	0	2	4	28
Chignik		0.0	0.0	0.0	0.83	0.0	0.1	0	0	12	5	30
Kodiak		96.1	93.5	97.9	0.00	96.0	1.3	30,079	29,272	30,635	30,032	418
Cook Inlet		2.8	1.3	4.7	0.00	2.9	1.0	864	419	1,475	895	324
Prince William Sound		0.5	0.1	2.3	0.01	0.7	0.7	160	21	704	229	225
South of Cape Suckling		0.0	0.0	2.6	0.71	0.4	0.9	0	0	803	130	283
										Total	31,294	
Chignik	Black Lake	0.0	0.0	0.0	0.91	0.0	0.1	0	0	1	3	25
	Chignik Lake	0.0	0.0	0.0	0.92	0.0	0.1	0	0	1	2	16
Kodiak	Upper Station/Akalura	34.3	29.8	38.9	0.00	34.3	2.8	10,719	9,326	12,161	10,731	861
	Ayakulik/Frazer	37.2	32.6	41.9	0.00	37.2	2.8	11,648	10,216	13,115	11,655	883
	Karluk	0.0	0.0	2.3	0.80	0.3	0.9	0	0	721	86	280
	Uganik	0.0	0.0	1.5	0.67	0.3	0.6	0	0	480	83	175
	Northwest Kodiak	0.0	0.0	1.3	0.66	0.2	0.5	0	0	421	77	153
	Afognak	0.0	0.0	0.0	0.92	0.0	0.0	0	0	0	1	12
	Eastside Kodiak	16.4	13.0	20.3	0.00	16.5	2.2	5,127	4,063	6,343	5,154	693
	Saltery	7.1	4.7	10.0	0.00	7.2	1.6	2,214	1,464	3,127	2,245	507

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 57.–Annual regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for Alitak (statistical areas 257-10, 20, 50, 60, 70; does not include gillnet harvests in Olga, Moser, and Alitak Bay), 2015. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.4	0.25	0.1	0.2	82	0	877	228	398
Chignik		0.2	0.0	0.4	0.00	0.2	0.2	356	97	980	435	373
Kodiak		37.3	34.6	40.3	0.00	37.4	1.7	84,343	78,216	90,965	84,446	3,882
Cook Inlet		60.3	57.3	63.1	0.00	60.3	1.8	136,314	129,466	142,645	136,229	4,010
Prince William Sound		1.9	1.2	3.0	0.00	2.0	0.6	4,221	2,627	6,771	4,412	1,363
South of Cape Suckling		0.0	0.0	0.4	0.40	0.1	0.1	1	0	865	161	311
										Total	225,911	
Chignik	Black Lake	0.1	0.0	0.3	0.02	0.2	0.1	305	43	776	352	275
	Chignik Lake	0.0	0.0	0.2	0.44	0.0	0.1	0	0	408	83	270
Kodiak	Upper Station/Akalura	5.6	4.9	6.4	0.00	5.6	0.5	12,665	11,078	14,425	12,699	1,024
	Ayakulik/Frazer	24.6	22.1	27.2	0.00	24.6	1.6	55,537	49,990	61,508	55,618	3,504
	Karluk	0.1	0.0	0.5	0.16	0.1	0.2	173	0	1,223	331	472
	Uganik	0.0	0.0	0.3	0.27	0.1	0.2	49	0	766	200	379
	Northwest Kodiak	0.0	0.0	0.2	0.36	0.0	0.1	5	0	462	101	170
	Afognak	0.1	0.0	0.3	0.00	0.1	0.1	247	67	586	277	170
	Eastside Kodiak	5.0	3.9	6.5	0.00	5.1	0.8	11,379	8,803	14,715	11,525	1,828
	Saltery	1.5	0.8	3.0	0.00	1.6	0.7	3,278	1,778	6,837	3,694	1,626

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 58.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 1 ("Early"; June 1–27; Harvest = 11,118; n = 375) of Alitak (statistical areas 257-10, 20, 50, 60, 70; does not include gillnet harvests in Olga, Moser, and Alitak Bay), 2016. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.4	0.83	0.1	0.2	0	0	44	6	23
Chignik		2.1	1.0	3.8	0.00	2.2	0.9	232	107	422	244	97
Kodiak		74.3	70.2	78.1	0.00	74.2	2.4	8,260	7,804	8,688	8,255	270
Cook Inlet		23.3	19.4	27.3	0.00	23.3	2.4	2,586	2,159	3,038	2,591	267
Prince William Sound		0.0	0.0	1.2	0.45	0.2	0.5	0	0	135	21	53
South of Cape Suckling		0.0	0.0	0.0	0.92	0.0	0.1	0	0	0	1	7
										Total	11,118	
Chignik	Black Lake	2.1	1.0	3.8	0.00	2.2	0.9	231	106	420	243	97
	Chignik Lake	0.0	0.0	0.0	0.90	0.0	0.1	0	0	1	2	12
Kodiak	Upper Station/Akalura	13.9	10.9	17.3	0.00	14.0	1.9	1,548	1,217	1,920	1,555	214
	Ayakulik/Frazer	54.2	49.5	58.7	0.00	54.1	2.8	6,022	5,500	6,530	6,018	313
	Karluk	0.0	0.0	3.4	0.63	0.7	1.2	0	0	378	73	135
	Uganik	2.2	0.8	4.1	0.01	2.3	1.0	244	89	457	254	113
	Northwest Kodiak	0.0	0.0	0.0	0.92	0.0	0.0	0	0	0	0	4
	Afognak	0.5	0.1	1.5	0.01	0.6	0.4	56	8	163	67	49
	Eastside Kodiak	2.4	1.3	4.0	0.00	2.5	0.9	265	142	449	276	95
	Saltery	0.0	0.0	0.7	0.79	0.1	0.3	0	0	80	11	35

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 59.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 2 ("Middle"; June 28–July 25; Harvest = 61,930; n = 372) of Alitak (statistical areas 257-10, 20, 50, 60, 70; does not include gillnet harvests in Olga, Moser, and Alitak Bay), 2016. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

		Stock Composition						Stock-specific Harvest				
Reporting Group			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.0	0.92	0.0	0.1	0	0	1	3	32
Chignik		2.8	1.3	5.1	0.00	2.9	1.2	1,713	779	3,159	1,809	735
Kodiak		29.9	26.0	34.1	0.00	30.0	2.5	18,535	16,071	21,098	18,552	1,524
Cook Inlet		66.4	62.0	70.7	0.00	66.4	2.7	41,151	38,370	43,778	41,122	1,642
Prince William Sound		0.5	0.1	1.4	0.00	0.6	0.5	294	56	888	364	303
South of Cape Suckling		0.0	0.0	0.7	0.85	0.1	0.6	0	0	420	79	392
										Total	61,930	
Chignik	Black Lake	1.9	0.0	3.9	0.10	1.9	1.2	1,172	0	2,425	1,168	746
	Chignik Lake	0.0	0.0	4.2	0.56	1.0	1.5	0	0	2,620	641	957
Kodiak	Upper Station/Akalura	2.8	1.5	4.8	0.00	2.9	1.0	1,761	911	2,961	1,825	629
	Ayakulik/Frazer	25.5	21.7	29.5	0.00	25.5	2.4	15,768	13,450	18,244	15,799	1,458
	Karluk	0.0	0.0	0.0	0.90	0.0	0.1	0	0	7	10	79
	Uganik	0.0	0.0	0.1	0.80	0.0	0.2	0	0	72	18	98
	Northwest Kodiak	0.0	0.0	0.0	0.92	0.0	0.0	0	0	1	2	19
	Afognak	0.0	0.0	0.0	0.92	0.0	0.0	0	0	1	2	18
	Eastside Kodiak	1.3	0.5	2.5	0.00	1.4	0.6	789	331	1,545	845	378
	Saltery	0.0	0.0	0.6	0.84	0.1	0.3	0	0	390	51	209

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 60.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 3 ("Late"; July 26–August 29; Harvest = 21,243; n = 368) of Alitak (statistical areas 257-10, 20, 50, 60, 70; does not include gillnet harvests in Olga, Moser, and Alitak Bay), 2016. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.7	0.79	0.1	0.3	0	0	148	20	63
Chignik		0.0	0.0	0.9	0.68	0.1	0.4	0	0	190	26	78
Kodiak		92.3	89.5	94.6	0.00	92.2	1.6	19,612	19,014	20,097	19,591	332
Cook Inlet		7.1	4.9	9.8	0.00	7.2	1.5	1,517	1,046	2,092	1,537	319
Prince William Sound		0.2	0.0	1.0	0.07	0.3	0.3	42	0	204	64	70
South of Cape Suckling		0.0	0.0	0.1	0.87	0.0	0.1	0	0	29	6	28
										Total	21,243	
Chignik	Black Lake	0.0	0.0	0.0	0.85	0.0	0.1	0	0	6	3	18
	Chignik Lake	0.0	0.0	0.9	0.80	0.1	0.4	0	0	181	23	76
Kodiak	Upper Station/Akalura	65.5	60.8	70.1	0.00	65.5	2.8	13,918	12,915	14,882	13,910	599
	Ayakulik/Frazer	13.1	9.7	16.8	0.00	13.1	2.2	2,777	2,067	3,570	2,792	459
	Karluk	4.4	2.1	7.5	0.01	4.5	1.7	936	446	1,589	965	354
	Uganik	0.0	0.0	0.0	0.91	0.0	0.1	0	0	1	2	14
	Northwest Kodiak	0.0	0.0	0.0	0.91	0.0	0.1	0	0	1	1	12
	Afognak	0.0	0.0	0.0	0.91	0.0	0.1	0	0	1	1	11
	Eastside Kodiak	0.9	0.3	2.4	0.00	1.0	0.7	185	56	509	221	153
	Saltery	7.9	5.5	10.7	0.00	8.0	1.6	1,681	1,174	2,282	1,698	337

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 61.–Annual regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for Alitak (statistical areas 257-10, 20, 50, 60, 70; does not include gillnet harvests in Olga, Moser, and Alitak Bay), 2016. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.2	0.62	0.0	0.1	0	0	176	29	74
Chignik		2.1	1.1	3.7	0.00	2.2	0.8	1,986	1,026	3,448	2,079	745
Kodiak		49.2	46.5	52.0	0.00	49.2	1.7	46,380	43,821	49,038	46,398	1,583
Cook Inlet		48.0	45.0	50.9	0.00	48.0	1.8	45,279	42,421	47,990	45,250	1,694
Prince William Sound		0.4	0.1	1.1	0.00	0.5	0.3	383	108	991	450	315
South of Cape Suckling		0.0	0.0	0.5	0.70	0.1	0.4	0	0	430	86	392
										Total	94,291	
Chignik	Black Lake	1.5	0.2	2.8	0.00	1.5	0.8	1,414	215	2,678	1,413	752
	Chignik Lake	0.0	0.0	2.8	0.42	0.7	1.0	16	0	2,650	666	961
Kodiak	Upper Station/Akalura	18.3	16.8	19.9	0.00	18.3	0.9	17,264	15,868	18,804	17,291	894
	Ayakulik/Frazer	26.1	23.4	28.9	0.00	26.1	1.7	24,579	22,101	27,209	24,609	1,557
	Karluk	1.1	0.5	1.8	0.00	1.1	0.4	1,014	488	1,730	1,048	387
	Uganik	0.3	0.1	0.5	0.00	0.3	0.2	253	93	506	274	150
	Northwest Kodiak	0.0	0.0	0.0	0.80	0.0	0.0	0	0	14	4	23
	Afognak	0.1	0.0	0.2	0.01	0.1	0.1	58	9	171	70	54
	Eastside Kodiak	1.4	0.8	2.2	0.00	1.4	0.4	1,289	755	2,108	1,342	419
	Saltery	1.8	1.3	2.6	0.00	1.9	0.4	1,722	1,194	2,448	1,760	398

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 62.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 2 ("Middle"; July 4–August 1; Harvest = 6,595; n = 370) of Igvak (statistical areas 262-75, 80, 90, 95), 2015. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

		Stock Composition						Stock-specific Harvest				
Reporting Group			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		1.4	0.4	3.9	0.00	1.7	1.1	93	27	256	110	76
Chignik		31.2	26.8	36.0	0.00	31.3	2.8	2,059	1,765	2,371	2,062	185
Kodiak		6.9	4.2	10.2	0.00	7.0	1.8	454	276	673	461	121
Cook Inlet		54.0	48.7	59.2	0.00	54.0	3.2	3,560	3,211	3,904	3,559	211
Prince William Sound		5.8	2.7	9.4	0.00	5.9	2.1	384	178	621	390	136
South of Cape Suckling		0.0	0.0	1.4	0.50	0.2	0.6	0	0	93	13	40
										Total	6,595	
Chignik	Black Lake	11.0	7.2	15.5	0.00	11.1	2.5	727	473	1,020	734	167
	Chignik Lake	20.1	15.2	25.3	0.00	20.1	3.1	1,324	1,004	1,668	1,328	202
Kodiak	Upper Station/Akalura	0.0	0.0	0.3	0.52	0.1	0.2	0	0	21	3	10
	Ayakulik/Frazer	0.0	0.0	0.6	0.28	0.1	0.3	0	0	41	7	18
	Karluk	2.3	0.7	4.5	0.00	2.4	1.2	152	46	295	159	76
	Uganik	0.8	0.0	2.9	0.13	1.0	1.0	54	0	188	66	64
	Northwest Kodiak	1.1	0.2	2.7	0.02	1.2	0.8	74	11	179	82	52
	Afognak	0.0	0.0	0.8	0.49	0.1	0.3	0	0	51	8	23
	Eastside Kodiak	0.0	0.0	0.8	0.49	0.1	0.4	0	0	52	8	24
	Saltery	1.8	0.6	3.7	0.00	1.9	1.0	119	39	245	127	64

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 63.–Annual regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for Igvak (statistical areas 262-75, 80, 90, 95), 2015. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		1.4	0.4	3.9	0.00	1.7	1.1	93	27	256	110	76
Chignik		31.2	26.8	36.0	0.00	31.3	2.8	2,059	1,765	2,371	2,062	185
Kodiak		6.9	4.2	10.2	0.00	7.0	1.8	454	276	673	461	121
Cook Inlet		54.0	48.7	59.2	0.00	54.0	3.2	3,560	3,211	3,904	3,559	211
Prince William Sound		5.8	2.7	9.4	0.00	5.9	2.1	384	178	621	390	136
South of Cape Suckling		0.0	0.0	1.4	0.50	0.2	0.6	0	0	93	13	40
										Total	6,595	
Chignik	Black Lake	11.0	7.2	15.5	0.00	11.1	2.5	727	473	1,020	734	167
	Chignik Lake	20.1	15.2	25.3	0.00	20.1	3.1	1,324	1,004	1,668	1,328	202
Kodiak	Upper Station/Akalura	0.0	0.0	0.3	0.52	0.1	0.2	0	0	21	3	10
	Ayakulik/Frazer	0.0	0.0	0.6	0.28	0.1	0.3	0	0	41	7	18
	Karluk	2.3	0.7	4.5	0.00	2.4	1.2	152	46	295	159	76
	Uganik	0.8	0.0	2.9	0.13	1.0	1.0	54	0	188	66	64
	Northwest Kodiak	1.1	0.2	2.7	0.02	1.2	0.8	74	11	179	82	52
	Afognak	0.0	0.0	0.8	0.49	0.1	0.3	0	0	51	8	23
	Eastside Kodiak	0.0	0.0	0.8	0.49	0.1	0.4	0	0	52	8	24
	Saltery	1.8	0.6	3.7	0.00	1.9	1.0	119	39	245	127	64

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 64.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 1 ("Early"; June 1–27; Harvest = 154,318; n = 376) of Igvak (statistical areas 262-75, 80, 90, 95), 2016. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

		Stock Composition						Stock-specific Harvest				
Reporting Group			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		7.7	5.3	10.6	0.00	7.8	1.6	11,843	8,114	16,357	11,987	2,521
Chignik		74.1	69.8	78.1	0.00	74.1	2.5	114,412	107,790	120,550	114,324	3,887
Kodiak		9.5	6.7	12.9	0.00	9.6	1.9	14,660	10,354	19,905	14,834	2,914
Cook Inlet		6.0	3.9	8.5	0.00	6.1	1.4	9,249	6,090	13,080	9,366	2,126
Prince William Sound		2.1	0.4	4.3	0.00	2.2	1.2	3,307	687	6,690	3,451	1,806
South of Cape Suckling		0.0	0.0	1.3	0.39	0.2	0.5	4	0	1,932	356	831
										Total	154,318	
Chignik	Black Lake	70.9	64.8	76.4	0.00	70.8	3.5	109,455	100,003	117,939	109,277	5,472
	Chignik Lake	3.1	0.0	8.0	0.10	3.3	2.6	4,762	0	12,303	5,048	4,084
Kodiak	Upper Station/Akalura	0.0	0.0	1.4	0.35	0.3	0.5	13	0	2,199	465	797
	Ayakulik/Frazer	2.7	1.3	4.6	0.00	2.8	1.0	4,166	1,985	7,169	4,316	1,590
	Karluk	4.7	2.7	7.2	0.00	4.8	1.4	7,224	4,135	11,082	7,366	2,122
	Uganik	1.0	0.0	3.2	0.08	1.2	1.1	1,565	0	5,011	1,879	1,627
	Northwest Kodiak	0.0	0.0	1.3	0.38	0.3	0.5	5	0	2,050	407	745
	Afognak	0.0	0.0	0.2	0.56	0.0	0.1	0	0	306	51	185
	Eastside Kodiak	0.0	0.0	1.4	0.48	0.2	0.6	0	0	2,092	302	860
	Saltery	0.0	0.0	0.2	0.56	0.0	0.1	0	0	284	48	180

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 65.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 2 ("Middle"; June 28–July 25; Harvest = 177,315; n = 374) of Igvak (statistical areas 262-75, 80, 90, 95), 2016. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

		Stock Composition						Stock-specific Harvest				
Reporting Group			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.6	0.47	0.1	0.3	0	0	1,137	175	525
Chignik		5.6	3.6	8.2	0.00	5.7	1.4	10,006	6,405	14,556	10,185	2,489
Kodiak		0.8	0.2	2.3	0.00	1.0	0.7	1,498	341	4,090	1,763	1,221
Cook Inlet		93.2	90.3	95.5	0.00	93.1	1.6	165,214	160,117	169,270	165,015	2,796
Prince William Sound		0.0	0.0	0.5	0.58	0.1	0.2	0	0	937	166	380
South of Cape Suckling		0.0	0.0	0.0	0.91	0.0	0.1	0	0	3	12	135
										Total	177,315	
Chignik	Black Lake	0.2	0.0	1.3	0.00	0.4	0.4	440	12	2,326	709	792
	Chignik Lake	5.2	3.2	7.8	0.00	5.3	1.4	9,300	5,706	13,848	9,475	2,486
Kodiak	Upper Station/Akalura	0.0	0.0	0.0	0.91	0.0	0.1	0	0	4	10	90
	Ayakulik/Frazer	0.6	0.0	1.6	0.10	0.6	0.5	1,008	0	2,860	1,151	911
	Karluk	0.0	0.0	1.0	0.56	0.2	0.4	0	0	1,784	267	692
	Uganik	0.0	0.0	0.1	0.87	0.0	0.2	0	0	118	58	353
	Northwest Kodiak	0.0	0.0	0.0	0.92	0.0	0.0	0	0	3	8	75
	Afognak	0.0	0.0	0.0	0.91	0.0	0.0	0	0	4	10	87
	Eastside Kodiak	0.0	0.0	0.7	0.80	0.1	0.3	0	0	1,168	148	485
	Saltery	0.0	0.0	0.3	0.87	0.1	0.3	0	0	458	111	559

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 66.–Annual regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for Igvak (statistical areas 262-75, 80, 90, 95), 2016. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		3.6	2.5	5.0	0.00	3.7	0.8	12,001	8,215	16,617	12,162	2,576
Chignik		37.5	35.3	39.8	0.00	37.5	1.4	124,510	116,903	132,074	124,509	4,614
Kodiak		4.9	3.5	6.7	0.00	5.0	1.0	16,406	11,745	22,104	16,597	3,160
Cook Inlet		52.6	50.8	54.3	0.00	52.6	1.1	174,456	168,492	180,000	174,381	3,505
Prince William Sound		1.0	0.2	2.1	0.00	1.1	0.6	3,469	823	6,883	3,617	1,834
South of Cape Suckling		0.0	0.0	0.6	0.38	0.1	0.3	7	0	1,972	368	840
										Total	331,633	
Chignik	Black Lake	33.2	30.3	35.8	0.00	33.2	1.7	110,155	100,628	118,755	109,986	5,526
	Chignik Lake	4.3	2.2	6.9	0.00	4.4	1.4	14,168	7,441	22,872	14,523	4,764
Kodiak	Upper Station/Akalura	0.0	0.0	0.7	0.35	0.1	0.2	22	0	2,211	475	801
	Ayakulik/Frazer	1.6	0.8	2.6	0.00	1.6	0.6	5,316	2,744	8,705	5,468	1,826
	Karluk	2.3	1.3	3.5	0.00	2.3	0.7	7,468	4,266	11,543	7,634	2,229
	Uganik	0.5	0.0	1.5	0.07	0.6	0.5	1,612	0	5,130	1,937	1,667
	Northwest Kodiak	0.0	0.0	0.6	0.37	0.1	0.2	10	0	2,062	415	749
	Afognak	0.0	0.0	0.1	0.55	0.0	0.1	0	0	367	61	205
	Eastside Kodiak	0.0	0.0	0.8	0.41	0.1	0.3	2	0	2,569	450	977
	Saltery	0.0	0.0	0.3	0.52	0.0	0.2	0	0	899	159	586

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 67.–Annual regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for KMA, 2014. Note that these annual summaries only include strata sampled for this project, which account for 46.7% of the KMA commercial sockeye salmon harvest. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		1.3	1.0	1.8	0.00	1.4	0.2	20,559	15,247	26,909	20,752	3,564
Chignik		1.2	0.9	1.6	0.00	1.2	0.2	18,737	14,350	23,831	18,864	2,889
Kodiak		87.9	87.1	88.8	0.00	87.9	0.5	1,339,346	1,326,335	1,351,950	1,339,256	7,782
Cook Inlet		7.5	6.8	8.2	0.00	7.5	0.4	113,972	103,374	125,010	114,076	6,594
Prince William Sound		1.6	1.2	2.0	0.00	1.6	0.2	23,716	18,425	30,133	23,940	3,574
South of Cape Suckling		0.4	0.2	0.8	0.00	0.4	0.2	5,656	2,451	11,589	6,154	2,825
										Total	1,523,042	
Chignik	Black Lake	0.5	0.3	0.7	0.00	0.5	0.1	7,016	4,045	10,628	7,133	2,010
	Chignik Lake	0.8	0.5	1.1	0.00	0.8	0.2	11,579	7,456	16,499	11,730	2,762
Kodiak	Upper Station/Akalura	4.3	3.8	4.8	0.00	4.3	0.3	65,196	57,158	73,786	65,302	5,074
	Ayakulik/Frazer	26.0	25.0	27.0	0.00	26.0	0.6	396,083	381,001	411,043	396,063	9,149
	Karluk	32.4	31.5	33.4	0.00	32.4	0.6	493,692	479,039	508,589	493,705	8,987
	Uganik	3.1	2.7	3.7	0.00	3.1	0.3	47,797	40,614	55,692	47,926	4,584
	Northwest Kodiak	0.8	0.5	1.1	0.00	0.8	0.2	11,895	8,362	16,207	12,038	2,402
	Afognak	0.5	0.3	0.7	0.00	0.5	0.1	7,057	4,709	9,991	7,163	1,614
	Eastside Kodiak	0.7	0.5	1.1	0.00	0.8	0.2	11,300	7,527	16,541	11,573	2,779
	Saltery	20.1	19.2	20.9	0.00	20.1	0.5	305,476	292,784	318,334	305,486	7,764

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 68.–Annual regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for KMA, 2015. Note that these annual summaries only include strata sampled for this project, which account for 55.2% of the KMA commercial sockeye salmon harvest. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.1	0.0	0.2	0.00	0.1	0.1	873	248	3,791	1,297	1,540
Chignik		1.4	1.0	1.9	0.00	1.4	0.3	24,109	17,722	31,891	24,360	4,316
Kodiak		57.9	56.4	59.4	0.00	57.9	0.9	990,025	963,643	1,016,152	989,956	15,999
Cook Inlet		36.6	35.1	38.2	0.00	36.6	0.9	626,472	600,901	652,412	626,550	15,664
Prince William Sound		3.6	2.9	4.4	0.00	3.6	0.5	61,815	49,731	75,147	62,028	7,729
South of Cape Suckling		0.3	0.1	0.8	0.00	0.3	0.2	4,500	1,381	14,190	5,592	3,968
										Total	1,709,784	
Chignik	Black Lake	0.6	0.5	0.9	0.00	0.6	0.1	10,848	7,726	15,216	11,080	2,305
	Chignik Lake	0.8	0.4	1.2	0.00	0.8	0.2	13,014	7,648	19,837	13,280	3,733
Kodiak	Upper Station/Akalura	1.7	1.5	2.1	0.00	1.7	0.2	29,702	25,088	35,358	29,902	3,158
	Ayakulik/Frazer	19.3	18.1	20.5	0.00	19.3	0.7	329,848	309,163	350,796	329,913	12,637
	Karluk	14.7	13.8	15.8	0.00	14.8	0.6	252,170	235,753	269,991	252,436	10,416
	Uganik	2.7	2.2	3.3	0.00	2.7	0.3	46,650	38,410	56,583	46,954	5,547
	Northwest Kodiak	0.6	0.4	0.8	0.00	0.6	0.1	9,569	6,750	14,077	9,884	2,270
	Afognak	0.4	0.3	0.7	0.00	0.5	0.1	7,648	5,363	11,332	7,916	1,872
	Eastside Kodiak	0.9	0.7	1.2	0.00	0.9	0.2	15,339	11,706	20,598	15,649	2,803
	Saltery	17.4	16.3	18.5	0.00	17.4	0.6	297,204	279,274	315,740	297,302	11,105

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Table 69.–Annual regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for KMA, 2016. Note that these annual summaries only include strata sampled for this project, which account for 62.4% of the KMA commercial sockeye salmon harvest. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		1.0	0.7	1.4	0.00	1.0	0.2	13,398	9,280	18,461	13,568	2,807
Chignik		9.8	9.2	10.4	0.00	9.8	0.4	127,576	119,780	135,358	127,570	4,738
Kodiak		57.8	56.8	58.8	0.00	57.8	0.6	749,249	736,233	762,328	749,258	7,947
Cook Inlet		29.6	28.6	30.7	0.00	29.6	0.6	384,089	370,845	397,390	384,099	8,059
Prince William Sound		1.2	0.9	1.7	0.00	1.3	0.3	15,986	11,414	22,056	16,265	3,252
South of Cape Suckling		0.4	0.2	0.8	0.00	0.4	0.2	4,949	2,072	10,438	5,433	2,630
										Total	1,296,193	
Chignik	Black Lake	8.6	7.9	9.3	0.00	8.6	0.4	112,103	102,447	120,839	111,948	5,595
	Chignik Lake	1.2	0.6	1.9	0.00	1.2	0.4	15,267	8,281	24,250	15,622	4,901
Kodiak	Upper Station/Akalura	2.2	1.8	2.5	0.00	2.2	0.2	27,924	23,950	32,339	28,003	2,552
	Ayakulik/Frazer	8.2	7.6	8.8	0.00	8.2	0.4	106,364	99,008	114,025	106,428	4,571
	Karluk	25.4	24.5	26.3	0.00	25.4	0.5	328,862	317,245	340,694	328,890	7,119
	Uganik	7.4	6.8	8.1	0.00	7.4	0.4	96,205	88,398	104,564	96,318	4,921
	Northwest Kodiak	0.3	0.2	0.5	0.00	0.3	0.1	3,938	2,081	6,679	4,104	1,422
	Afognak	0.4	0.3	0.6	0.00	0.4	0.1	5,330	3,432	7,859	5,447	1,360
	Eastside Kodiak	0.2	0.1	0.8	0.00	0.3	0.2	2,988	1,511	10,280	4,058	2,815
	Saltery	13.6	12.7	14.5	0.00	13.6	0.5	175,968	164,726	187,446	176,010	6,910

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

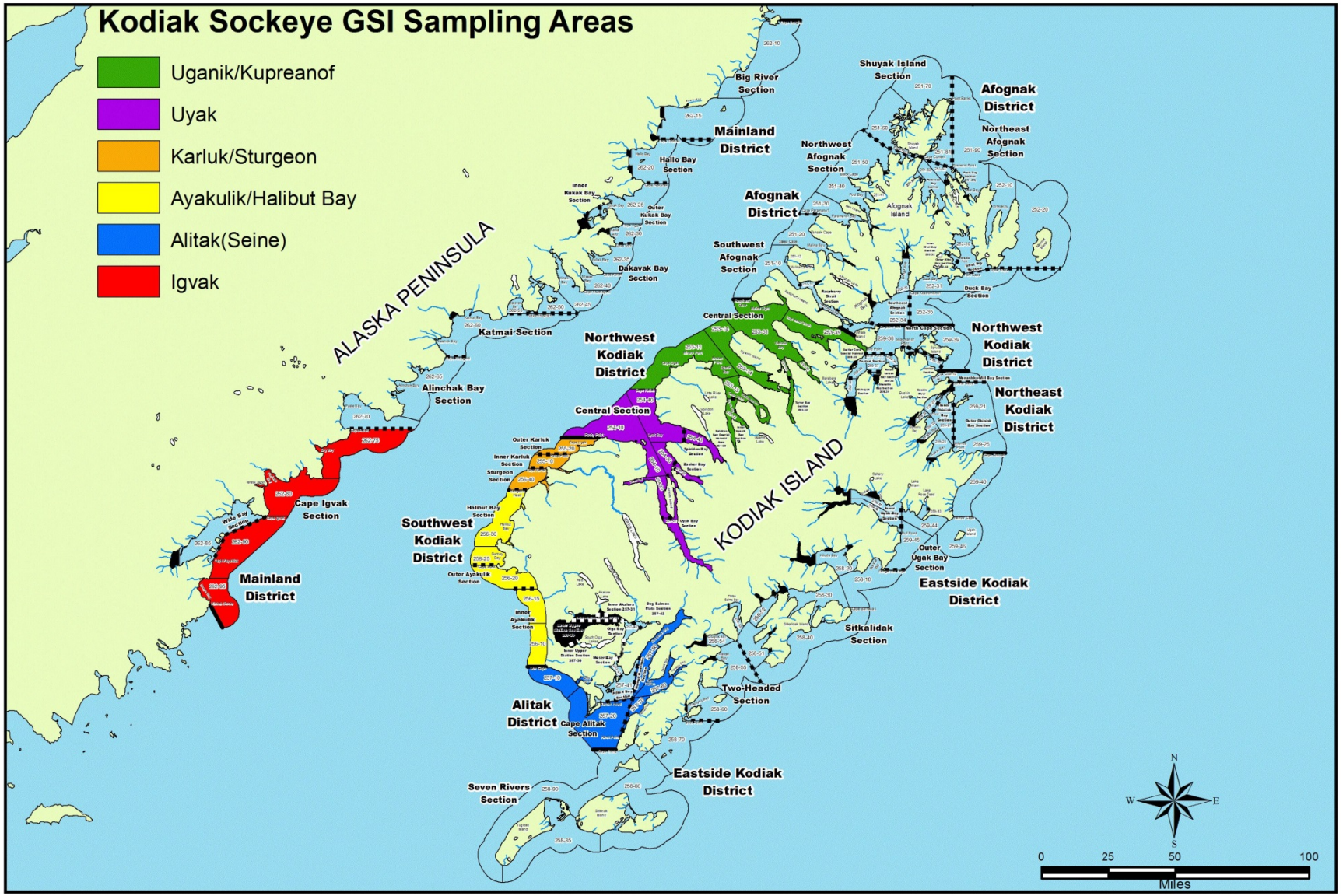

Figure 1.–The Kodiak Management Area, Westward Region, with the areas included in this study highlighted.

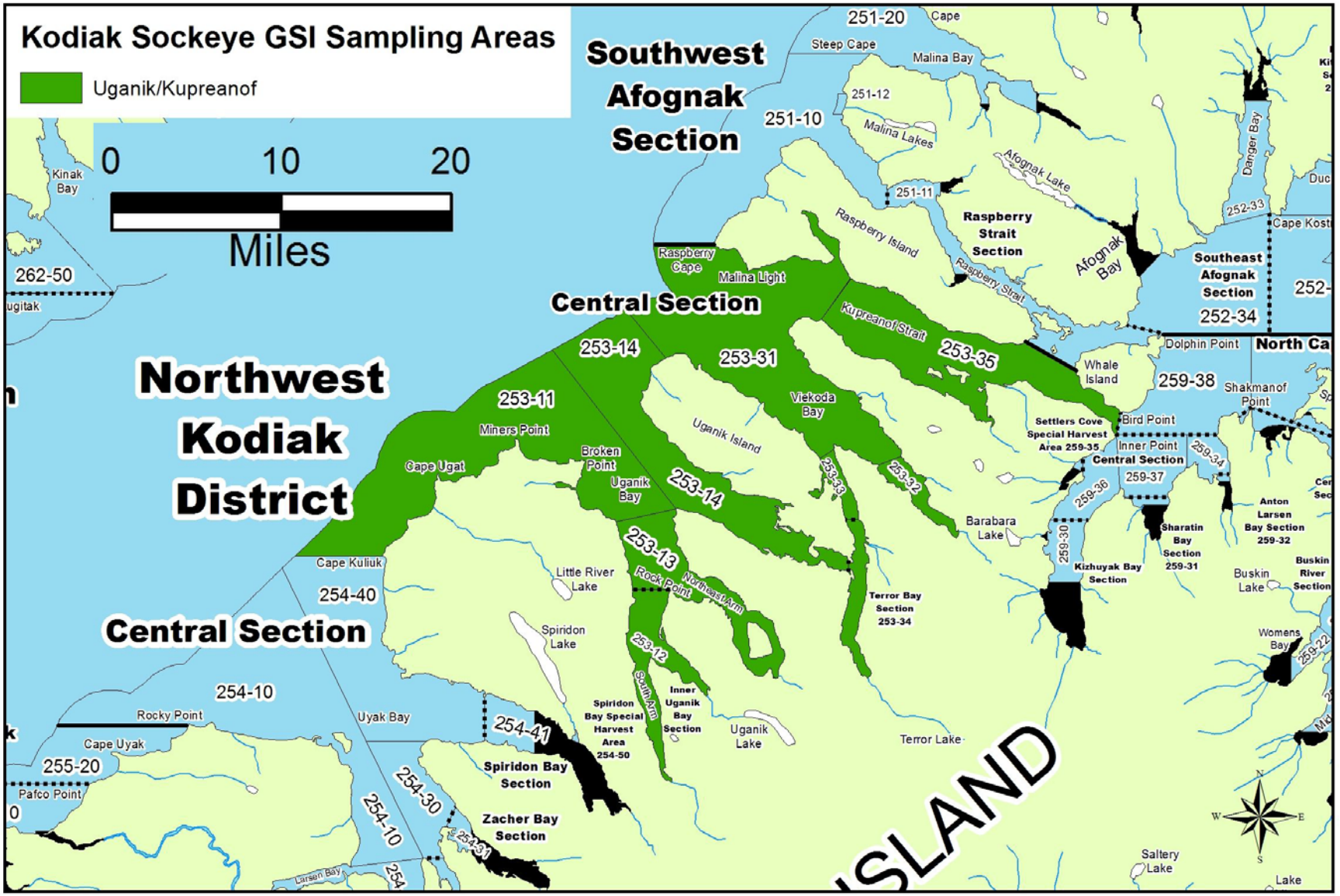

Figure 2.–Statistical areas for the Uganik-Kupreanof spatial stratum (statistical areas 253-11, 12, 13, 14, 31, 32, 33, 34, 35).

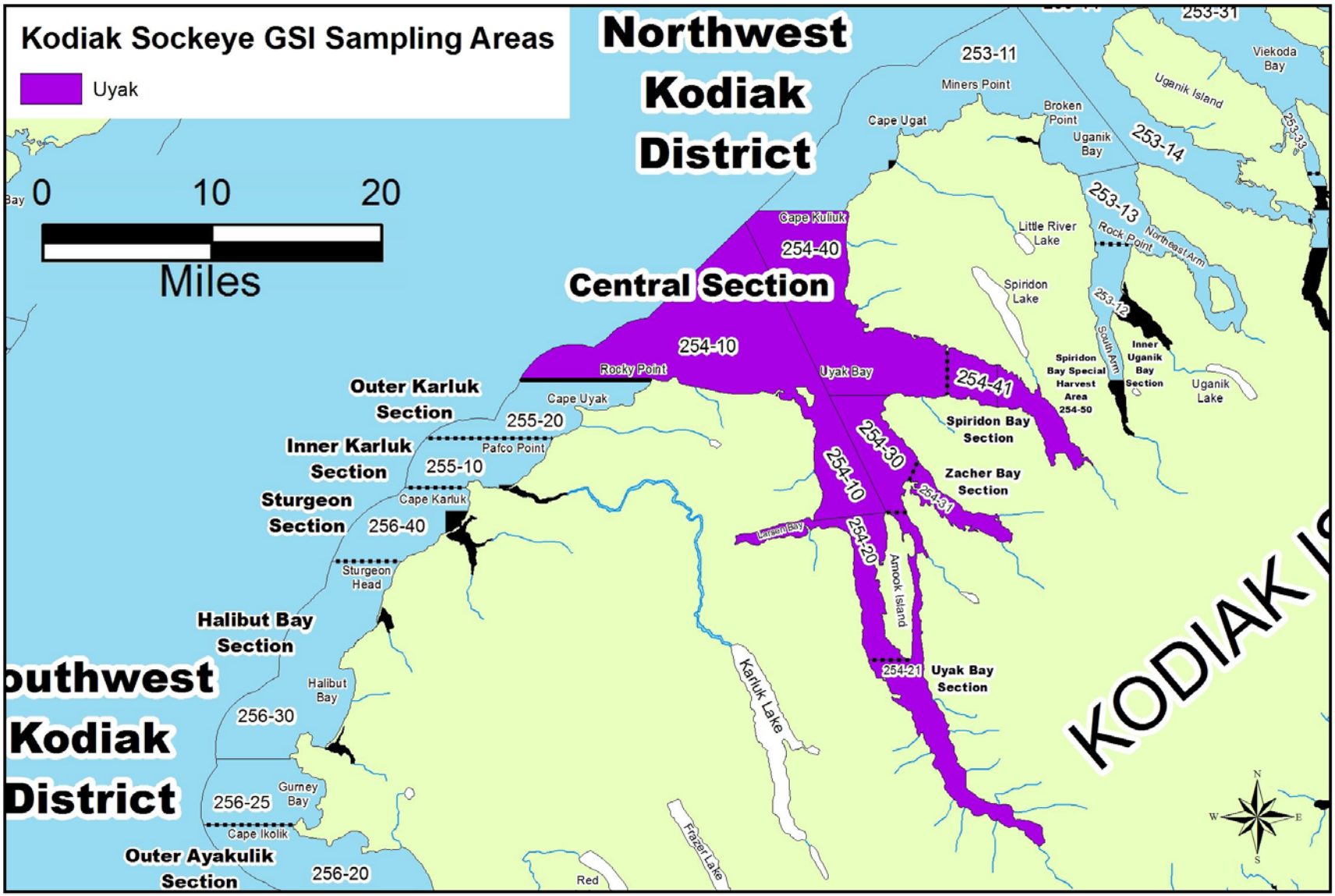

Figure 3.–Statistical areas for the Uyak spatial stratum (statistical areas 254-10, 20, 21, 30, 31, 40, 41; does not include Spiridon SHA 254-50).

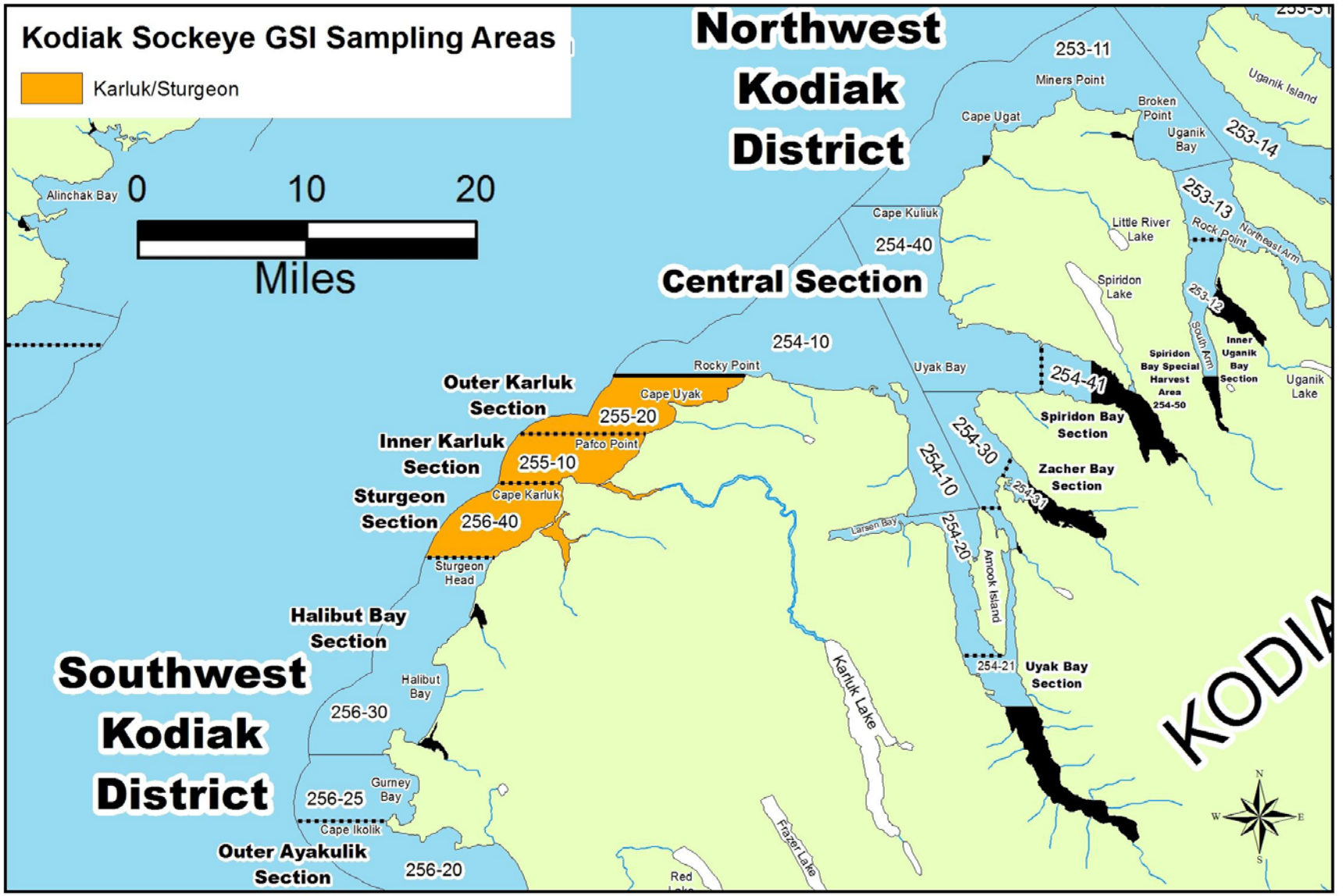

Figure 4.–Statistical areas for the Karluk-Sturgeon spatial stratum (statistical areas 255-10, 20; 256-40).

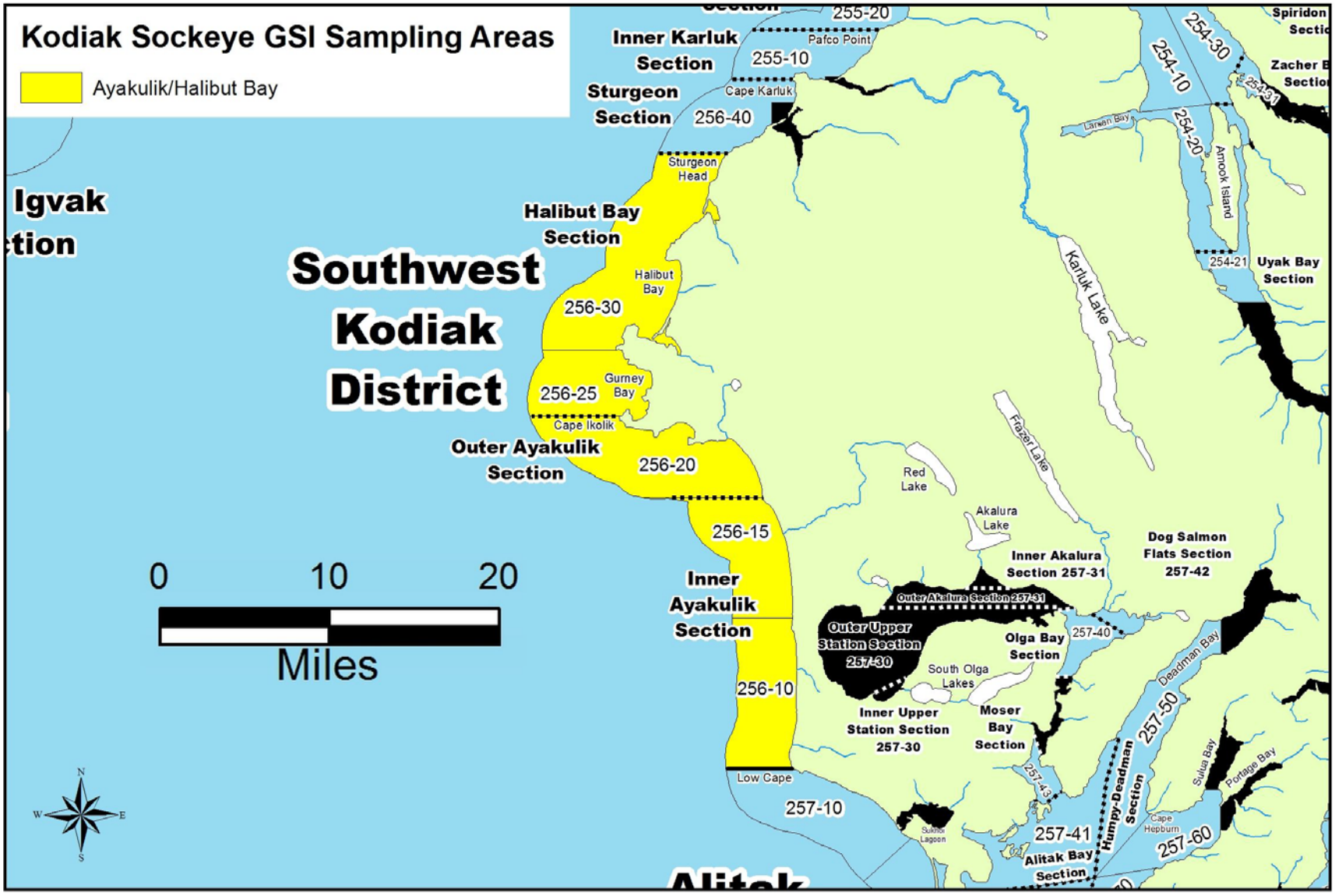

Figure 5.–Statistical areas for the Ayakulik-Halibut Bay spatial stratum (statistical areas 256-10, 15, 20, 25, 30).

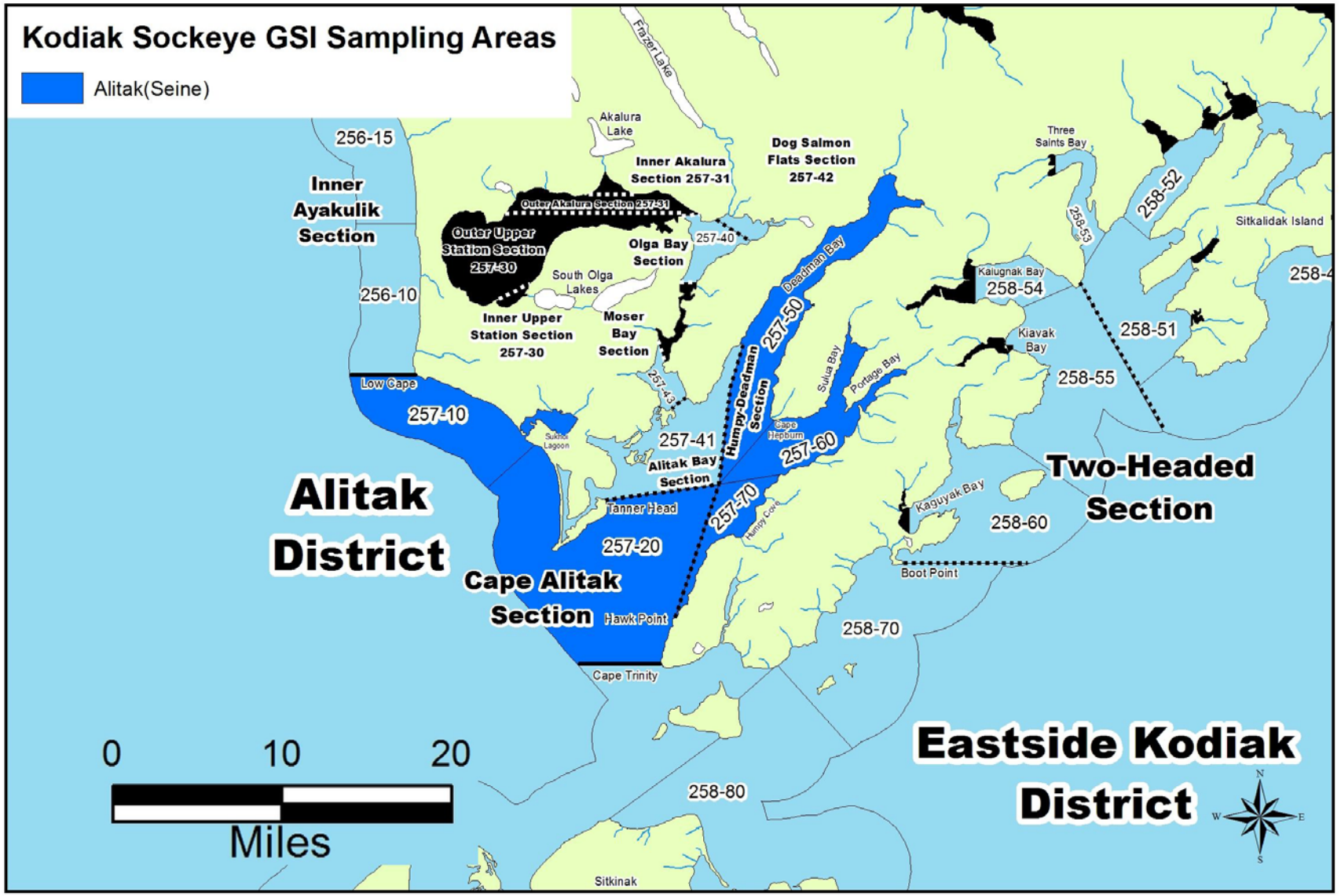

Figure 6.–Statistical areas for the Alitak spatial stratum (statistical areas 257-10, 20, 50, 60, 70; seine harvest only).

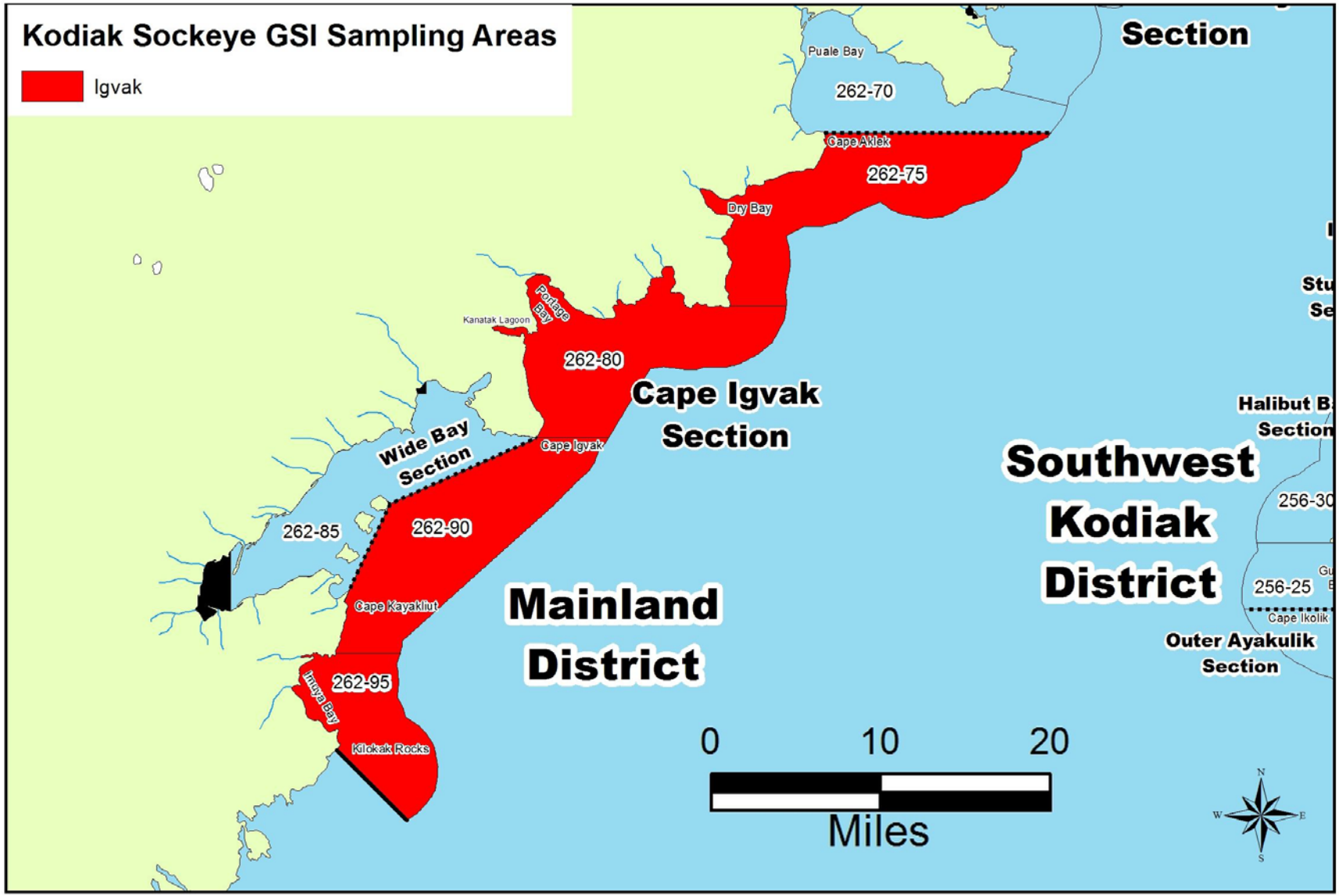

Figure 7.–Statistical areas for the Igvak spatial stratum (statistical areas 262-75, 80, 90, 95).

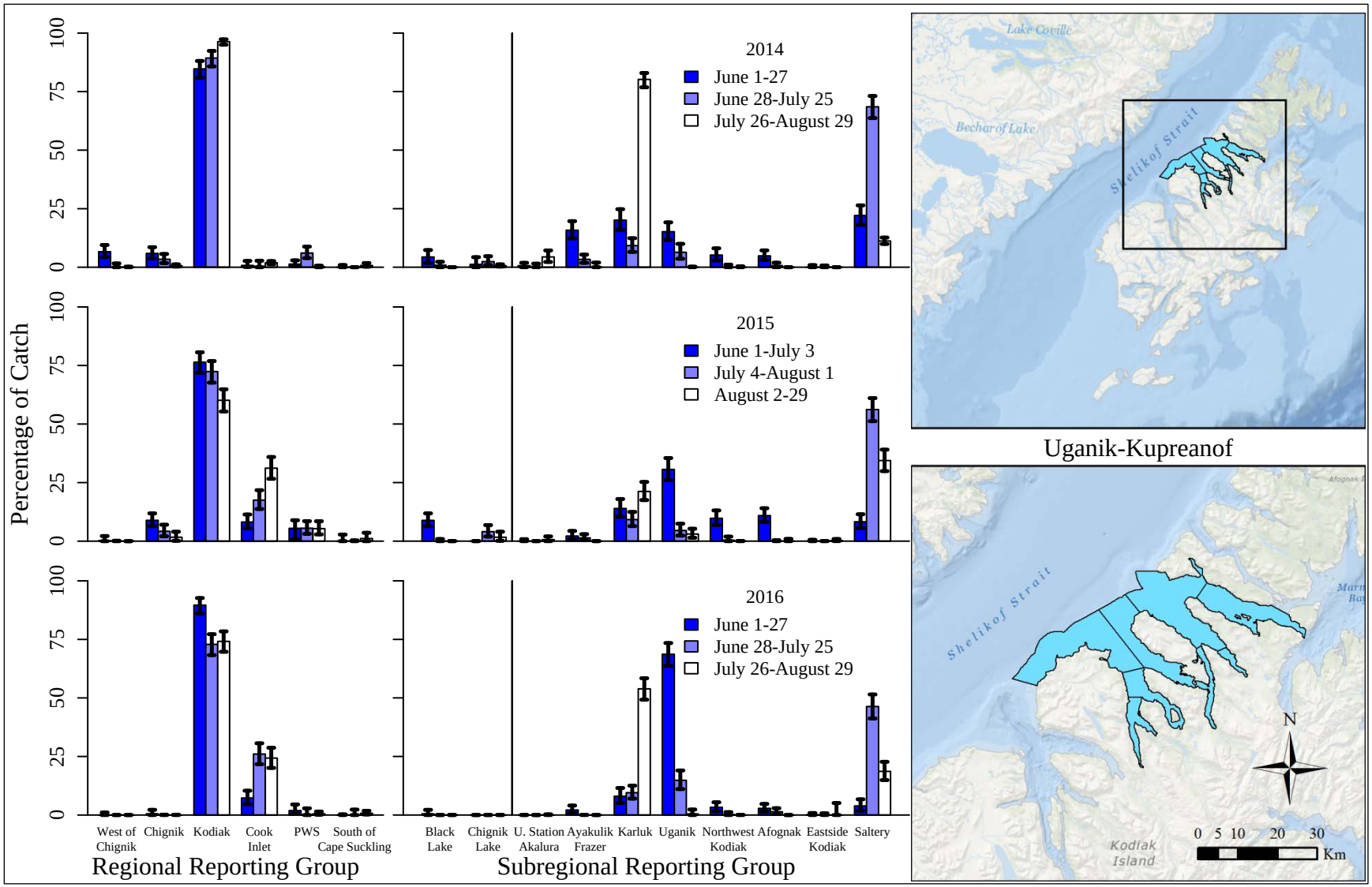

Figure 8.–Stock composition estimates (medians) and 90% credibility intervals of samples of sockeye salmon harvests from Uganik-Kupreanof (statistical areas 253-11, 12, 13, 14, 31, 32, 33, 34, 35), Kodiak Management Area, Alaska 2014–2016.

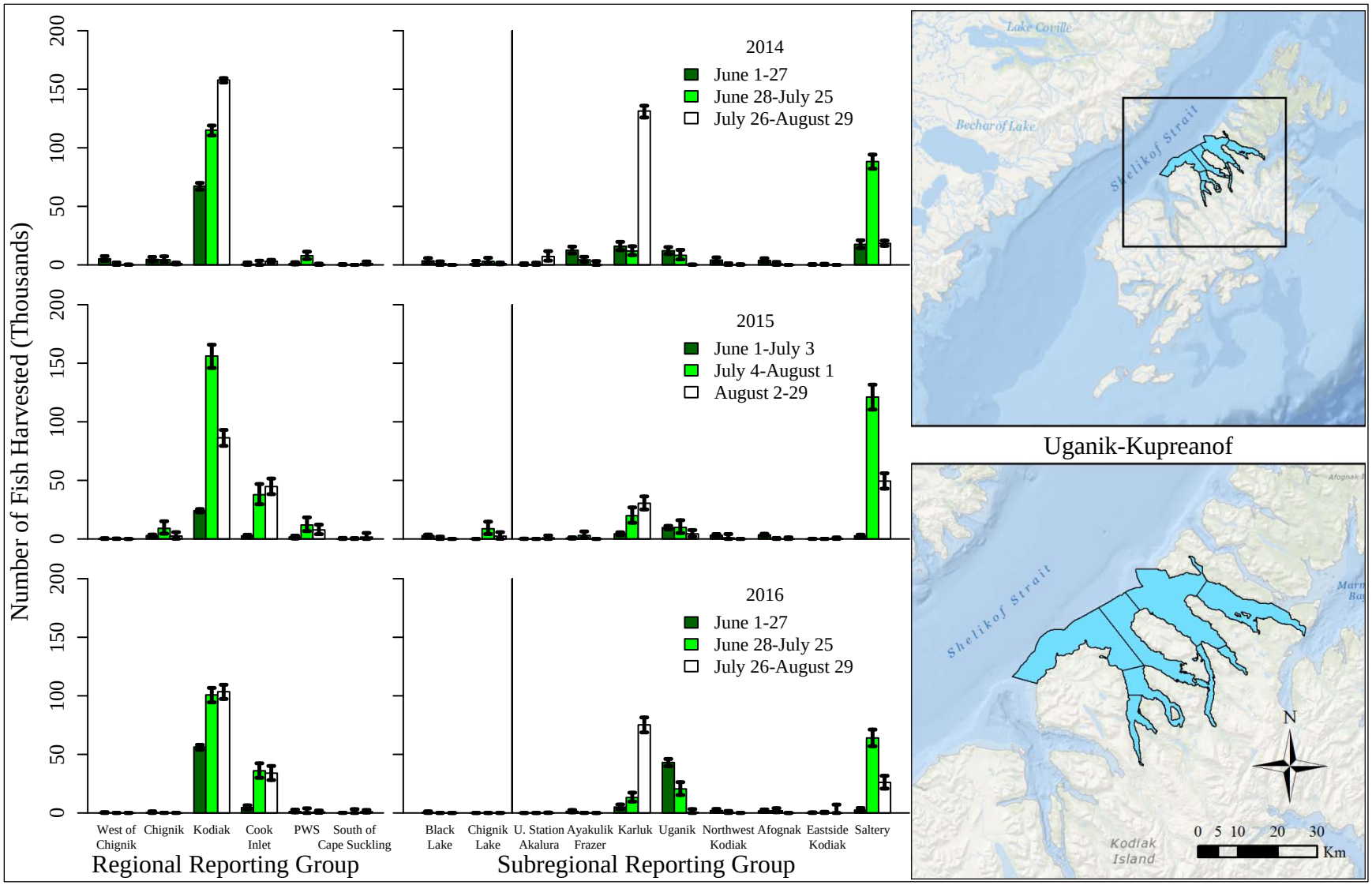

Figure 9.–Stock-specific harvest estimates (medians) and 90% credibility intervals of samples of sockeye salmon harvests from Uganik-Kupreanof (statistical areas 253-11, 12, 13, 14, 31, 32, 33, 34, 35), Kodiak Management Area, Alaska 2014–2016.

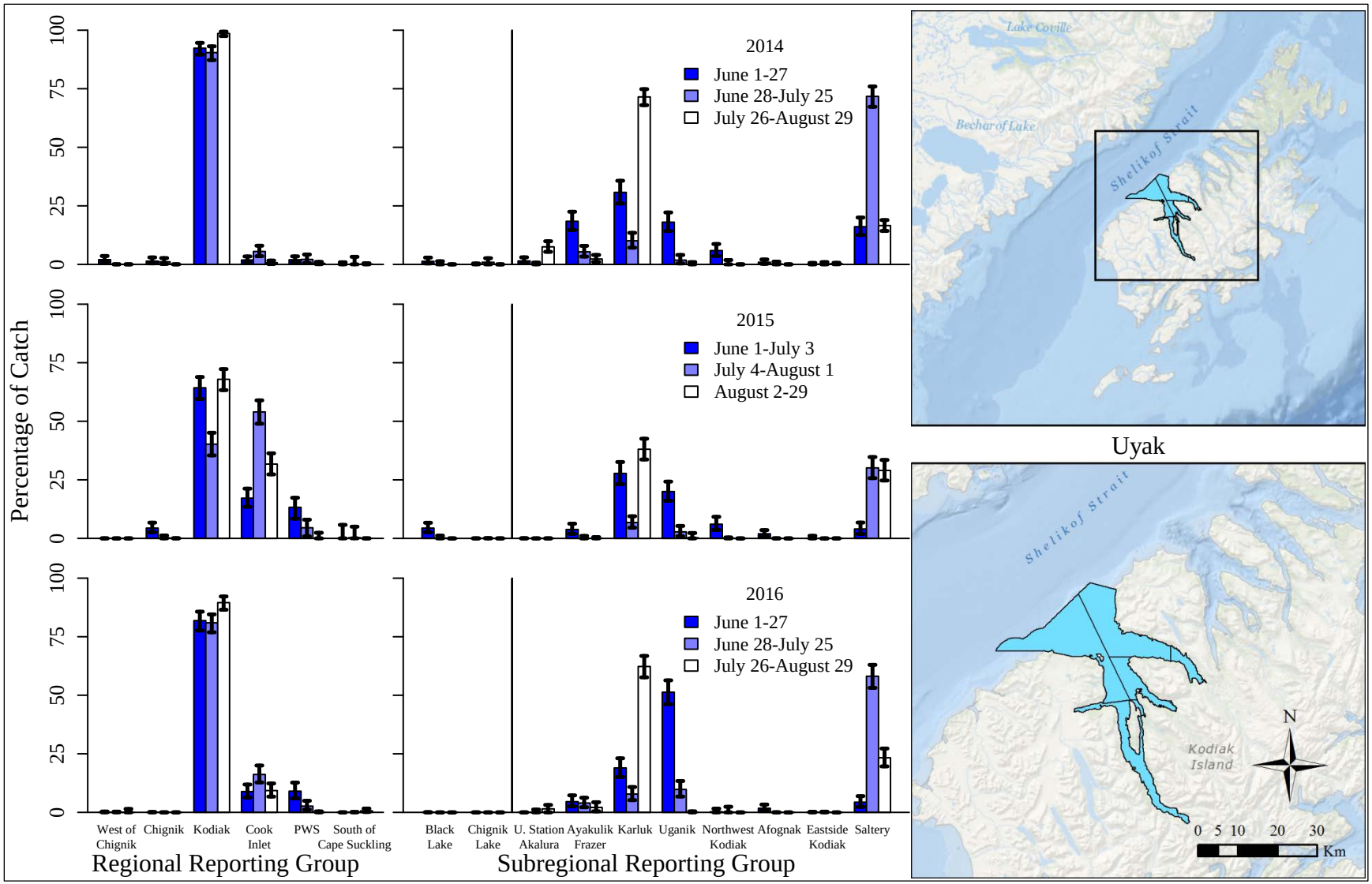

Figure 10.–Stock composition estimates (medians) and 90% credibility intervals of samples of sockeye salmon harvests from Uyak (statistical areas 254-10, 20, 21, 30, 31, 40, 41; does not include Spiridon SHA 254-50), Kodiak Management Area, Alaska 2014–2016.

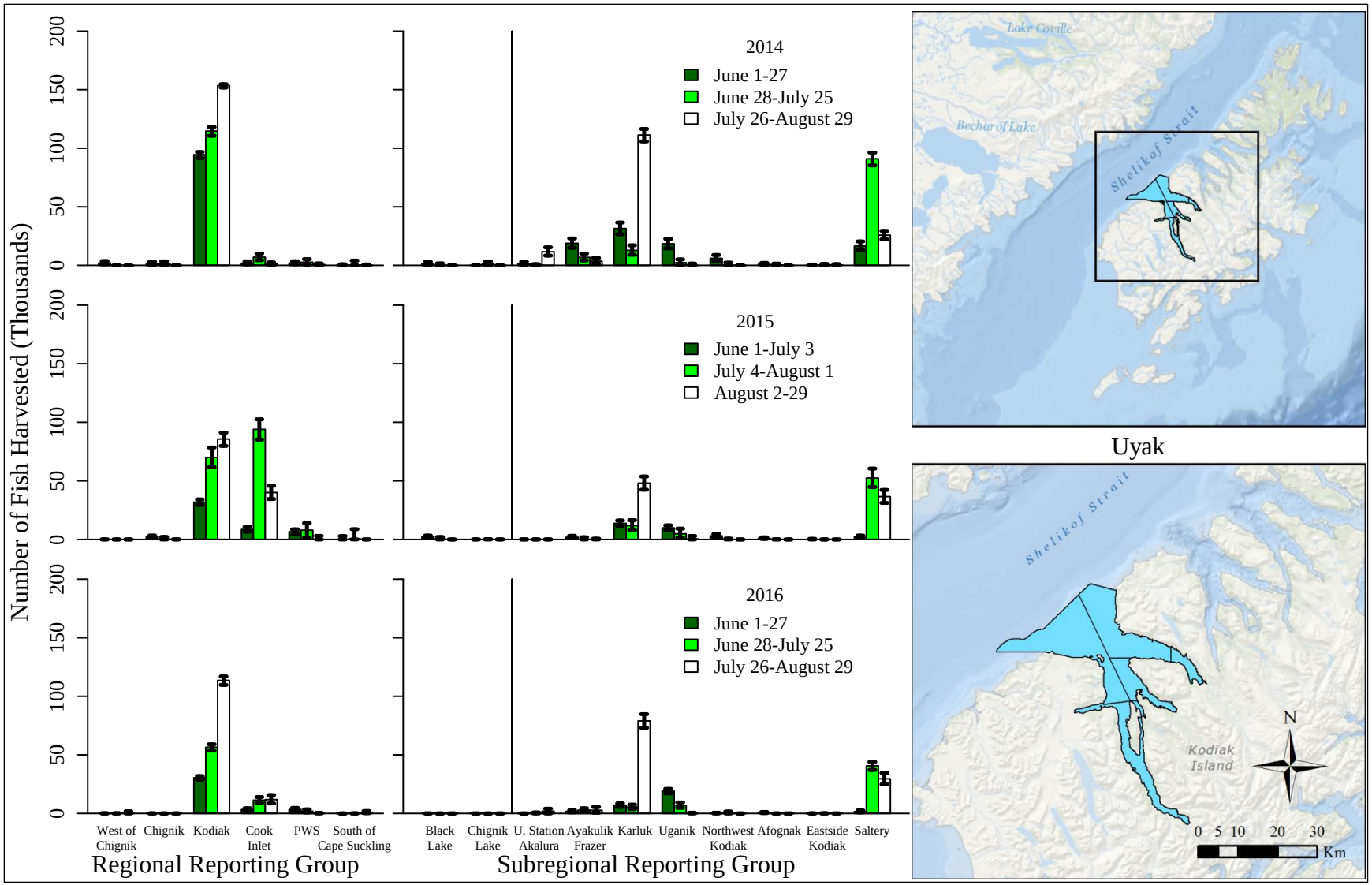

Figure 11.–Stock-specific harvest estimates (medians) and 90% credibility intervals of samples of sockeye salmon harvests from Uyak (statistical areas 254-10, 20, 21, 30, 31, 40, 41; does not include Spiridon SHA 254-50), Kodiak Management Area, Alaska 2014–2016.

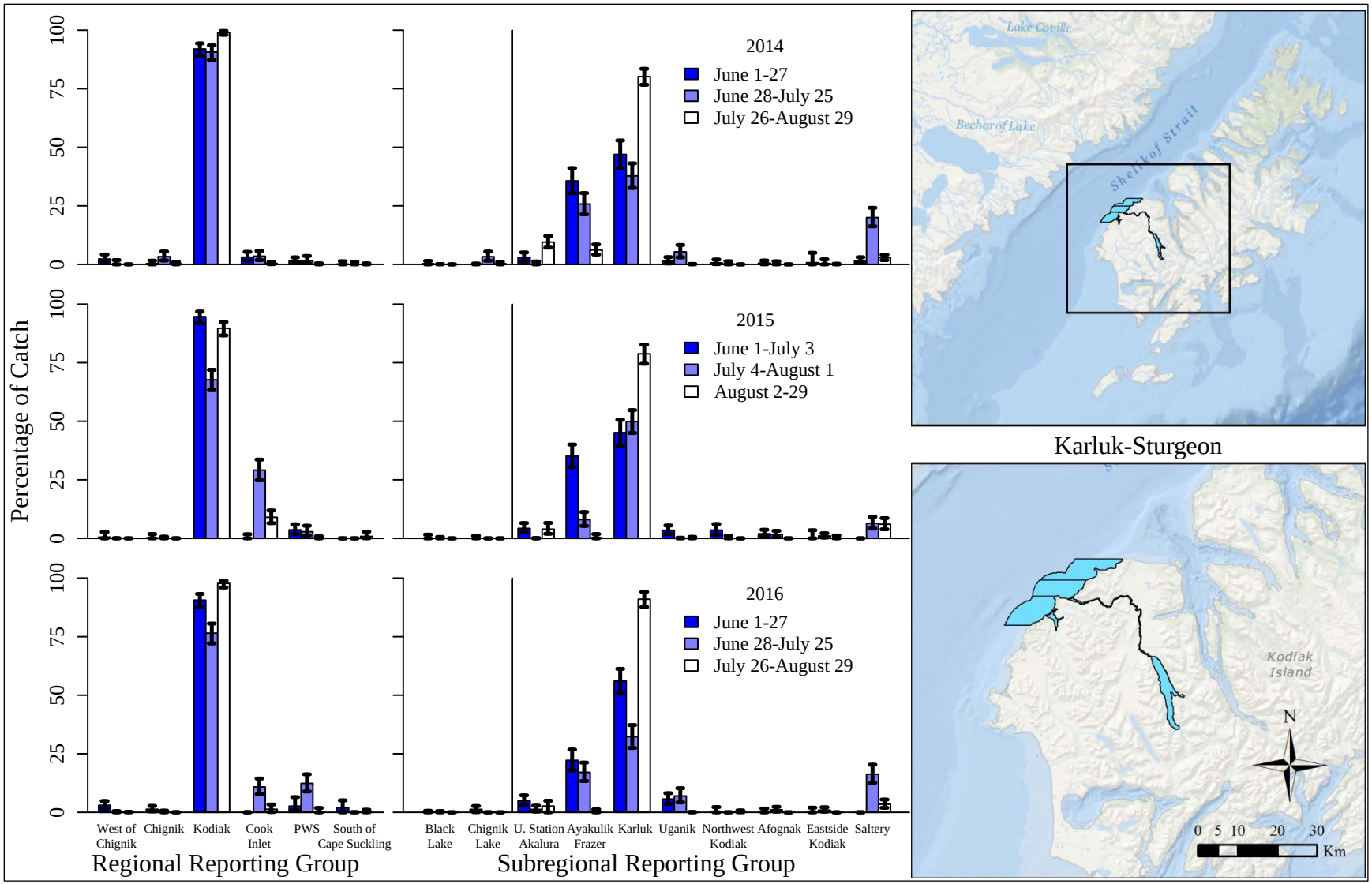

Figure 12.–Stock composition estimates (medians) and 90% credibility intervals of samples of sockeye salmon harvests from Karluk-Sturgeon (statistical areas 255-10, 20; 256-40), Kodiak Management Area, Alaska 2014–2016.

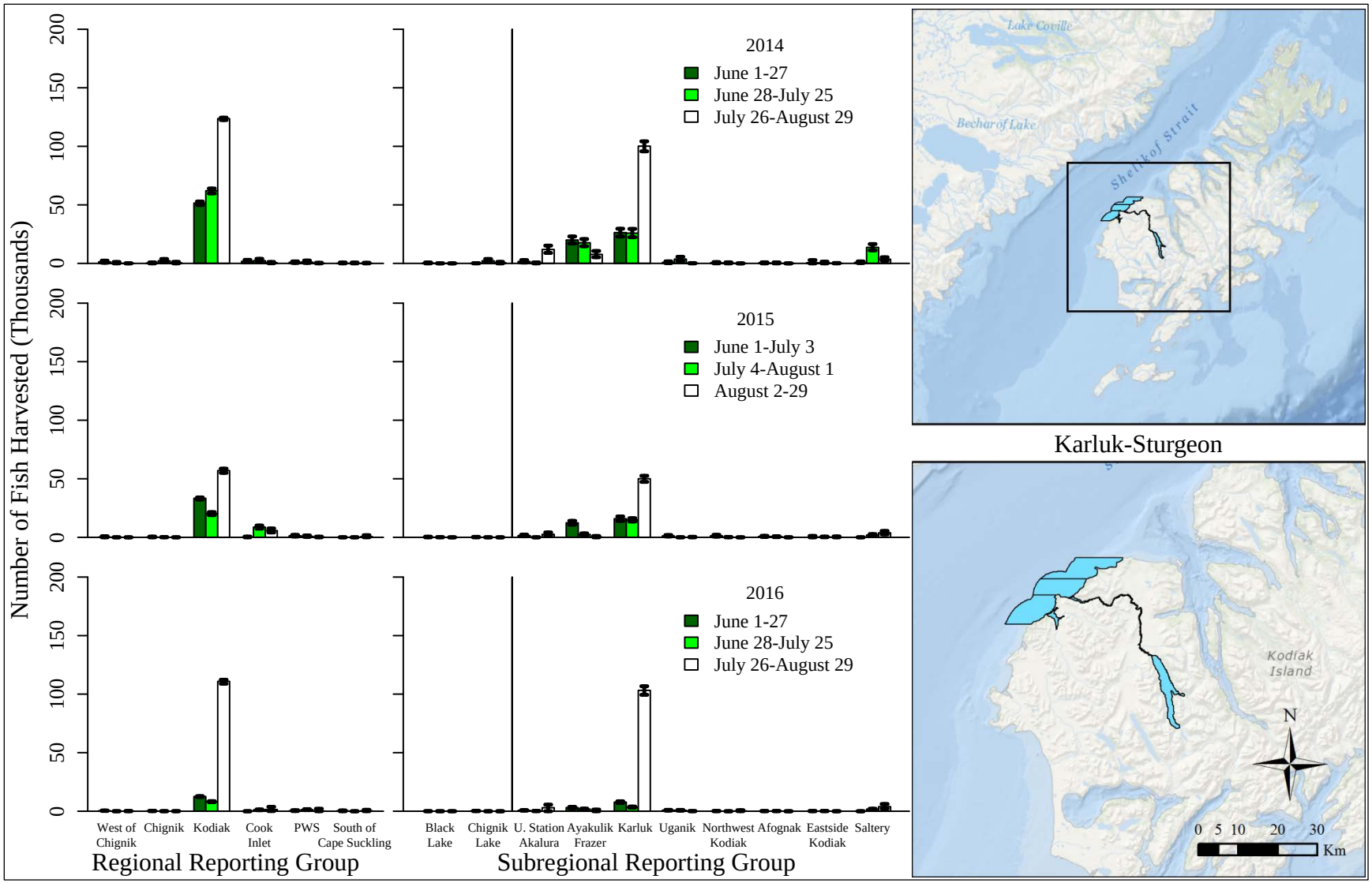

Figure 13.–Stock-specific harvest estimates (medians) and 90% credibility intervals of samples of sockeye salmon harvests from Karluk-Sturgeon (statistical areas 255-10, 20; 256-40), Kodiak Management Area, Alaska 2014–2016.

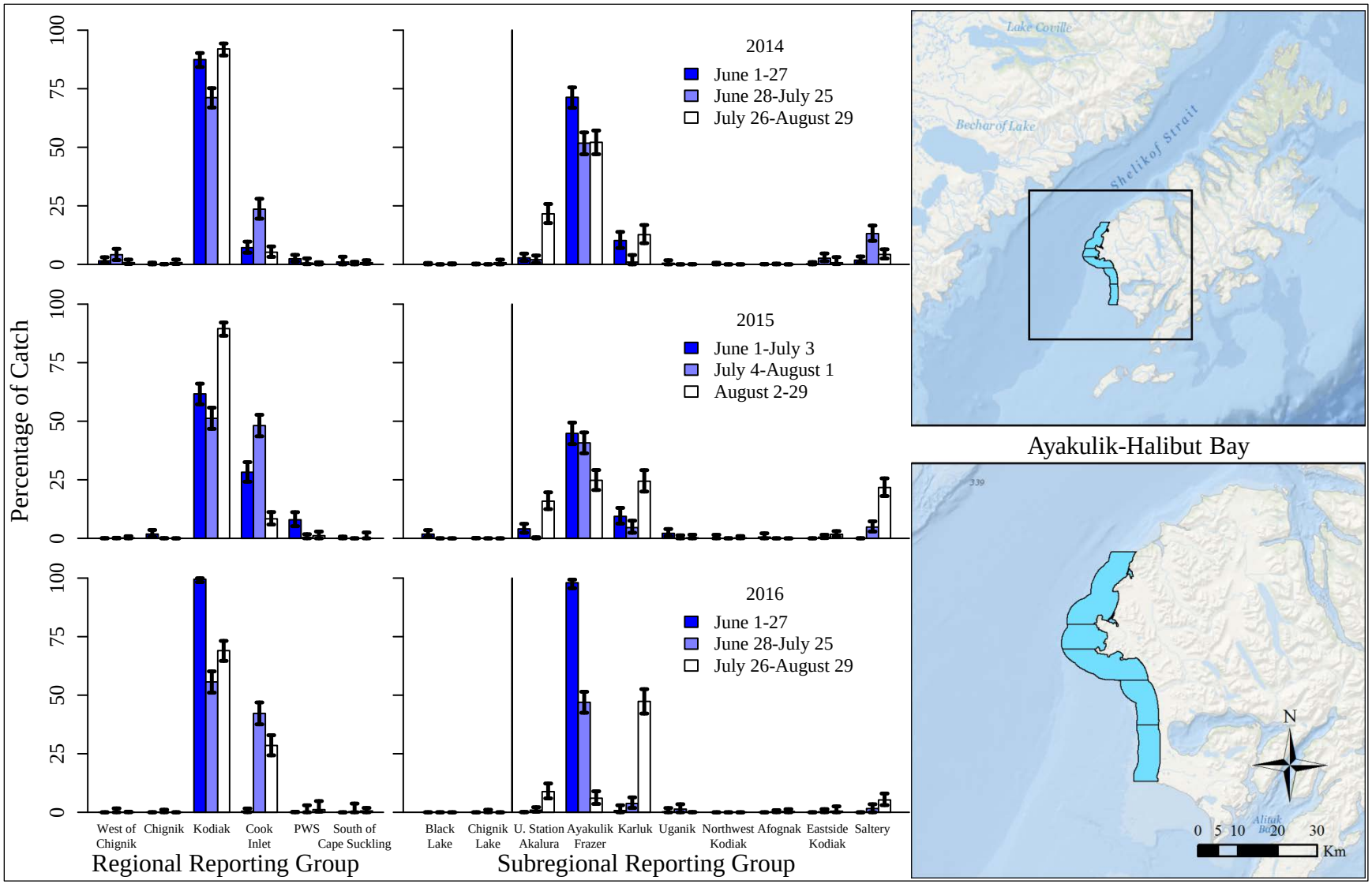

Figure 14.–Stock composition estimates (medians) and 90% credibility intervals of samples of sockeye salmon harvests from Ayakulik-Halibut Bay (statistical areas 256-10, 15, 20, 25, 30), Kodiak Management Area, Alaska 2014–2016.

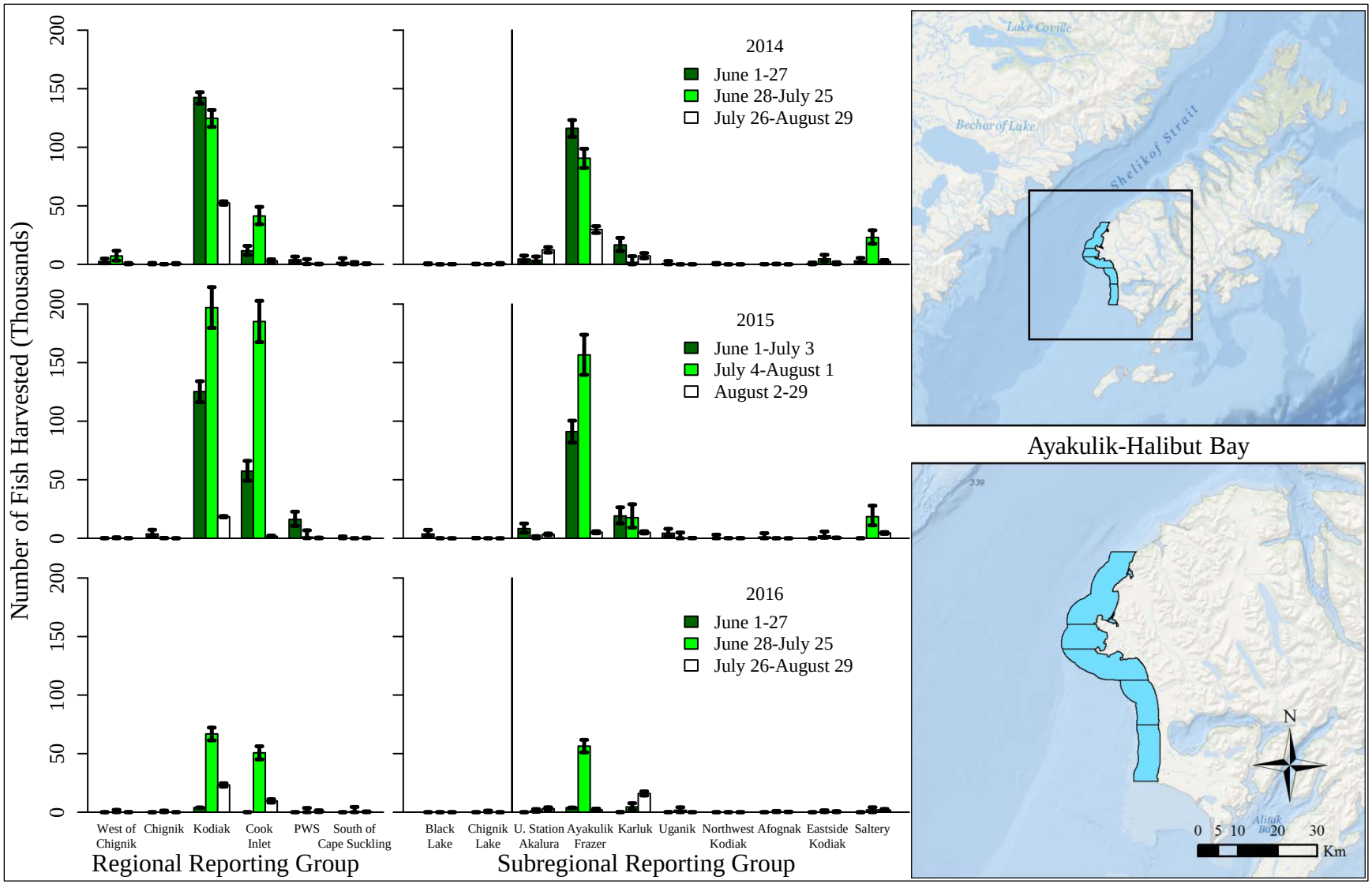

Figure 15.–Stock-specific harvest estimates (medians) and 90% credibility intervals of samples of sockeye salmon harvests from Ayakulik-Halibut Bay (statistical areas 256-10, 15, 20, 25, 30), Kodiak Management Area, Alaska 2014–2016.

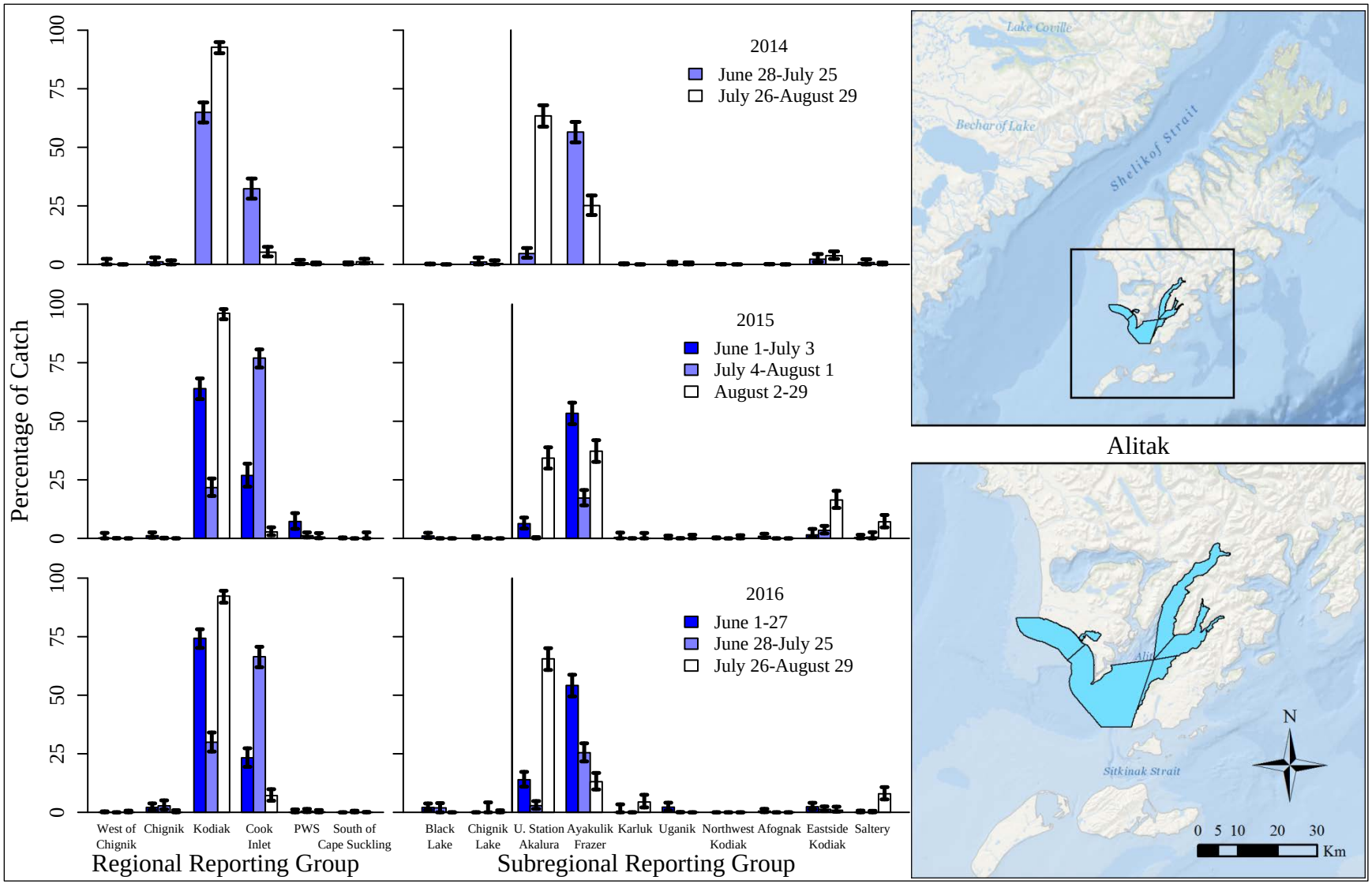

Figure 16.–Stock composition estimates (medians) and 90% credibility intervals of samples of sockeye salmon harvests from Alitak (statistical areas 257-10, 20, 50, 60, 70; seine harvest only), Kodiak Management Area, Alaska 2014–2016.

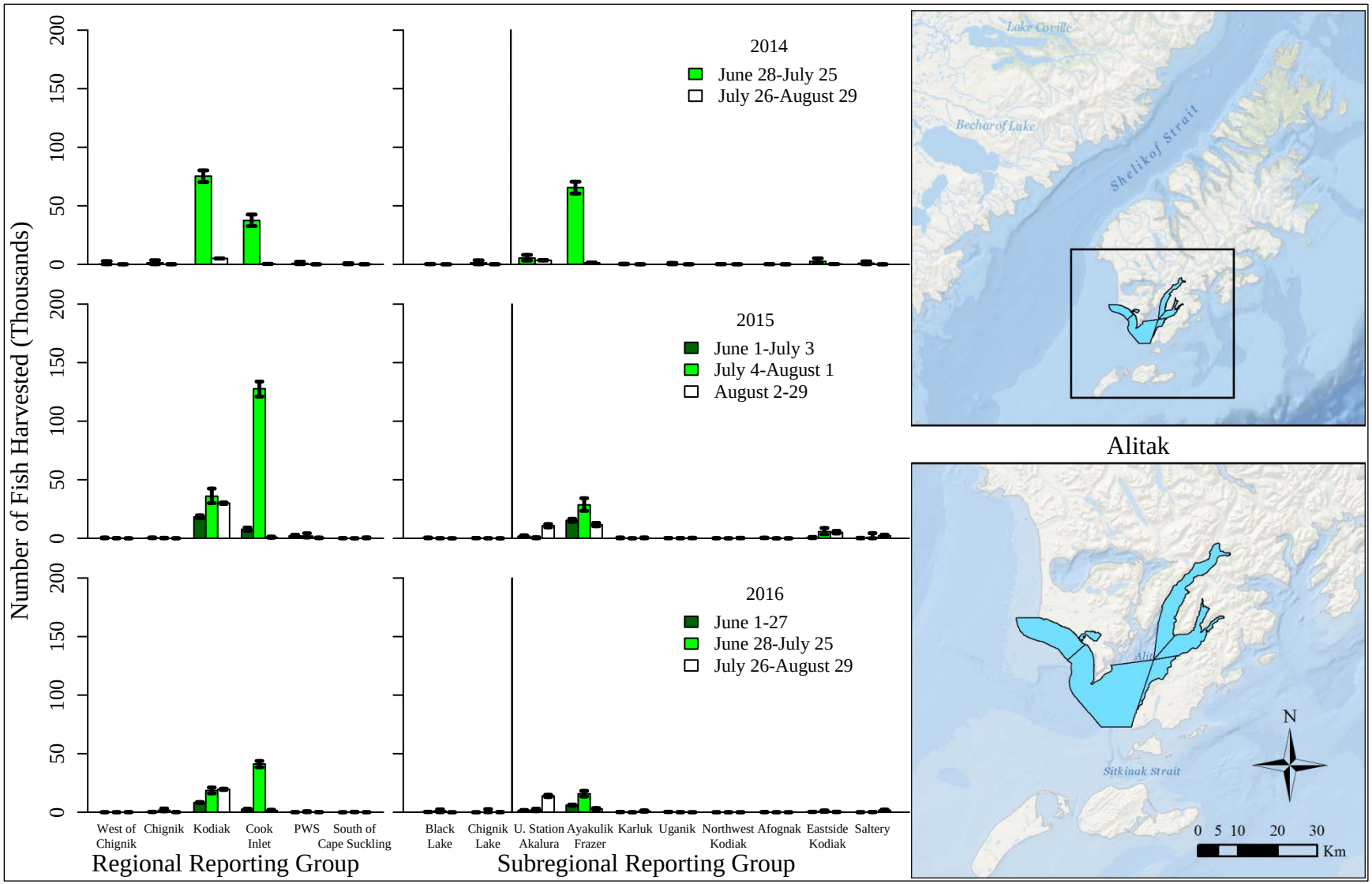

Figure 17.–Stock-specific harvest estimates (medians) and 90% credibility intervals of samples of sockeye salmon harvests from Alitak (statistical areas 257-10, 20, 50, 60, 70; seine harvest only), Kodiak Management Area, Alaska 2014–2016.

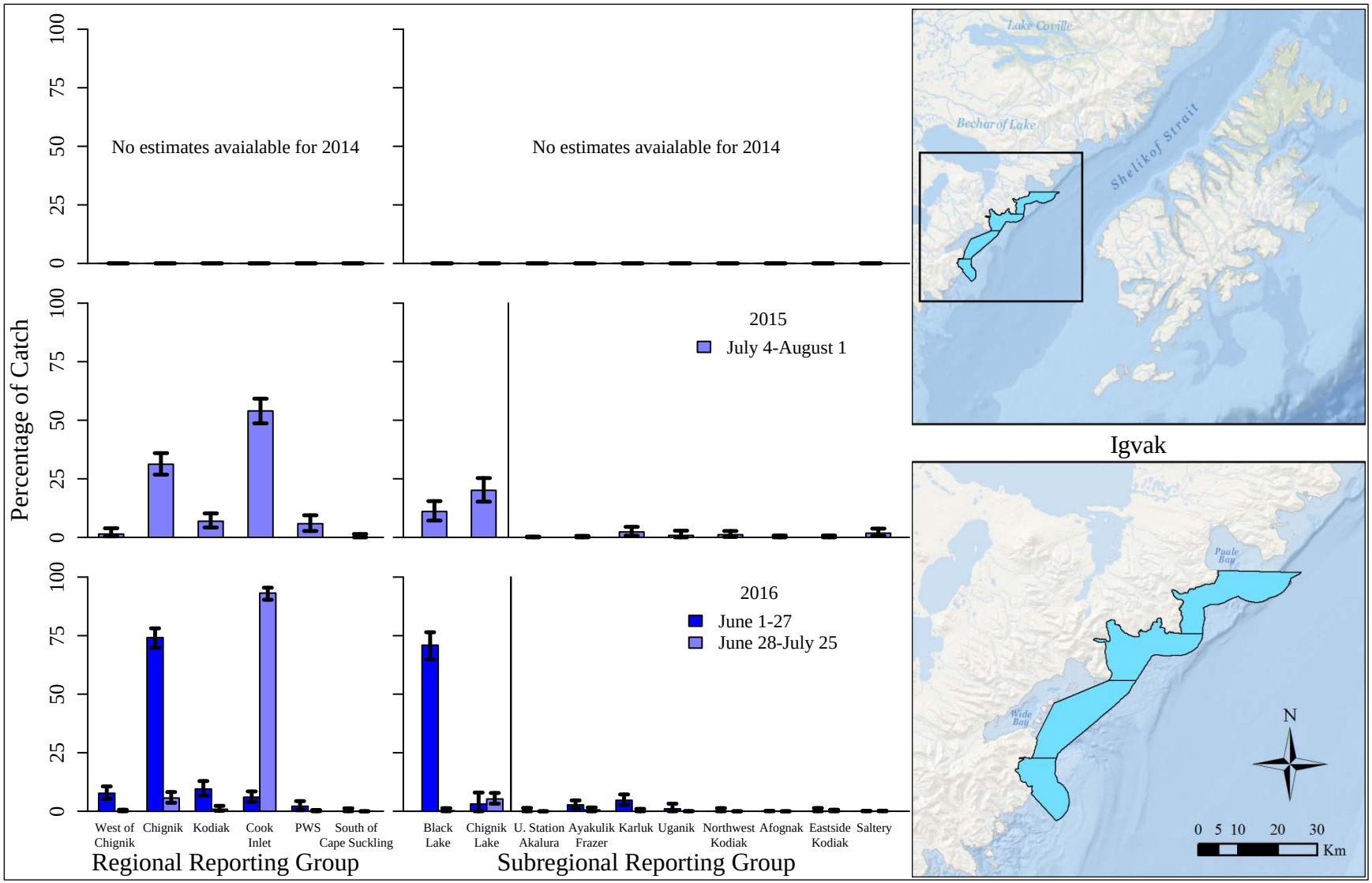

Figure 18.–Stock composition estimates (medians) and 90% credibility intervals of samples of sockeye salmon harvests from Igvak (statistical areas 262-75, 80, 90, 95), Kodiak Management Area, Alaska 2014–2016.

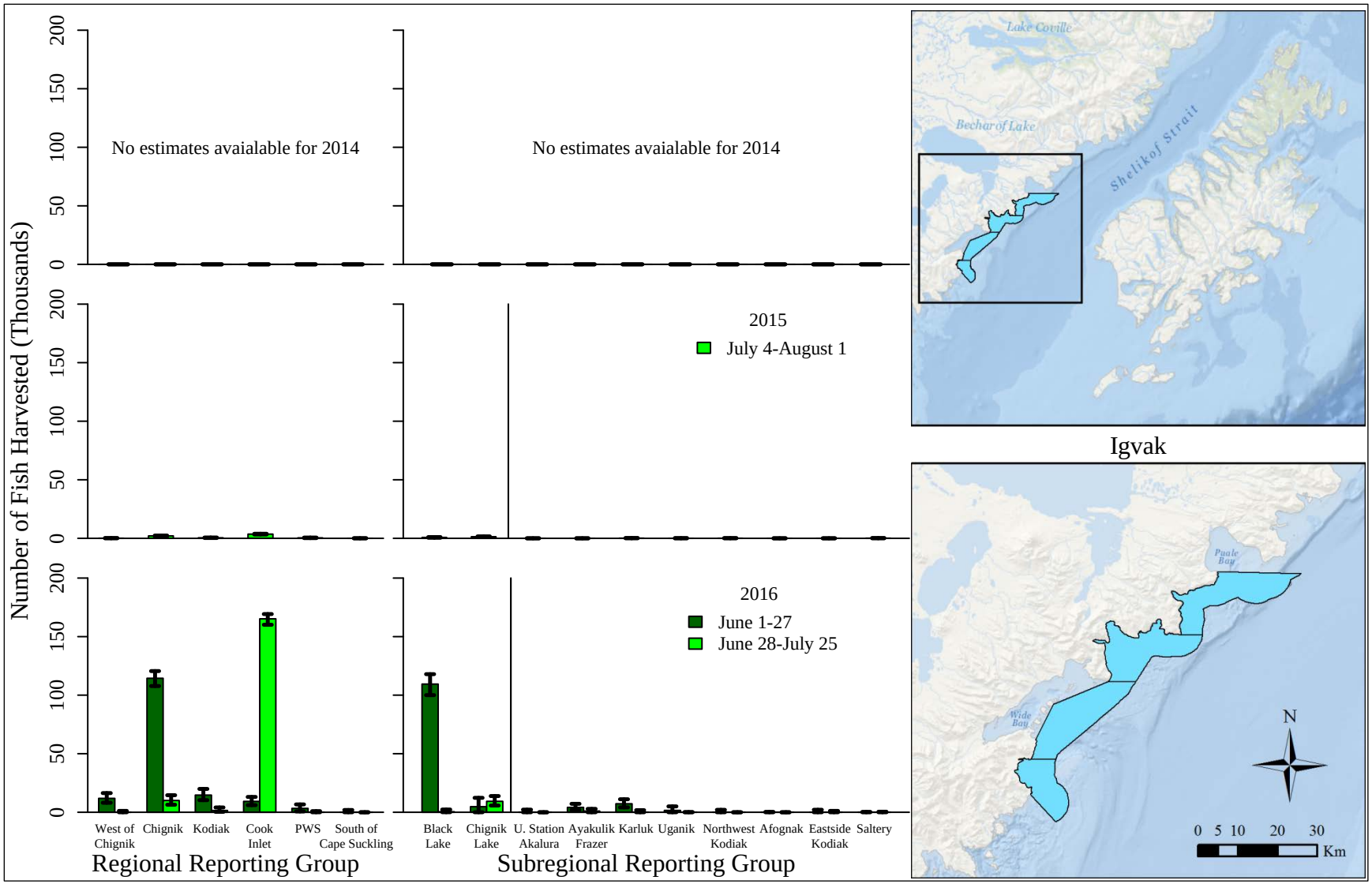

Figure 19.–Stock-specific harvest estimates (medians) and 90% credibility intervals of samples of sockeye salmon harvests from Igvak (statistical areas 262-75, 80, 90, 95), Kodiak Management Area, Alaska 2014–2016.

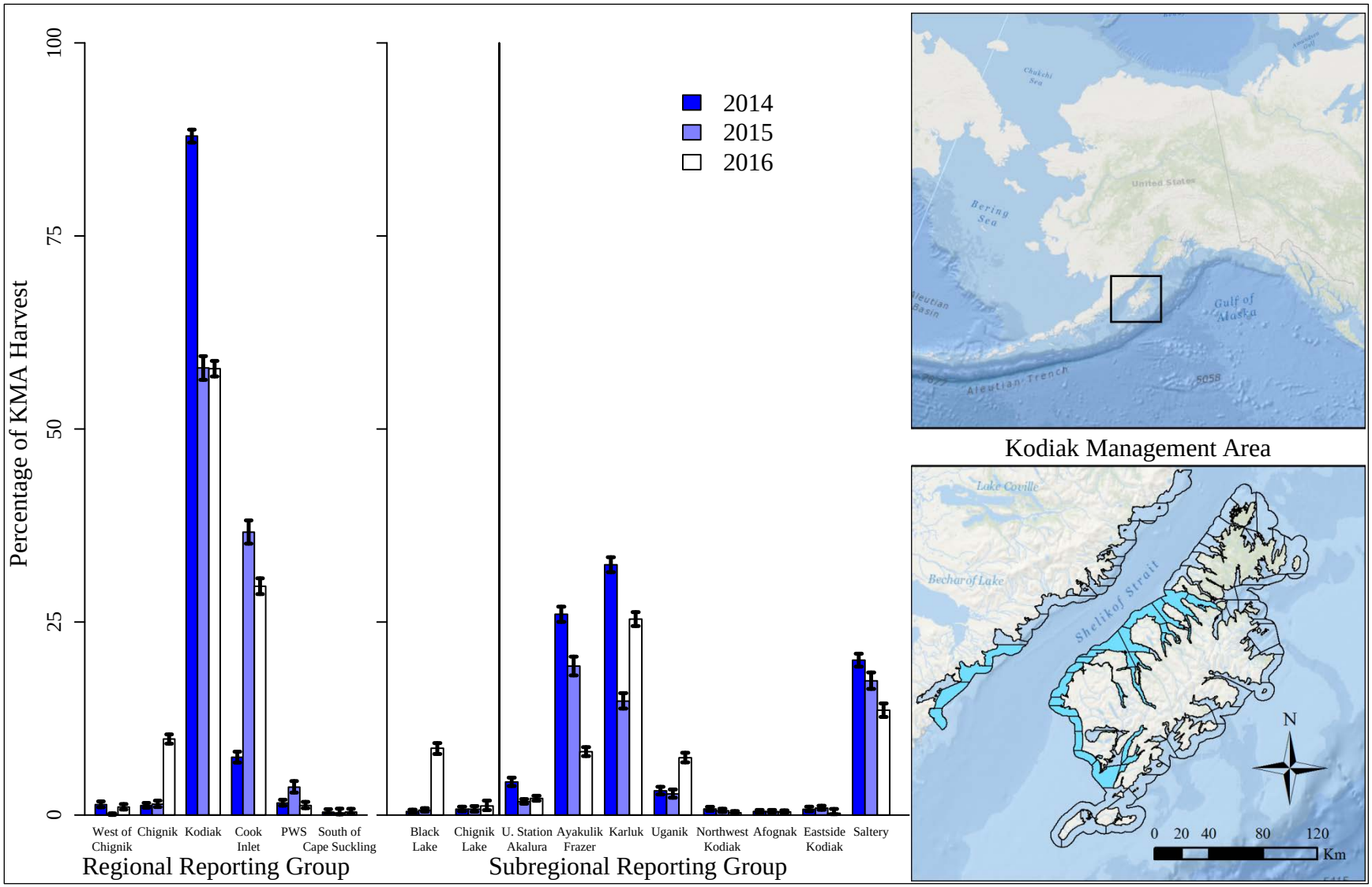

Figure 20.–Stock composition estimates (medians) and 90% credibility intervals of samples of sockeye salmon harvests from Kodiak Management Area, Alaska 2014–2016.

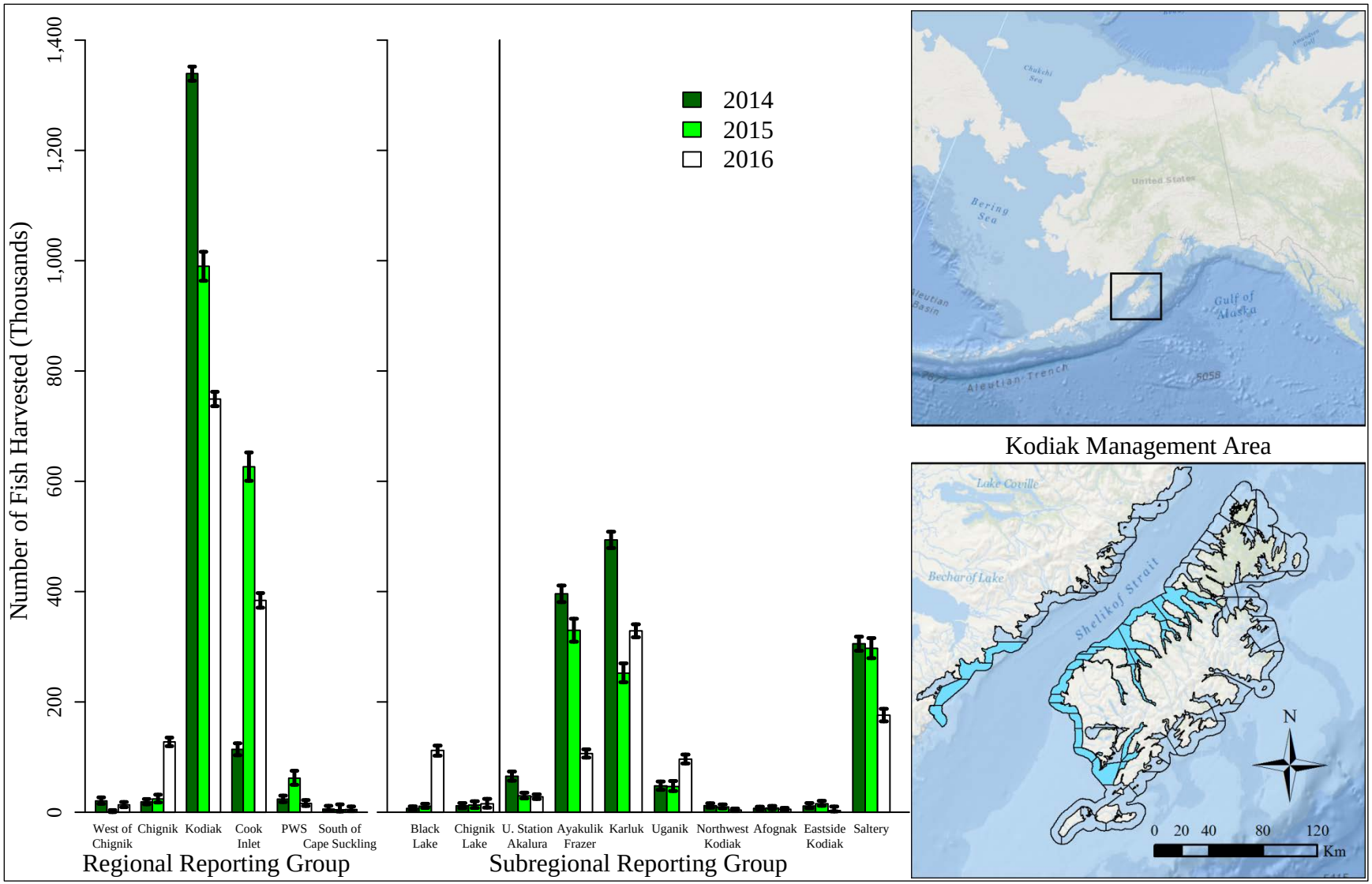

Figure 21.–Stock-specific harvest estimates (medians) and 90% credibility intervals of samples of sockeye salmon harvests from Kodiak Management Area, Alaska 2014–2016.

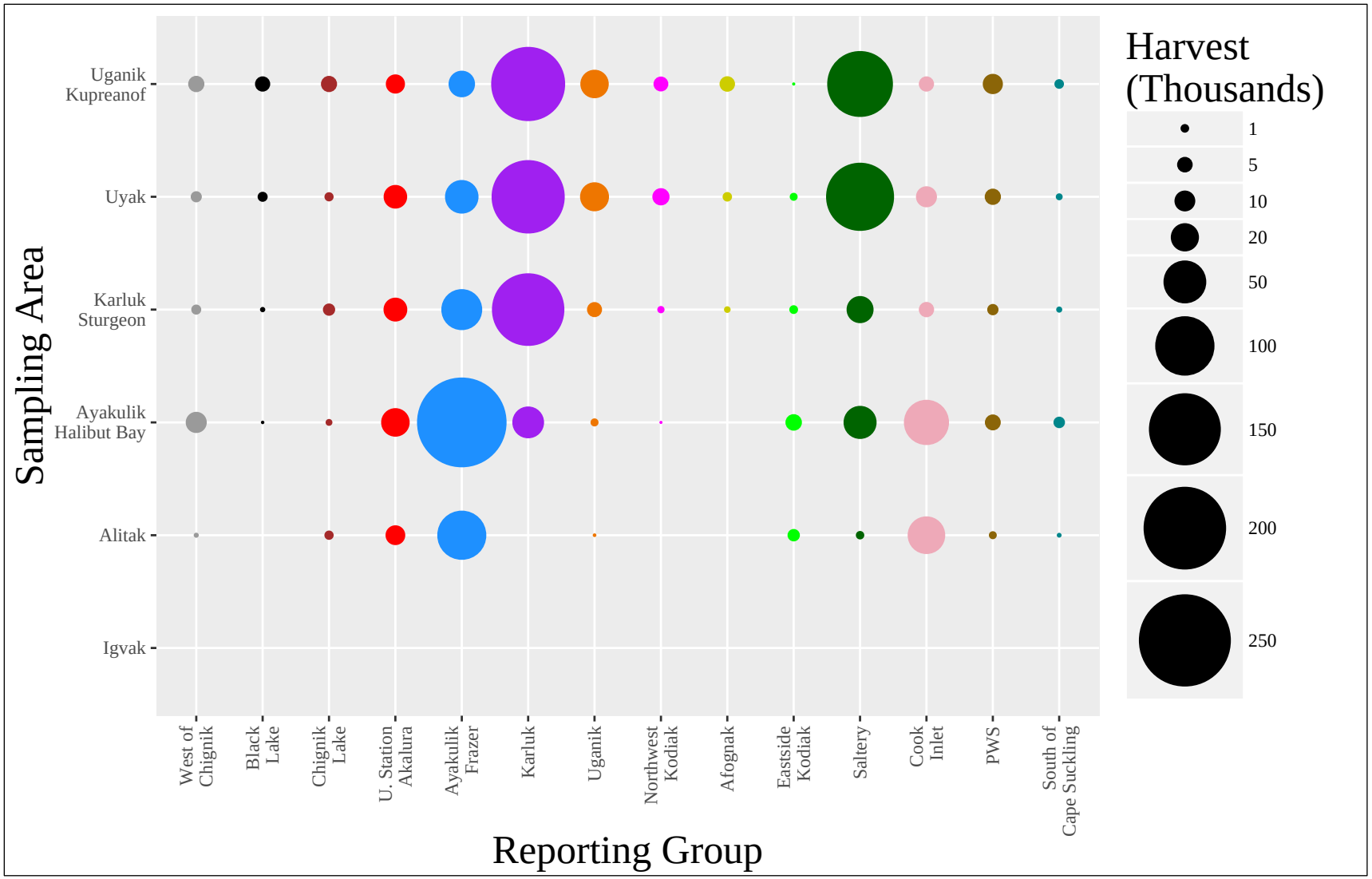

Figure 22.–Annual stock-specific harvest estimates (medians) of sockeye salmon from sampling areas in the Kodiak Management Area, 2014. Sampling areas are on the y-axis ordered north to south with Igvak at the bottom. Reporting groups are on the x-axis ordered from north to south. The size of the circle represents the stock-specific harvest for a sampling area.

Note: Colors are from the baseline report (Shedd et al. 2016a).

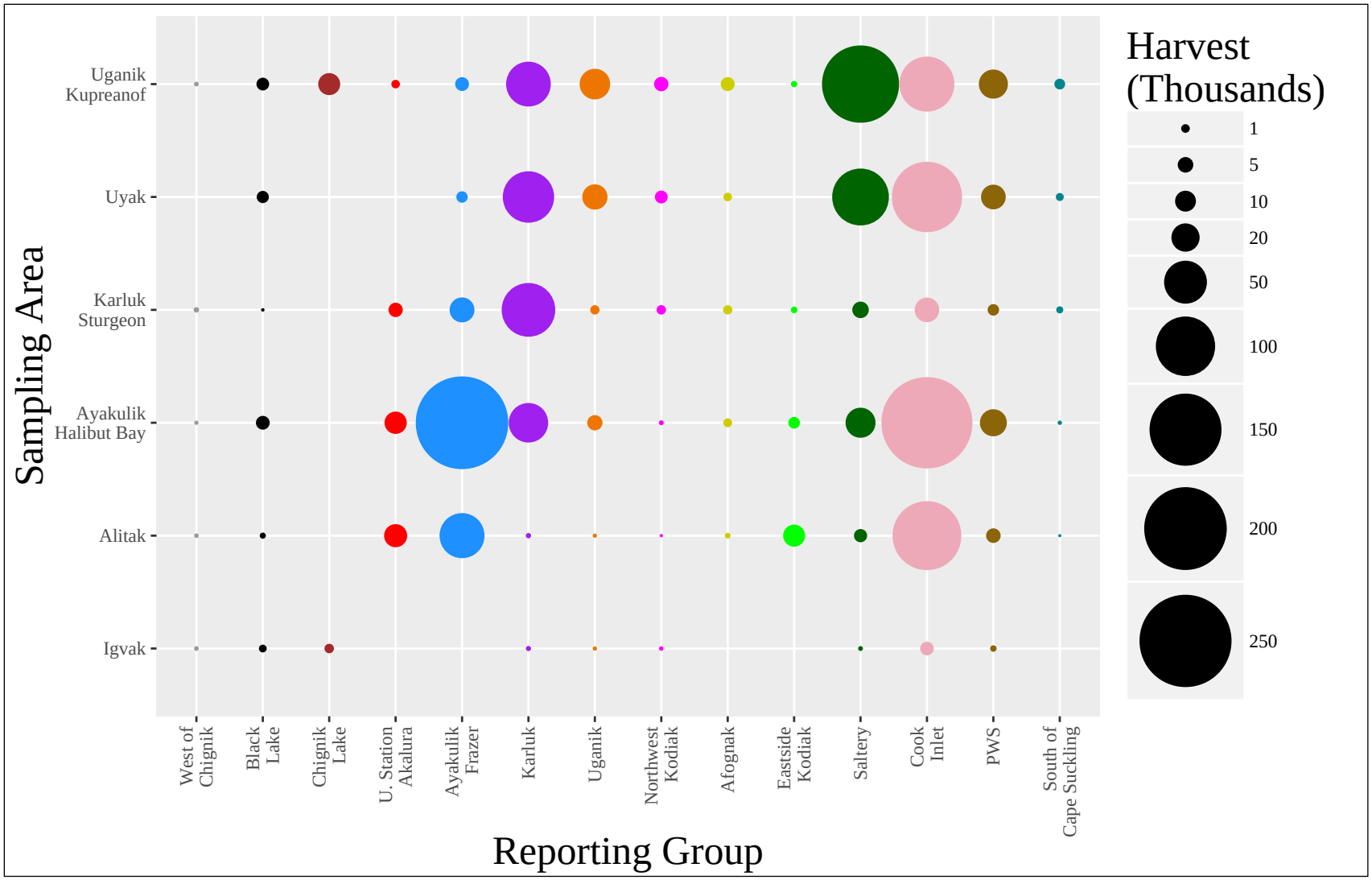

Figure 23.–Annual stock-specific harvest estimates (medians) of sockeye salmon from sampling areas in the Kodiak Management Area, 2015. Sampling areas are on the y-axis ordered north to south with Igvak at the bottom. Reporting groups are on the x-axis ordered from north to south. The size of the circle represents the stock-specific harvest for a sampling area.

Note: Colors are from the baseline report (Shedd et al. 2016a).

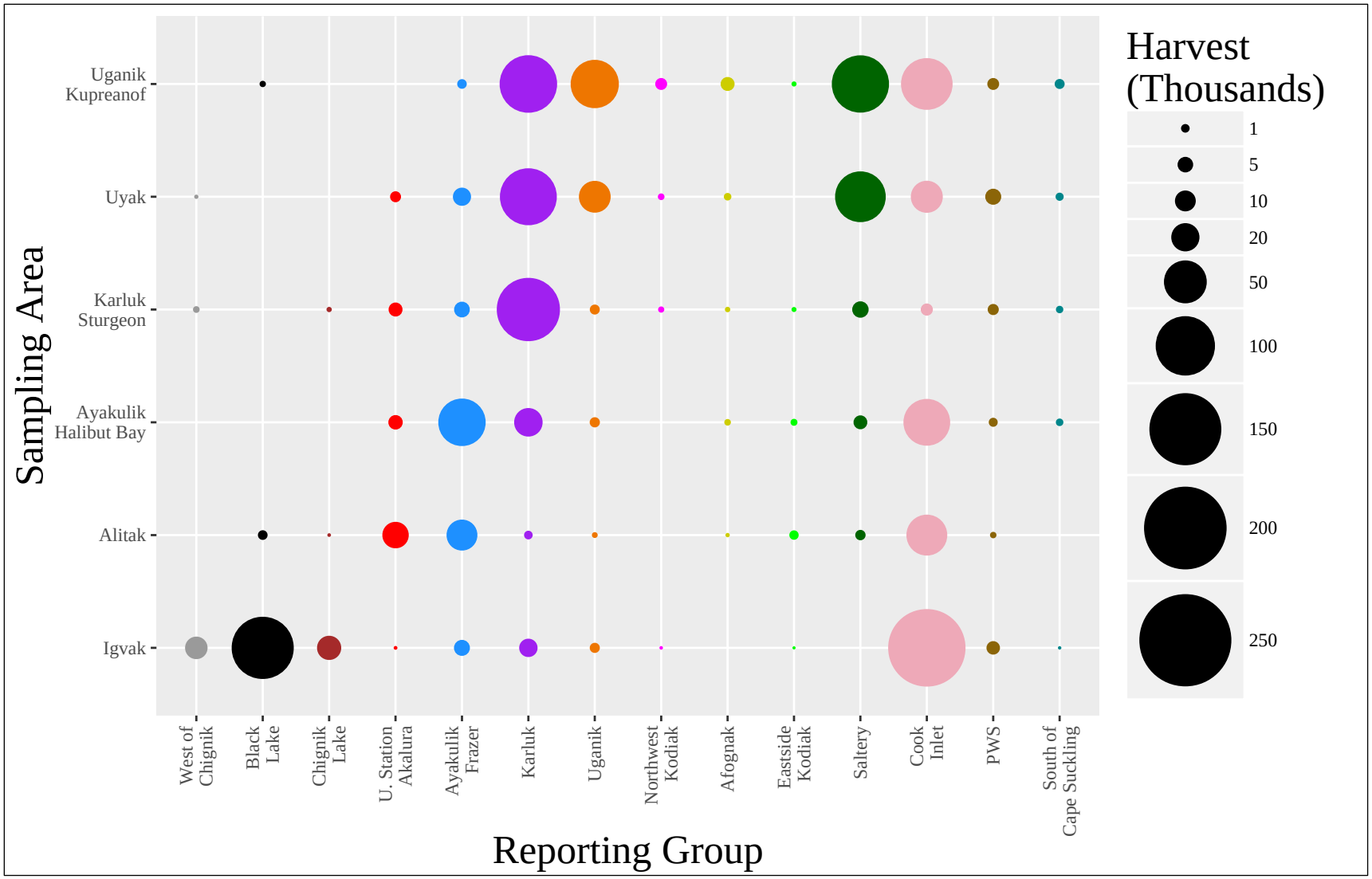

Figure 24.–Annual stock-specific harvest estimates (medians) of sockeye salmon from sampling areas in the Kodiak Management Area, 2016. Sampling areas are on the y-axis ordered north to south with Igvak at the bottom. Reporting groups are on the x-axis ordered from north to south. The size of the circle represents the stock-specific harvest for a sampling area.

Note: Colors are from the baseline report (Shedd et al. 2016a).

APPENDIX A: HISTORY OF PREVIOUS SOCKEYE SALMON TAGGING PERTINENT TO KMA

Appendix A1.–History of previous sockeye salmon tagging pertinent to KMA.

Multitudes of tagging studies of sockeye salmon have taken place in Kodiak area waters. The information gathered as part of these projects was crucial to understanding migration patterns that led to creating and refining the management plans and in a broad sense the impact of these projects can still be seen in the modern management strategies. Below is a summary of previous tagging studies that are pertinent to this study.

In 1928, a total of 700 sockeye salmon were tagged between August 19 and 20 in outer Uganik Bay (Rich and Morton 1930). Tag returns indicated the catch was predominantly bound for Karluk River. Of the 317 total tag returns, only 3 were recaptured in Alitak Bay and only 2 from Cook Inlet.

In 1938, 700 sockeye salmon were tagged at Bun Point trap on June 28 and 458 tagged on July 29 at Miller Island trap, both in Moser Bay in the Alitak district (Bower 1941). While the results were variable, the investigation indicated that sockeye salmon arrived at the weirs (Upper Station and Akalura) between 1 and 2 weeks after tagging.

In 1948, a total of 3,295 sockeye salmon were tagged (mainly from fish traps) in Northwest Kodiak and Alitak and in 1949 a total of 7,277 sockeye salmon were tagged in Northwest Kodiak (Bevan 1959). Recoveries were primarily made in the district of tagging. Less than a total of 2% of the recoveries were made outside those areas (Cook Inlet, Chignik, Alaska Peninsula, and Bristol Bay). Bevan (1959) concluded that the sockeye salmon population around Kodiak Island was a distinct unit and separate from Cook Inlet, Alaska Peninsula, and Chignik populations.

In 1959, a tagging experiment in Seldovia Bay, Cook Inlet demonstrated 7.5% of the sockeye were later recovered in the Kodiak Archipelago (Tyler and Noerenberg 1961).[1]

Between 1961 and 1978, ADF&G tagged 6,174 sockeye salmon throughout Kodiak Island at 42 different locations between the Northwest Kodiak District and Alitak.[2] Overall, the results were similar to those reported by Bevan (1959) and Rich and Morton (1930); sockeye salmon tagged in the Northwest Kodiak area tend to originate from that general area and primarily Karluk River. Tagging studies in the Northwest area after 1970 indicated a greater occurrence of Ayakulik and Olga Bay stocks (Nicholson 1978). Sockeye salmon tagged in the Southwest Kodiak area were primarily Ayakulik and Olga Bay stocks with a small occurrence of Chignik stocks. Sockeye salmon tagged in the Northeast Kodiak area demonstrated a highly mixed composition of stocks from Kodiak, Cook Inlet, and Chignik though the number tagged recoveries were small.

Between 1968 and 1969, ADF&G conducted a tagging study at Cape Igvak (ADF&G 1970). In 1968, ADF&G tagged 325 sockeye salmon on June 22. Only 5 recoveries were documented (4 in Chignik and 1 in Cook Inlet). In 1969 ADF&G tagged 791 sockeye salmon in the Cape Igvak area between June 14 and July 6. Tag recoveries (n = 161) were primarily made in the Chignik Management Area (83.9%), KMA (9.3%), Cook Inlet (4.3%), and West of Chignik (2.5%).

[1] Tyler, R. W., and W. H. Noerenberg. Unpublished. Salmon tagging in Cook Inlet. Available from the Fisheries Research Institute, University of Washingon, Seattle.

[2] Nicholson, L. D. Unpublished. A summary of all known red salmon (*Oncorhynchus nerka*) tagging conducted on Kodiak Island, Alaska. Available from Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak.

In June of 1981, a total of 3,109 sockeye salmon were tagged in 20 locations along the North, West, and South areas of Kodiak Island. Tag recovery rate was high (43.9%). The results are summarized in Tyler et al. (1986); major findings include:

1. In June, sockeye salmon tagged in the Northwest Districts showed strong southward movement toward Karluk, Ayakulik, and Olga Bay systems. Most of the recoveries were from Karluk, but the occurrence of Ayakulik and Olga Bay sockeye salmon in the Northwest Kodiak District was greater than originally reported in 1950 likely due to changes in relative run strength (Karluk, Ayakulik, Olga Bay). From sockeye salmon tagged in the Northwest Kodiak District, approximately 15.8% of the recoveries were made in Ayakulik and 26.5% of the recoveries were made in Alitak Bay.
2. In June, sockeye salmon tagged in the Southwest Kodiak District (south of Karluk) showed strong southward movement also toward Ayakulik and Olga Bay. Karluk sockeye salmon did not appear in appreciable numbers south of Halibut Bay. Olga Bay stocks were abundant and at time predominant in Southwest Kodiak, but less in the Ayakulik sections.
3. In June, sockeye salmon tagged in the Alitak District were predominantly recovered in Olga Bay (96%). Olga Bay stocks primarily migrated down the west coast of Kodiak Island.
4. In June, sockeye salmon stocks from Cook Inlet, Chignik, and Alaska Peninsula were mixed with Kodiak area fish primarily in the North and secondarily in Alitak, in small percentages. Percentages of *nonlocal* sockeye salmon, particularly Cook Inlet, were substantial at some the northern locations where tagging occurred (Marmot Bay and Raspberry Island).

APPENDIX B: SAMPLE SELECTION SUMMARY

Appendix B1.–Daily commercial sockeye salmon harvest, number of genetic samples collected (Samp.), and number of genetic samples analyzed (Anlyz.) for temporal stratum 1 of Uganik-Kupreanof (253), 2014–2016.

		2014			2015			2016		
Temporal			Genetic			Genetic			Genetic	
Stratum	Date(s)	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.
1	1-Jun	0			0			0		
	2-Jun	0			0			3,015	200	40
	3-Jun	0			1,153	200	56	2,569		
	4-Jun	0			1,700			903		
	5-Jun	3,045			1,824			0		
	6-Jun	6,307	200	74	0			0		
	7-Jun	1,703			0			0		
	8-Jun	4,440			0			4,215	200	53
	9-Jun	4,375			1,436	400	55	4,310		
	10-Jun	10,812	200	102	1,752			269		
	11-Jun	6,101			1,427			0		
	12-Jun	5,516			0			0		
	13-Jun	1,801			0			0		
	14-Jun	4,449	100	56	1,759	200	122	6,063		
	15-Jun	4,312			1,488			2,496		
	16-Jun	3,435	400	63	1,454			2,807	200	108
	17-Jun	564			1,756			2,567		
	18-Jun	4,881			1,505			1,781		
	19-Jun	0			2,209			2,022		
	20-Jun	0			567			2,456		
	21-Jun	3,232			1,190			5,471		
	22-Jun	1,646	300	39	631			3,900		
	23-Jun	3,323			746			6,014	210	135
	24-Jun	1,217			285			4,597		
	25-Jun	4,046	200	46	245	200	70	3,013		
	26-Jun	1,219			909			2,374	100	44
	27-Jun	3,070			640			1,929		
	28-Jun	-			568			-		
	29-Jun	-			818	200	77	-		
	30-Jun	-			694			-		
	1-Jul	-			1,972			-		
	2-Jul	-			1,148			-		
	3-Jul	-			1,731			-		
Period Subtotal		79,494	1,400	380	31,607	1,200	380	62,771	910	380

Note: The number of samples collected is as reported in the field and may be less than the number of samples genotyped.

Appendix B2.–Daily commercial sockeye salmon harvest, number of genetic samples collected (Samp.), and number of genetic samples analyzed (Anlyz.) for temporal stratum 2 of Uganik-Kupreanof (253), 2014–2016.

		2014			2015			2016		
Temporal			Genetic			Genetic			Genetic	
Stratum	Date(s)	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.
2	28-Jun	1,198			-			2,045	200	6
	29-Jun	5,278			-			0		
	30-Jun	1,461			-			0		
	1-Jul	3,298			-			0		
	2-Jul	899	400	81	-			0		
	3-Jul	6,748			-			8,777		
	4-Jul	1,928			874			3,837		
	5-Jul	6,605			687			3,751		
	6-Jul	3,230			2,114			4,884	200	125
	7-Jul	3,090			4,841			4,405		
	8-Jul	7,112			3,397	200	21	18,943		
	9-Jul	3,773			0			23,151		
	10-Jul	5,411	400	67	0			13,568	100	97
	11-Jul	0			0			0		
	12-Jul	0			0			0		
	13-Jul	6,350			11,532	200	76	0		
	14-Jul	8,269			11,715			5,419		
	15-Jul	6,506			4,241			7,885	200	58
	16-Jul	6,818	400	104	3,825			4,048		
	17-Jul	7,499			11,901			3,472		
	18-Jul	0			0			0		
	19-Jul	0			0			0		
	20-Jul	13,180			25,569	200	93	0		
	21-Jul	7,999			21,112			0		
	22-Jul	7,245			19,598			12,775	200	94
	23-Jul	6,201	200	128	13,625			6,337		
	24-Jul	8,738			12,938			9,842		
	25-Jul	0			23,332			5,142		
	26-Jul	-			14,370	200	190	-		
	27-Jul	-			11,951			-		
	28-Jul	-			13,029			-		
	29-Jul	-			4,994			-		
	30-Jul	-			0			-		
	31-Jul	-			0			-		
	1-Aug	-			0			-		
Period Subtotal		128,836	1,400	380	215,645	800	380	138,281	900	380

Note: The number of samples collected is as reported in the field and may be less than the number of samples genotyped.

Appendix B3.–Daily commercial sockeye salmon harvest, number of genetic samples collected (Samp.), and number of genetic samples analyzed (Anlyz.) for temporal stratum 3 of Uganik-Kupreanof (253), 2014–2016.

		2014			2015			2016		
Temporal			Genetic			Genetic			Genetic	
Stratum	Date(s)	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.
3	26-Jul	0			-			0		
	27-Jul	7,055			-			0		
	28-Jul	3,921			-			0		
	29-Jul	3,998	400	213	-			0		
	30-Jul	2,678			-			18,686		
	31-Jul	3,415			-			11,502		
	1-Aug	0			-			11,180	300	112
	2-Aug	0			8,256	200	79	0		
	3-Aug	2,120			9,327			0		
	4-Aug	2,625			4,234			1,688		
	5-Aug	1,993			4,112			0		
	6-Aug	1,851	220	97	4,175			18,507	200	98
	7-Aug	1,008			7,792			8,980		
	8-Aug	0			10,179			6,389		
	9-Aug	0			11,249			0		
	10-Aug	2,161			7,326	200	149	490		
	11-Aug	1,804			4,997			0		
	12-Aug	2,201			7,670			0		
	13-Aug	703	200	70	6,781			0		
	14-Aug	0			6,804			0		
	15-Aug	0			5,362			0		
	16-Aug	0			5,212	200	93	8,357	200	44
	17-Aug	0			3,274			2,883		
	18-Aug	0			3,919			4,970		
	19-Aug	0			5,896			18,443		
	20-Aug	0			4,601			8,897	200	101
	21-Aug	0			4,439			4,038		
	22-Aug	0			2,044			5,512		
	23-Aug	0			1,630			1,314		
	24-Aug	0			4,020	80	59	1,458		
	25-Aug	29,071			1,705			616	200	25
	26-Aug	22,433			2,223			1,030		
	27-Aug	49,825	400	285	1,411			1,653		
	28-Aug	6,971			1,924			1,953		
	29-Aug	18,010			3,005			1,057		
Period Subtotal		163,843	1,220	665	143,567	680	380	139,612	1,100	380

Note: The number of samples collected is as reported in the field and may be less than the number of samples genotyped.

Appendix B4.–Daily commercial sockeye salmon harvest, number of genetic samples collected (Samp.), and number of genetic samples analyzed (Anlyz.) for temporal stratum 1 of Uyak (254), 2014–2016.

Temporal		2014			2015			2016		
			Genetic			Genetic			Genetic	
Stratum	Date(s)	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.
1	1-Jun	0			0			0		
	2-Jun	0			0			1,510		
	3-Jun	0			1,924	217	37	1,071	200	31
	4-Jun	0			1,908			499		
	5-Jun	3,549			1,017			0		
	6-Jun	2,623	200	59	0			0		
	7-Jun	4,560			0			0		
	8-Jun	5,284			0			2,055	200	63
	9-Jun	9,089			1,682	200	13	1,847		
	10-Jun	7,662			5,809	200	88	2,255		
	11-Jun	9,493			5,644			0		
	12-Jun	4,944	400	175	0			0		
	13-Jun	8,785			0			0		
	14-Jun	7,039			3,464			5,124	200	150
	15-Jun	9,255			2,322			1,439		
	16-Jun	3,664			3,483			3,513		
	17-Jun	1,472	400	76	1,859	200	110	3,600		
	18-Jun	6,098			1,365			1,071		
	19-Jun	0			1,504			1,234		
	20-Jun	0			283			1,507		
	21-Jun	4,188			408			2,064		
	22-Jun	2,624	400	70	919			648		
	23-Jun	1,747			2,538			3,272	200	109
	24-Jun	2,108			790	200	46	1,927		
	25-Jun	2,152			597			1,229		
	26-Jun	2,709			742			693		
	27-Jun	3,301			2,523			680	100	27
	28-Jun	-			1,324			-		
	29-Jun	-			297	205	86	-		
	30-Jun	-			782			-		
	1-Jul	-			1,584			-		
	2-Jul	-			2,561			-		
	3-Jul	-			2,186			-		
Period Subtotal		102,346	1,400	380	49,515	1,222	380	37,238	900	380

Note: The number of samples collected is as reported in the field and may be less than the number of samples genotyped.

Appendix B5.–Daily commercial sockeye salmon harvest, number of genetic samples collected (Samp.), and number of genetic samples analyzed (Anlyz.) for temporal stratum 2 of Uyak (254), 2014–2016.

		2014			2015			2016		
Temporal			Genetic			Genetic			Genetic	
Stratum	Date(s)	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.
2	28-Jun	2,870			-			890	200	5
	29-Jun	5,157	100	24	-			0		
	30-Jun	8,873	200	27	-			0		
	1-Jul	3,788	100	21	-			0		
	2-Jul	3,273			-			0		
	3-Jul	4,575			-			4,352		
	4-Jul	6,040			685			6,021	200	85
	5-Jul	3,491	100	42	717			5,252		
	6-Jul	1,703	100	13	3,584			2,576		
	7-Jul	2,734			2,261	200	23	3,464	200	42
	8-Jul	3,242	200	63	1,858			1,712		
	9-Jul	11,626			1,527			5,738		
	10-Jul	5,917			0			8,018	100	75
	11-Jul	0			0			0		
	12-Jul	0			0			0		
	13-Jul	4,048	100	12	17,133			0		
	14-Jul	5,317	100	16	7,876	200	108	5,418	200	99
	15-Jul	5,723	200	60	3,508			1,915		
	16-Jul	5,972			2,310			7,475		
	17-Jul	8,408			18,116			3,293		
	18-Jul	0			0			0		
	19-Jul	0			0			0		
	20-Jul	4,098	100	12	11,248			0		
	21-Jul	9,143	100	90	19,036	200	136	0		
	22-Jul	9,743			19,819			3,416		
	23-Jul	7,034			8,406			2,747	200	74
	24-Jul	4,065			3,966			3,749		
	25-Jul	0			2,552			3,767		
	26-Jul	-			12,896			-		
	27-Jul	-			24,219			-		
	28-Jul	-			10,036	200	113	-		
	29-Jul	-			2,256			-		
	30-Jul	-			0			-		
	31-Jul	-			0			-		
	1-Aug	-			0			-		
Period Subtotal		126,840	1,400	380	174,009	800	380	69,803	1,100	380

Note: The number of samples collected is as reported in the field and may be less than the number of samples genotyped.

Appendix B6.–Daily commercial sockeye salmon harvest, number of genetic samples collected (Samp.), and number of genetic samples analyzed (Anlyz.) for temporal stratum 3 of Uyak (254), 2014–2016.

		2014			2015			2016		
Temporal			Genetic			Genetic			Genetic	
Stratum	Date(s)	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.
3	26-Jul	0			-			0		
	27-Jul	9,645	100	43	-			0		
	28-Jul	3,793	200	17	-			0		
	29-Jul	5,250	100	100	-			0		
	30-Jul	4,006			-			5,554	200	93
	31-Jul	13,229			-			12,363		
	1-Aug	0			-			13,126		
	2-Aug	168			3,092			0		
	3-Aug	4,315	200	53	6,588			0		
	4-Aug	7,473			3,363	200	83	103		
	5-Aug	8,041	200	72	3,024			0		
	6-Aug	5,729			3,798			15,124		
	7-Aug	2,572			7,562			7,815	200	86
	8-Aug	0			7,377			5,750		
	9-Aug	0			9,413			0		
	10-Aug	4,946			9,792	200	123	0		
	11-Aug	4,682	200	95	3,315			0		
	12-Aug	4,602			2,501			0		
	13-Aug	7,123			4,516			0		
	14-Aug	0			4,126			0		
	15-Aug	0			4,902			0		
	16-Aug	0			4,442			4,252	200	52
	17-Aug	0			3,970			4,733		
	18-Aug	0			5,619	200	96	6,297		
	19-Aug	0			7,577			2,059		
	20-Aug	0			3,703			3,784		
	21-Aug	0			1,679			21,355		
	22-Aug	0			2,893			5,779	200	108
	23-Aug	0			3,465			2,376		
	24-Aug	0			3,438			2,636		
	25-Aug	11,816			2,666	97	78	3,109		
	26-Aug	22,908	400	285	2,284			2,301		
	27-Aug	10,054			2,691			1,871	200	41
	28-Aug	15,565			5,399			4,018		
	29-Aug	9,741			2,931			2,432		
Period Subtotal		155,658	1,400	665	126,126	697	380	126,837	1,000	380

Note: The number of samples collected is as reported in the field and may be less than the number of samples genotyped.

Appendix B7.–Daily commercial sockeye salmon harvest, number of genetic samples collected (Samp.), and number of genetic samples analyzed (Anlyz.) for temporal stratum 1 of Karluk-Sturgeon (255-10, 20; 256-40), 2014–2016.

		2014			2015			2016		
Temporal			Genetic			Genetic			Genetic	
Stratum	Date(s)	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.
1	1-Jun	0			0			0		
	2-Jun	0			0			0		
	3-Jun	0			0			0		
	4-Jun	3,909			0			0		
	5-Jun	2,713			0			350		
	6-Jun	1,354			0			0		
	7-Jun	3,913			0			0		
	8-Jun	1,263			0			0		
	9-Jun	4,810			0			0		
	10-Jun	884			0			0		
	11-Jun	5,779			0			0		
	12-Jun	2,584			0			0		
	13-Jun	2,368			0			0		
	14-Jun	989			0			3,490		
	15-Jun	2,778			1,646	205	0	0	400	230
	16-Jun	252			3,258	205	105	2,167		
	17-Jun	441			4,813			2,415		
	18-Jun	2,863			6,978			160		
	19-Jun	0			1,111			1,314		
	20-Jun	0			0			166		
	21-Jun	5,243			1,289	205	113	1,029	200	150
	22-Jun	2,188			1,115			1,044		
	23-Jun	3,807	292	285	2,505	202	162	1,325		
	24-Jun	0			1,512			396		
	25-Jun	3,214	400	0	0			0		
	26-Jun	2,330	400	95	642			0		
	27-Jun	2,336			1,168			0		
	28-Jun	-			0			-		
	29-Jun	-			1,451			-		
	30-Jun	-			1,845			-		
	1-Jul	-			1,754			-		
	2-Jul	-			2,863			-		
	3-Jul	-			1,233			-		
Period Subtotal		56,018	1,092	380	35,183	817	380	13,856	600	380

Note: The number of samples collected is as reported in the field and may be less than the number of samples genotyped.

Appendix B8.–Daily commercial sockeye salmon harvest, number of genetic samples collected (Samp.), and number of genetic samples analyzed (Anlyz.) for temporal stratum 2 of Karluk-Sturgeon (255-10, 20; 256-40), 2014–2016.

		2014			2015			2016		
Temporal			Genetic			Genetic			Genetic	
Stratum	Date(s)	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.
2	28-Jun	0			-			310	100	12
	29-Jun	4,240			-			0		
	30-Jun	581			-			0		
	1-Jul	4,163	200	98	-			0		
	2-Jul	1,223			-			0		
	3-Jul	6,095			-			2,651	400	120
	4-Jul	1,359			0			728		
	5-Jul	2,105			0			4,184	400	248
	6-Jul	3,049			3,056			1,842		
	7-Jul	940	360	201	2,825	109	109	392		
	8-Jul	5,657			3,179			0		
	9-Jul	16,801			0			593		
	10-Jul	7,548			0			0		
	11-Jul	0			0			0		
	12-Jul	0			0			0		
	13-Jul	803			1,816			0		
	14-Jul	271	200	21	1,018			0		
	15-Jul	1,194			0			0		
	16-Jul	364			0			0		
	17-Jul	1,214			1,870			0		
	18-Jul	0			0			0		
	19-Jul	0			0			0		
	20-Jul	669			0			0		
	21-Jul	1,871	200	60	499			0		
	22-Jul	2,920			0			0		
	23-Jul	967			0			0		
	24-Jul	4,404			2,116			0		
	25-Jul	0			1,011			0		
	26-Jul	-			4,074			-		
	27-Jul	-			1,209			-		
	28-Jul	-			382			-		
	29-Jul	-			1,491			-		
	30-Jul	-			1,203			-		
	31-Jul	-			1,536			-		
	1-Aug	-			2,630	400	271	-		
Period Subtotal		68,438	960	380	29,915	509	380	10,700	900	380

Note: The number of samples collected is as reported in the field and may be less than the number of samples genotyped.

Appendix B9.–Daily commercial sockeye salmon harvest, number of genetic samples collected (Samp.), and number of genetic samples analyzed (Anlyz.) for temporal stratum 3 of Karluk-Sturgeon (255-10, 20; 256-40), 2014–2016.

		2014			2015			2016		
Temporal			Genetic			Genetic			Genetic	
Stratum	Date(s)	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.
3	26-Jul	0			-			0		
	27-Jul	34			-			0		
	28-Jul	2,306	400	43	-			0		
	29-Jul	3,660			-			0		
	30-Jul	903			-			0		
	31-Jul	1,009			-			0		
	1-Aug	0			-			0		
	2-Aug	0			1,285			0		
	3-Aug	3,196			5,036	200	67	0		
	4-Aug	6,132	400	51	0			0		
	5-Aug	11,023	400	139	3,151			0		
	6-Aug	3,995			1,688			0		
	7-Aug	10,313			1,358			0		
	8-Aug	0			0			0		
	9-Aug	0			2,583	200	32	0		
	10-Aug	7,652	200	42	282			0		
	11-Aug	3,119	200	105	999			0		
	12-Aug	10,069			0			0		
	13-Aug	5,831			178			0		
	14-Aug	0			4,500			0		
	15-Aug	0			7,734			0		
	16-Aug	0			5,315			0		
	17-Aug	0			5,865	200	149	0		
	18-Aug	0			1,460			6,674	400	77
	19-Aug	0			5,004	200	132	13,850		
	20-Aug	0			7,707			6,740		
	21-Aug	0			6,472			18,490	200	168
	22-Aug	0			1,062			21,073		
	23-Aug	0			0			5,678		
	24-Aug	0			1,719			8,994	200	135
	25-Aug	13,362			0			4,868		
	26-Aug	14,357	400	285	0			5,492		
	27-Aug	12,121			0			4,889		
	28-Aug	6,572			0			13,511		
	29-Aug	9,225			134			3,186		
Period Subtotal		124,879	2,000	665	63,532	800	380	113,445	800	380

Note: The number of samples collected is as reported in the field and may be less than the number of samples genotyped.

Appendix B10.–Daily commercial sockeye salmon harvest, number of genetic samples collected (Samp.), and number of genetic samples analyzed (Anlyz.) for temporal stratum 1 of Ayakulik-Halibut Bay (256-10–256-30), 2014–2016.

		2014			2015			2016		
Temporal			Genetic			Genetic			Genetic	
Stratum	Date(s)	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.
1	1-Jun	0			0			0		
	2-Jun	0			0			0		
	3-Jun	0			0			0		
	4-Jun	369			0			0		
	5-Jun	24,709	200	0	0			0		
	6-Jun	4,763			0			0		
	7-Jun	24,387	100	100	0			0		
	8-Jun	7,796			0			0		
	9-Jun	23,826	203	0	0			0		
	10-Jun	3,574	100	45	0			0		
	11-Jun	12,496	200	101	0			0		
	12-Jun	3,535			0			0		
	13-Jun	7,585	70	51	0			0		
	14-Jun	3,872			0			0		
	15-Jun	10,597			15,726	200	46	0		
	16-Jun	0			8,977			0		
	17-Jun	0			32,303	200	98	0		
	18-Jun	0			21,209			0		
	19-Jun	0			25,963	200	102	0		
	20-Jun	0			28,168			3,937	223[a]	223
	21-Jun	0			19,385	205	71	0		
	22-Jun	548			18,298			0		
	23-Jun	20,601	403	83	0			0		
	24-Jun	5,302			0			0		
	25-Jun	9,024			0			0		
	26-Jun	0			0			0		
	27-Jun	0			15,695			0		
	28-Jun	-			690	200	31	-		
	29-Jun	-			9,900	200	32	-		
	30-Jun	-			3,923			-		
	1-Jul	-			2,435			-		
	2-Jul	-			498			-		
	3-Jul	-			0			-		
Period Subtotal		162,984	1,276	380	203,170	1,205	380	3,937	0	223

Note: The number of samples collected is as reported in the field and may be less than the number of samples genotyped.

[a] Samples are from a department test fishery, as there were no commercial openings during this strata in 2016.

Appendix B11.–Daily commercial sockeye salmon harvest, number of genetic samples collected (Samp.), and number of genetic samples analyzed (Anlyz.) for temporal stratum 2 of Ayakulik-Halibut Bay (256-10–256-30), 2014–2016.

		2014			2015			2016		
Temporal			Genetic			Genetic			Genetic	
Stratum	Date(s)	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.
2	28-Jun	0			-			0		
	29-Jun	0			-			0		
	30-Jun	0			-			0		
	1-Jul	0			-			0		
	2-Jul	0			-			0		
	3-Jul	0			-			0		
	4-Jul	0			0			0		
	5-Jul	0			0			0		
	6-Jul	0			19,260	200	69	0		
	7-Jul	0			10,884			0		
	8-Jul	0			25,261			0		
	9-Jul	0			14,491			0		
	10-Jul	0			0			0		
	11-Jul	0			0			0		
	12-Jul	0			0	200	194	0		
	13-Jul	47,716			88,893			0		
	14-Jul	30,502			19,073			31,733	800	267
	15-Jul	16,853	100	100	74,041			16,886		
	16-Jul	7,553	100	100	15,169			25,760		
	17-Jul	14,624			18,504			9,852		
	18-Jul	0			0			0		
	19-Jul	0			0			0		
	20-Jul	8,956			7,853	200	52	0		
	21-Jul	6,761			12,588			0		
	22-Jul	21,091	200	90	10,949			9,125		
	23-Jul	14,000	200	90	0			1,533		
	24-Jul	7,149			1,605			19,512		
	25-Jul	0			0			5,667	200	113
	26-Jul	-			0			-		
	27-Jul	-			0			-		
	28-Jul	-			0			-		
	29-Jul	-			0	200	65	-		
	30-Jul	-			31,681			-		
	31-Jul	-			14,754			-		
	1-Aug	-			19,384			-		
Period Subtotal		175,205	600	380	384,390	800	380	120,068	1,000	380

Note: The number of samples collected is as reported in the field and may be less than the number of samples genotyped.

Appendix B12.–Daily commercial sockeye salmon harvest, number of genetic samples collected (Samp.), and number of genetic samples analyzed (Anlyz.) for temporal stratum 3 of Ayakulik-Halibut Bay (256-10–256-30), 2014–2016.

		2014			2015			2016		
Temporal			Genetic			Genetic			Genetic	
Stratum	Date(s)	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.
3	26-Jul	0			-			0		
	27-Jul	4,708	450	159	-			2,016		
	28-Jul	5,230			-			0		
	29-Jul	2,223			-			0		
	30-Jul	8,215			-			14,196	400	249
	31-Jul	3,514			-			4,252		
	1-Aug	0			-			1,642		
	2-Aug	0			0			0		
	3-Aug	0			0			0		
	4-Aug	0			0			0		
	5-Aug	0			0			0		
	6-Aug	0			753			0		
	7-Aug	0			0			0		
	8-Aug	0			692	200	180	0		
	9-Aug	0			931			0		
	10-Aug	2,198			0			0		
	11-Aug	3,232			0			0		
	12-Aug	4,841	200	100	0			0		
	13-Aug	4,727			716			0		
	14-Aug	0			2,125			0		
	15-Aug	0			1,399			0		
	16-Aug	0			2,981			0		
	17-Aug	0			1,778	200	200	0		
	18-Aug	0			1,621			0		
	19-Aug	0			951			0		
	20-Aug	0			2,702			0		
	21-Aug	0			497			0		
	22-Aug	0			245			0		
	23-Aug	0			512			3,329		
	24-Aug	0			1,055			1,042		
	25-Aug	8,723	400	121	884			1,995		
	26-Aug	4,681			777			2,711		
	27-Aug	2,004			0			648	400	131
	28-Aug	2,770			0			1,890		
	29-Aug	0			0			0		
Period Subtotal		57,066	1,050	380	20,619	400	380	33,721	800	380

Note: The number of samples collected is as reported in the field and may be less than the number of samples genotyped.

Appendix B13.–Daily commercial sockeye salmon harvest, number of genetic samples collected (Samp.), and number of genetic samples analyzed (Anlyz.) for temporal stratum 1 of Alitak (257-10, 20, 50, 60, 70), 2014–2016.

Temporal		2014			2015			2016		
			Genetic			Genetic			Genetic	
Stratum	Date(s)	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.
1	1-Jun	0			0			0		
	2-Jun	0			0			0		
	3-Jun	0			0			0		
	4-Jun	0			0			0		
	5-Jun	0			0			0		
	6-Jun	0			0			0		
	7-Jun	0			0			0		
	8-Jun	0			0			0		
	9-Jun	0			0			0		
	10-Jun	0			0			0		
	11-Jun	0			0			0		
	12-Jun	0			0			0		
	13-Jun	0			0			0		
	14-Jun	0			0			0		
	15-Jun	0			0			0		
	16-Jun	0			0			0		
	17-Jun	0			0			0		
	18-Jun	0			0			0		
	19-Jun	0			0			0		
	20-Jun	0			0			0		
	21-Jun	0			4,161			0		
	22-Jun	0			769			0		
	23-Jun	0			0			0		
	24-Jun	0			0			0		
	25-Jun	0			0			7,140	400	380
	26-Jun	0			0			654		
	27-Jun	0			8,972	400	200	3,324		
	28-Jun	-			1,230			-		
	29-Jun	-			6,803	200	180	-		
	30-Jun	-			5,667			-		
	1-Jul	-			1,121			-		
	2-Jul	-			0			-		
	3-Jul	-			0			-		
Period Subtotal		0	0	0	28,723	600	380	11,118	400	380

Note: The number of samples collected is as reported in the field and may be less than the number of samples genotyped.

Appendix B14.–Daily commercial sockeye salmon harvest, number of genetic samples collected (Samp.), and number of genetic samples analyzed (Anlyz.) for temporal stratum 2 of Alitak (257-10, 20, 50, 60, 70), 2014–2016.

		2014			2015			2016		
Temporal			Genetic			Genetic			Genetic	
Stratum	Date(s)	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.
2	28-Jun	0			-			0		
	29-Jun	0			-			0		
	30-Jun	0			-			0		
	1-Jul	0			-			0		
	2-Jul	13,698	400	86	-			0		
	3-Jul	7,061			-			0		
	4-Jul	5,606			0			0		
	5-Jul	0			0			0		
	6-Jul	0			10,444	200	68	12,481	400	126
	7-Jul	0			3,567			7,853		
	8-Jul	19,440	200	139	6,632			0		
	9-Jul	15,828			6,377			0		
	10-Jul	7,201			0			0		
	11-Jul	0			0			0		
	12-Jul	0			0			0		
	13-Jul	15,500	359	67	24,409	200	180	3,403		
	14-Jul	5,237	41	41	20,566			12,596	285	225
	15-Jul	7,555			8,814			4,311		
	16-Jul	1,637			10,056			7,721		
	17-Jul	3,033			22,086			8,860		
	18-Jul	0			0			0		
	19-Jul	0			0			0		
	20-Jul	4,646	200	47	7,441			0		
	21-Jul	1,598			985	200	64	0		
	22-Jul	2,529			3,716			1,133		
	23-Jul	2,259			2,112			930	200	29
	24-Jul	2,302			8,481			2,642		
	25-Jul	868			3,037			0		
	26-Jul	-			1,133			-		
	27-Jul	-			4,413			-		
	28-Jul	-			1,930	200	68	-		
	29-Jul	-			7,120			-		
	30-Jul	-			3,813			-		
	31-Jul	-			5,063			-		
	1-Aug	-			3,699			-		
Period Subtotal		115,998	1,200	380	165,894	800	380	61,930	885	380

Note: The number of samples collected is as reported in the field and may be less than the number of samples genotyped.

Appendix B15.–Daily commercial sockeye salmon harvest, number of genetic samples collected (Samp.), and number of genetic samples analyzed (Anlyz.) for temporal stratum 3 of Alitak (257-10, 20, 50, 60, 70), 2014–2016.

		2014			2015			2016		
Temporal			Genetic			Genetic			Genetic	
Stratum	Date(s)	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.
3	26-Jul	68			-			0		
	27-Jul	480			-			0		
	28-Jul	286			-			0		
	29-Jul	509			-			0		
	30-Jul	193	389	147	-			421		
	31-Jul	368	120	0	-			1,181	400	146
	1-Aug	30			-			1,823		
	2-Aug	0			1,213			3,598		
	3-Aug	5			2,383	200	118	974		
	4-Aug	0			2,210			0		
	5-Aug	0			1,242			0		
	6-Aug	5			2,636			5,499	400	133
	7-Aug	0			1,854			2,197		
	8-Aug	0			975			0		
	9-Aug	0			1,414			0		
	10-Aug	0			1,641	200	101	0		
	11-Aug	0			652			0		
	12-Aug	0			977			0		
	13-Aug	163			880			0		
	14-Aug	0			988			0		
	15-Aug	0			988			0		
	16-Aug	0			1,785			370	309	7
	17-Aug	0			1,155	200	88	0		
	18-Aug	0			1,225			0		
	19-Aug	0			448			0		
	20-Aug	0			708			0		
	21-Aug	0			690			558		
	22-Aug	0			193			2,499	200	94
	23-Aug	0			895	200	73	0		
	24-Aug	0			804			0		
	25-Aug	2,470			646			2,123		
	26-Aug	0			256			0		
	27-Aug	340	233	233	527			0		
	28-Aug	0			1,179			0		
	29-Aug	520			730			0		
Period Subtotal		5,437	742	380	31,294	800	380	21,243	1,309	380

Note: The number of samples collected is as reported in the field and may be less than the number of samples genotyped.

Appendix B16.–Daily commercial sockeye salmon harvest, number of genetic samples collected (Samp.), and number of genetic samples analyzed (Anlyz.) for temporal stratum 1 of Igvak (262-75, 80, 90, 95), 2014–2016.

Temporal		2014			2015			2016		
			Genetic			Genetic			Genetic	
Stratum	Date(s)	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.
1	1-Jun	0			0			0		
	2-Jun	0			0			0		
	3-Jun	0			0			0		
	4-Jun	0			0			0		
	5-Jun	0			0			0		
	6-Jun	0			0			0		
	7-Jun	0			0			0		
	8-Jun	0			0			22,739	800	76
	9-Jun	0			0			7,982		
	10-Jun	0			0			0		
	11-Jun	0			0			0		
	12-Jun	0			0			0		
	13-Jun	0			0			0		
	14-Jun	0			0			0		
	15-Jun	0			0			0		
	16-Jun	0			0			0		
	17-Jun	0			0			0		
	18-Jun	0			0			28,246	400	119
	19-Jun	0			0			9,537		
	20-Jun	0			0			21,870	200	185
	21-Jun	0			0			10,293		
	22-Jun	0			0			19,527		
	23-Jun	0			0			9,882		
	24-Jun	0			0			16,697		
	25-Jun	0			0			7,545		
	26-Jun	0			0			0		
	27-Jun	0			0			0		
	28-Jun	-			0			-		
	29-Jun	-			0			-		
	30-Jun	-			0			-		
	1-Jul	-			0			-		
	2-Jul	-			0			-		
	3-Jul	-			0			-		
Period Subtotal		0	0	0	0	0	0	154,318	1,400	380

Note: The number of samples collected is as reported in the field and may be less than the number of samples genotyped.

Appendix B17.–Daily commercial sockeye salmon harvest, number of genetic samples collected (Samp.), and number of genetic samples analyzed (Anlyz.) for temporal stratum 2 of Igvak (262-75, 80, 90, 95), 2014–2016.

Temporal		2014			2015			2016		
			Genetic			Genetic			Genetic	
Stratum	Date(s)	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.	Harvest	Samp.	Anlyz.
2	28-Jun	0			-			0		
	29-Jun	0			-			0		
	30-Jun	0			-			0		
	1-Jul	0			-			0		
	2-Jul	0			-			0		
	3-Jul	0			-			0		
	4-Jul	0			0			0		
	5-Jul	0			0			0		
	6-Jul	0			0			0		
	7-Jul	0			0			0		
	8-Jul	0			0			0		
	9-Jul	0			0			0		
	10-Jul	0			0			0		
	11-Jul	0			0			0		
	12-Jul	0			0			9,627		
	13-Jul	0			0			4,433	700	32
	14-Jul	0			0			0		
	15-Jul	0			0			918		
	16-Jul	0			1,083	400	380	0		
	17-Jul	0			246			1,456		
	18-Jul	0			3,275			10,184	400	25
	19-Jul	0			1,991			0		
	20-Jul	0			0			27,571	200	219
	21-Jul	0			0			67,359		
	22-Jul	0			0			55,767	100	104
	23-Jul	0			0			0		
	24-Jul	0			0			0		
	25-Jul	0			0			0		
	26-Jul	-			0			-		
	27-Jul	-			0			-		
	28-Jul	-			0			-		
	29-Jul	-			0			-		
	30-Jul	-			0			-		
	31-Jul	-			0			-		
	1-Aug	-			0			-		
Period Subtotal		0	0	0	6,595	400	380	177,315	1,400	380

Note: The number of samples collected is as reported in the field and may be less than the number of samples genotyped.

APPENDIX C: RESULTS OF STATISTICAL QUALITY CONTROL

Appendix C1.–Results of the statistical quality control by area-temporal strata for sockeye salmon catch samples analyzed to estimate the stock composition of KMA commercial harvests in 2014–2016. Area-temporal strata are identified by area stratum, year, temporal stratum, and stratum period. The number of fish genotyped, and excluded from statistical analysis because of missing loci, alternate species and duplicate fish, and the final number statistically analyzed are provided.

				Number of Fish				
					Fish Removed			
Area Stratum	Year	Temporal Stratum	Period	Genotyped	Alternate Species	Missing Loci	Duplicate	Final
Uganik	2014	1	6/1–6/27	380	0	3	1	376
Uganik	2014	2	6/28–7/25	380	0	4	0	376
Uganik	2014	3	7/26–8/24	380	0	6	0	374
Uganik	2014	4[a]	8/25–8/29	285	0	5	0	280
Uganik	2015	1	6/1–7/3	380	0	2	0	378
Uganik	2015	2	7/4–8/1	380	0	1	0	379
Uganik	2015	3	8/2–8/29	380	0	3	0	377
Uganik	2016	1	6/1–6/27	380	0	5	0	375
Uganik	2016	2	6/28–7/25	380	0	3	0	377
Uganik	2016	3	7/26–8/24	380	0	9	0	371
Uyak	2014	1	6/1–6/27	380	0	2	0	378
Uyak	2014	2	6/28–7/25	380	0	0	0	380
Uyak	2014	3	7/26–8/24	380	0	1	3	376
Uyak	2014	4[a]	8/25–8/29	285	0	4	0	281
Uyak	2015	1	6/1–7/3	380	0	1	0	379
Uyak	2015	2	7/4–8/1	380	0	3	0	377
Uyak	2015	3	8/2–8/29	380	0	7	0	373
Uyak	2016	1	6/1–6/27	380	0	3	0	377
Uyak	2016	2	6/28–7/25	380	0	1	1	378
Uyak	2016	3	7/26–8/24	380	0	2	1	377

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Area Stratum	Year	Temporal Stratum	Period	Number of Fish				
					Fish Removed			
				Genotyped	Alternate Species	Missing Loci	Duplicate	Final
Karluk/Sturgeon	2014	1	6/1–6/27	380	0	0	0	380
Karluk/Sturgeon	2014	2	6/28–7/25	380	0	10	0	370
Karluk/Sturgeon	2014	3	7/26–8/24	380	0	7	0	373
Karluk/Sturgeon	2014	4[a]	8/25–8/29	285	0	1	0	284
Karluk/Sturgeon	2015	1	6/1–7/3	380	0	5	0	375
Karluk/Sturgeon	2015	2	7/4–8/1	380	0	2	3	375
Karluk/Sturgeon	2015	3	8/2–8/29	380	0	5	0	375
Karluk/Sturgeon	2016	1	6/1–6/27	380	0	2	0	378
Karluk/Sturgeon	2016	2	6/28–7/25	380	0	14	0	366
Karluk/Sturgeon	2016	3	7/26–8/24	380	0	5	0	375
Ayakulik/Halibut Bay	2014	1	6/1–6/27	380	0	2	0	378
Ayakulik/Halibut Bay	2014	2	6/28–7/25	380	0	1	0	379
Ayakulik/Halibut Bay	2014	3	7/26–8/29	380	0	6	0	374
Ayakulik/Halibut Bay	2015	1	6/1–7/3	380	0	3	0	377
Ayakulik/Halibut Bay	2015	2	7/4–8/1	380	0	3	0	377
Ayakulik/Halibut Bay	2015	3	8/2–8/29	380	0	1	0	379
Ayakulik/Halibut Bay	2016	1	6/1–6/27	223	0	4	0	219
Ayakulik/Halibut Bay	2016	2	6/28–7/25	380	0	3	0	377
Ayakulik/Halibut Bay	2016	3	7/26–8/24	380	0	2	0	378

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Area Stratum	Year	Temporal Stratum	Period	Number of Fish				
					Fish Removed			
				Genotyped	Alternate Species	Missing Loci	Duplicate	Final
Cape Alitak/Humpy-Deadman	2014	2	6/28–7/25	380	0	5	0	375
Cape Alitak/Humpy-Deadman	2014	3	7/26–8/29	380	0	5	0	375
Cape Alitak/Humpy-Deadman	2015	1	6/1–7/3	380	0	12	0	368
Cape Alitak/Humpy-Deadman	2015	2	7/4–8/1	380	0	7	0	373
Cape Alitak/Humpy-Deadman	2015	3	8/2–8/29	380	0	7	0	373
Cape Alitak/Humpy-Deadman	2016	1	6/1–6/27	380	0	5	0	375
Cape Alitak/Humpy-Deadman	2016	2	6/28–7/25	380	0	7	1	372
Cape Alitak/Humpy-Deadman	2016	3	7/26–8/24	380	0	12	0	368
Cape Igvak	2015	2	6/1–7/3	380	0	10	0	370
Cape Igvak	2016	1	6/1–6/27	380	0	4	0	376
Cape Igvak	2016	2	6/28–7/25	380	0	6	0	374
			Overall KMA Total	18,558	0	221	10	18,327

[a] In 2014, we split the Late stratum for Uganik-Kupreanof, Uyak, and Karluk-Sturgeon into 2 substrata to better infer if the significant postsampling harvest was *local*. To this end, 285 additional fish were analyzed from the last commercial opening in the late stratum.

APPENDIX D: ESTIMATES OF STOCK COMPOSITION (%) AND STOCK-SPECIFIC HARVEST FOR TEMPORAL STRATUM 4 ("LATE-LATE"; AUGUST 25-29) OF UGANIK-KUPREANOF, UYAK, AND KARLUK-STURGEON SAMPLING AREAS, 2014

Appendix D1.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 4 (August 25–29; Harvest = 126,310; n = 280) of Uganik-Kupreanof (statistical areas 253-11, 12, 13, 14, 31, 32, 33, 34, 35), 2014. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.0	0.92	0.0	0.0	0	0	2	6	58
Chignik		0.0	0.0	0.1	0.72	0.0	0.1	0	0	93	20	102
Kodiak		99.0	97.6	99.7	0.00	98.9	0.6	125,006	123,306	125,895	124,858	814
Cook Inlet		0.0	0.0	0.2	0.52	0.0	0.1	0	0	230	39	138
Prince William Sound		0.0	0.0	0.0	0.92	0.0	0.1	0	0	3	7	70
South of Cape Suckling		1.0	0.3	2.3	0.00	1.1	0.6	1,232	380	2,887	1,380	791
										Total	126,310	
Chignik	Black Lake	0.0	0.0	0.0	0.92	0.0	0.0	0	0	2	5	50
	Chignik Lake	0.0	0.0	0.0	0.79	0.0	0.1	0	0	52	15	89
Kodiak	Upper Station/Akalura	5.5	2.8	9.0	0.00	5.6	1.9	6,915	3,489	11,406	7,112	2,417
	Ayakulik/Frazer	0.0	0.0	2.6	0.69	0.4	0.9	0	0	3,265	517	1,186
	Karluk	91.9	87.8	95.2	0.00	91.8	2.3	116,140	110,848	120,227	115,910	2,875
	Uganik	0.0	0.0	0.0	0.92	0.0	0.0	0	0	2	5	55
	Northwest Kodiak	0.0	0.0	0.0	0.92	0.0	0.1	0	0	2	6	64
	Afognak	0.0	0.0	0.0	0.92	0.0	0.0	0	0	1	5	47
	Eastside Kodiak	0.0	0.0	0.0	0.91	0.0	0.1	0	0	3	9	92
	Saltery	0.9	0.2	2.3	0.00	1.0	0.7	1,127	268	2,892	1,294	835

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Appendix D2.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 4 (August 25–29; Harvest = 70,084; n = 281) of Uyak (statistical areas 254-10, 20, 21, 30, 31, 40, 41), 2014. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.0	0.92	0.0	0.0	0	0	1	3	32
Chignik		0.0	0.0	0.0	0.85	0.0	0.1	0	0	12	6	41
Kodiak		99.7	98.9	100.0	0.00	99.6	0.4	69,894	69,302	70,068	69,816	259
Cook Inlet		0.0	0.0	0.0	0.89	0.0	0.0	0	0	4	4	33
Prince William Sound		0.0	0.0	0.1	0.88	0.0	0.1	0	0	57	15	80
South of Cape Suckling		0.2	0.0	1.1	0.05	0.3	0.4	163	1	738	241	250
										Total	70,084	
Chignik	Black Lake	0.0	0.0	0.0	0.92	0.0	0.0	0	0	1	3	27
	Chignik Lake	0.0	0.0	0.0	0.92	0.0	0.0	0	0	1	3	31
Kodiak	Upper Station/Akalura	14.5	10.3	19.4	0.00	14.7	2.7	10,186	7,247	13,576	10,273	1,923
	Ayakulik/Frazer	1.3	0.1	4.1	0.03	1.6	1.3	936	60	2,897	1,144	895
	Karluk	82.1	76.7	86.8	0.00	81.9	3.1	57,507	53,733	60,799	57,418	2,148
	Uganik	0.0	0.0	0.0	0.91	0.0	0.1	0	0	3	7	58
	Northwest Kodiak	0.0	0.0	0.0	0.92	0.0	0.1	0	0	1	4	38
	Afognak	0.0	0.0	0.0	0.92	0.0	0.0	0	0	1	3	25
	Eastside Kodiak	0.0	0.0	0.0	0.92	0.0	0.1	0	0	1	4	38
	Saltery	1.2	0.4	2.8	0.00	1.4	0.8	875	267	1,969	964	535

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.

Appendix D3.–Regional and subregional (within Chignik and Kodiak) estimates of stock composition (%) and stock-specific harvest for temporal stratum 4 (August 25–29; Harvest = 55,637; n = 284) of Karluk-Sturgeon (statistical areas 255-10, 20; 256-40), 2014. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero (*P = 0*), mean, and standard deviation (SD).

Reporting Group		Stock Composition						Stock-specific Harvest				
			90% CI						90% CI			
Regional	Subregional	Median	5%	95%	*P = 0*	Mean	SD	Median	5%	95%	Mean	SD
West of Chignik		0.0	0.0	0.0	0.91	0.0	0.1	0	0	3	5	41
Chignik		0.0	0.0	0.0	0.85	0.0	0.1	0	0	10	4	30
Kodiak		100.0	99.5	100.0	0.00	99.9	0.2	55,637	55,369	55,637	55,596	131
Cook Inlet		0.0	0.0	0.2	0.87	0.0	0.2	0	0	100	21	104
Prince William Sound		0.0	0.0	0.0	0.91	0.0	0.1	0	0	3	6	47
South of Cape Suckling		0.0	0.0	0.0	0.91	0.0	0.1	0	0	3	5	42
										Total	55,637	
Chignik	Black Lake	0.0	0.0	0.0	0.92	0.0	0.0	0	0	1	2	21
	Chignik Lake	0.0	0.0	0.0	0.92	0.0	0.0	0	0	1	2	22
Kodiak	Upper Station/Akalura	12.7	8.6	17.3	0.00	12.8	2.6	7,045	4,807	9,632	7,110	1,468
	Ayakulik/Frazer	0.3	0.0	3.7	0.20	0.9	1.3	152	0	2,081	522	735
	Karluk	85.6	80.4	90.0	0.00	85.4	2.9	47,612	44,744	50,057	47,533	1,620
	Uganik	0.0	0.0	0.2	0.86	0.0	0.2	0	0	133	23	113
	Northwest Kodiak	0.0	0.0	0.0	0.92	0.0	0.0	0	0	1	2	22
	Afognak	0.0	0.0	0.0	0.92	0.0	0.0	0	0	1	2	21
	Eastside Kodiak	0.0	0.0	0.0	0.91	0.0	0.1	0	0	1	4	36
	Saltery	0.6	0.0	1.8	0.04	0.7	0.6	331	2	1,024	400	323

Note: Stock composition estimates may not sum to 100% and stock-specific harvest estimates may not sum to the total harvest due to rounding error.